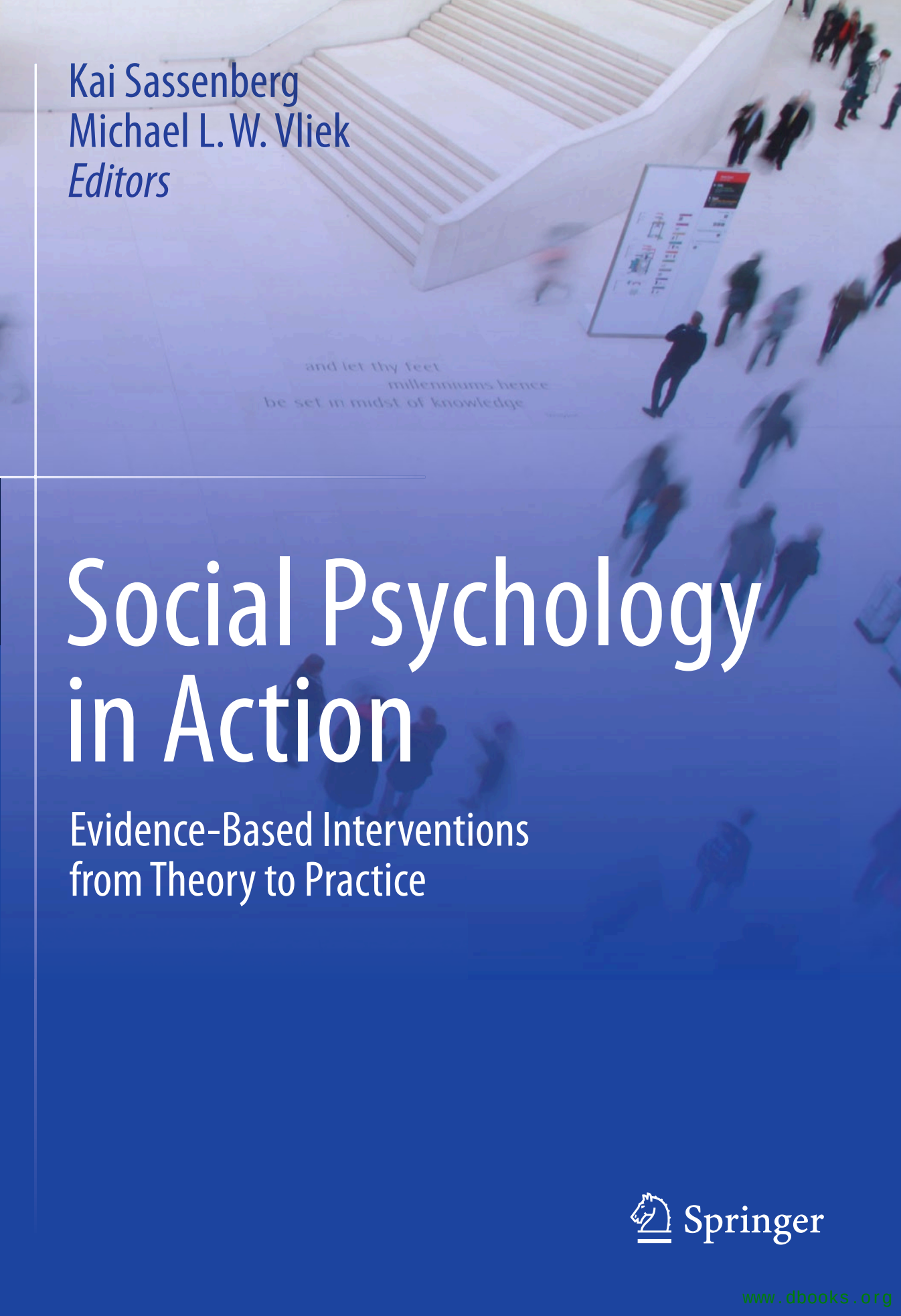

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Michael L. W. Vliek
Editors

Social Psychology in Action

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Introduction: Nothing as Practical as a Good Theory

"Nothing as Practical as a Good Theory"

The above maxim is often attributed to psychologist Kurt Lewin. Shortly after his death in 1947, the psychological historian E. C. Tolman wrote of Lewin: "Freud the clinician and Lewin the experimentalist – these are the two men whose names will stand out before all others in the history of our psychological era" (Marrow, 1969). Although Freud has become a household name, Lewin's ideas and work are mostly unknown to the general public. Among psychologists, however, Kurt Lewin is well known as one of the founders of modern experimental social psychology and recognized for his early contributions in applying psychological science to real human society.

His interest in the social uses of psychological research is evident not only from his work on "group dynamics"—a term he coined, involving, for example, research on leadership, communication, and group performance—but also from the applied research institutes he established, such as the Committee on Community Interrelations (McCain, 2015). Indeed, for Lewin, research served a double purpose: "to seek deeper explanations of why people behave the way they do *and* to discover how they may learn to behave better" (Marrow, 1969, p. xi; Italics added). Science was, in other words, a way to discover general laws of human functioning as well as a way to solve practical problems, a combination Lewin labeled "action research." To achieve this goal, Lewin proposed, there is nothing as practical as a good theory—a maxim Lewin himself attributed to "a business man" he once met (Lewin, 1943).

For Lewin, social psychological theories were useful guides that could help practitioners by providing them with the tools and confidence needed for action (Sandelands, 1990). However, he also noted that "we will have to watch out that theory never breaks loose from its proper place as a servant, as a tool for human beings" (Lewin, 1943, p. 118). What he meant here is that a theory should never be accepted as providing *definitive* answers on how to address complex social problems, partly because not all theories are *good* theories (e.g., consistent, falsifiable, parsimonious, precise) and because no theory is necessarily *true*. Indeed, "it may be (partly) true, but it may also be (partly) false. A theory is a set of ideas meant to explain observable events. Appropriate scientific methods are needed to test whether or not a theory achieves this aim. Theories thus are the basis to expand our understanding of

the world" (Gieseler, Loschelder and Friese, Chap. 1, p. 6). Instead, theories should be used as practical guides enabling a closer examination of why and under what circumstances interventions may be successful in obtaining a desired behavioral or psychological end-state. As we shall see in the following chapters, applying theoretical insights is difficult and its success depends on many factors, not least the specifics of the applied contexts.

When Social Psychology Turned Away from (Applying) Theories

With the death of Lewin, the interest in the social uses of social psychological knowledge dwindled (for a discussion see Hill, 2006). Some of the reasons for this lack of interest in applied (social psychological) research were already identified by Lewin in 1943. For example, in these early years, properly developed theory was lacking, as were concise, reliable measures of social behavior. Lewin also recognized that a meaningful application of psychological insights requires detailed knowledge of the specific context within which the application takes place. This made applied research much more time consuming and more expensive than experimental research in the lab. Finally, compared to the general laws of human functioning psychologists were looking for, dealing with nongeneral, applied problems was not looked at with much favor by early social psychologists, or in the words of Singer and Glass (1975, p. 16): "To be a major contribution a study must deal with basic, not applied, problems." As a consequence, social psychology often had a lot to say in general, but little to say in particular (Deutsch, 1975).

Another trend that developed over the years, having a detrimental effect on the usefulness of social psychological knowledge for applied problems, was a focus on "sexy-hypothesis testing" (Fiedler, 2017). Instead of testing and developing social psychological theories, researchers focused on the impact of a single causal factor (often with only two levels) on a single dependent variable with a focus on counter-intuitive outcomes. The predicted effects are binary (i.e., A affects B) rather than quantified in size (i.e., A explains X percent of variance of B). Even more problematic is the observation that quite a few of these studies violated good scientific practices (e.g., Fiedler & Schwarz, 2016). Studies were often conducted with overly small sample sizes and researchers reverted to several questionable research practices in order to publish their results (for a discussion see Gieseler et al., Chap. 1). For example, when the research was written up, researchers regularly failed to report all dependent measures or even conditions relevant for a finding, and reverted to HARKing (hypothesizing after the results are known; Kerr, 1998), leading authors to report unexpected findings as having been predicted from the start. It is highly likely that such practices have contributed to "sexy" but invalid findings in the psychological literature. Perhaps the most prominent example is Bem's (2011) article that claimed to provide evidence for pre-cognition (i.e., the ability to foresee the future).

Many measures have recently been taken to address these problems. Some are at the methodological level, such as journals' demands for higher

statistical power and the reduction of researchers' degrees of freedom in data handling (e.g., through preregistering the study, reporting all measures, conditions, and cases; Simmons, Nelson, & Simonsohn, 2012). Strong a priori theories that are cumulatively developed are likewise a powerful measure against this development (Fiedler, 2017). For example, if a study builds upon a theory, HARKing is less of an option because the hypothesis is explicitly stated in the theory or at least derived from it. Moreover, within a theoretical tradition degrees of freedom are lower, given that there are often well-established measures and manipulations that are used in the tradition of the theory. New insights in a theoretical tradition are cumulative (i.e., they add to what is already known) and thus less original. However, findings that relate to and extend what is already known are more likely to be true than those validating isolated counter-intuitive hypotheses. This is but one reason why relying on theories in the development of knowledge is important: it contributes to the replicability of findings and thus to valid knowledge (cf. Greenwald, Pratkanis, Leippe, & Baumgardner, 1986).

The Renaissance of Applying Social Psychological Theories

Because social psychology studies the interaction between situational and dispositional forces that influence every day, *normal* human behavior, such findings have traditionally played an important role in the development of behavioral interventions directed at the amelioration of a wide range of issues across all areas of applied psychology. Indeed, social psychological knowledge is increasingly recognized as central to many of the challenges the individual, the state, and civil society faces. This is evident, for example, in publications by the World Health Organization recognizing the importance of *social determinants* for understanding health behavior (e.g., lifestyles, social norms; CSDH, 2008). As a result, social psychological findings are being applied across public, commercial, and charity sectors, often with the goal to influence people and change their behavior.

To successfully apply social psychological findings, theory is indispensable. Indeed, evidence suggests that interventions with a theoretical basis are more effective than those without a theoretical basis (e.g., Michie & Johnston, 2012; Webb, Joseph, Yardley, & Michie, 2010). Theories are not only used to inform intervention design, for instance, to gain ideas what might help and what might not help to change behavior in a certain domain (Heath, Cooke, & Cameron, 2015). They also help to classify interventions according to the underlying concepts and in this way contribute to their effectiveness and inform the integration of evidence (Michie & Prestwich, 2010). Finally, and perhaps most closely to what Lewin or the business man had in mind: theories can guide practitioners and provide them with the confidence needed for action (Sandelands, 1990).

Social psychological theories play an increasingly important role in attempts to intervene in human behavior. For example, social psychological theorizing has been applied to generate interventions for a wide variety of

fields ranging from pro-environmental behavior such as energy conservation (e.g., Abrahamse, Steg, Vlek, & Rothengatter, 2005) to prosocial behavior such as blood donation (e.g., Masser, White, Hyde, & Terry, 2008). More generally, it has been used to facilitate the understanding of numerous phenomena in the organizational contexts such as leadership (e.g., Ellemers, de Gilder, & Haslam, 2004) or educational settings such as students' conflict regulation (e.g., Darnon, Muller, Schrager, Pannuzzo, & Butera, 2006). Many more examples across a variety of applied settings, such as health, political, or consumer behavior, are presented in each of the chapters of this book.

The Content of This Book

In this edited volume, we bring together leading scientists in the field of social psychology in order to illustrate how key theories and concepts can be applied to benefit social and practical problems. We dive into social psychological literature to illustrate how key theories and the underlying concepts help to predict and explain behavior. We focus on robust theories and models that have been successfully applied, covering a diverse range of settings: from interventions in the classroom to health behavior, and from financial decision making to the reduction of prejudice and discriminatory behavior. With this volume we hope to inform and benefit professionals involved in behavior change. In addition, we want to prepare students of psychology and human behavior to apply their knowledge in later jobs.

Because theories take center stage in this volume, in Chap. 1 Gieseler, Loschelder, and Friese provide an answer to the fundamental question "*what is a good theory?*". More specifically, this chapter discusses two basic questions: (1) what are criteria for evaluating the quality of a psychological theory, and (2) what are criteria for evaluating the empirical evidence related to a theory. The chapter discusses these criteria by examining one specific theory and accompanying empirical work as an illustrative example—the Strength Model of Self-Control (Baumeister & Heatherton, 1996; Baumeister & Vohs, 2016). Although necessarily incomplete, the discussed criteria can be applied to many theories in (social) psychological research. They are therefore relevant not only to basic research, but also to any applied work that is grounded in theory.

The rest of this book is divided in two main parts. In part I, each chapter discusses a specific social psychological theory and takes a two-step approach. First, a *theoretical part* will define the key concepts and summarize the theory, providing evidence for its reliability and limitations from basic research. A second, *applied part* will summarize research in applied contexts and provide details about one particular study including the respective application setting. The aim of this first part of the book is not only to show that theories make meaningful predictions for real-world contexts, but also what the hurdles and pitfalls in applying a theory and the underlying set of concepts in a certain context are. In part II, the chapters take a slightly different approach. Because real-world problems are often highly complex, with a myriad of factors that may influence the problem under investigation, in this part chapters

will approach specific problems from different angles, using relevant concepts and theory to engage with the applied question. The aim of the second part will be to show how different theoretical insights can be meaningfully combined in order to understand and possibly intervene in a range of social issues.

Part I

The first part starts with three chapters presenting theories about *motivation*. Keller, Bieleke, and Gollwitzer present the *mindset theory of action phases* (MAP) and *implementation intentions* in Chap. 2. The MAP describes four different phases people go through during goal pursuit and the specific cognitive procedures (or mindsets) activated to cope with the demands of each phase. Implementation intentions are if-then plans that are highly efficient in initiating pursuit goals in difficult situations (e.g., when opportunities are likely to be missed). The chapter presents a field example providing evidence for their effectiveness beyond the lab: in this featured study implementation intentions facilitated sustainable consumption.

Chapter 3, by Guy Roth, presents *self-determination theory*. In contrast to MAP, self-determination theory is not concerned with the process of goal pursuit but with the question whether the source of people's motivation is autonomous or externally controlled—in other words whether the striving is determined by oneself or by others. The theory and the chapter name antecedents and beneficial consequences of autonomous motivation. The external validity of the theory is demonstrated in a featured intervention study showing that training teachers to educate students in a way that facilitates autonomous motivation increases this type of motivation as well as students' performance.

Chapter 4, by Sassenberg and Vliek, targets yet another aspect of motivation, namely the selection of means. It presents *regulatory focus theory*, which provides insights about people's strategies for mean selection during goal striving. In addition, *regulatory fit theory* is discussed, which states that engagement is higher in case there is a fit between people's preferred strategy and the strategic demands of a context (e.g., when people prefer to act carefully and the context requires exactly that strategy). After discussion of several applied contexts, a featured intervention study is described, showing that communication fitting with recipients' preferred self-regulation strategy leads to more physical activity than communication not fitting recipients preferred strategy.

Following these chapters on motivation, Chaps. 5, 6, and 7 focus on a variety of forms of *social influence*. Chapter 5 by Verplanken and Orbell discusses *habits* and how they can be changed despite their rigidity. The authors describe what habits are and what they do, such as effects on information processing, the relationship with intentions, and the "stickiness" of habits. Evidence for the real-world relevance of Verplanken and Orbell's theorizing comes from a study showing that moving (i.e., the change of an individual's

social environment) provides a window of opportunity for habit change using the case of sustainable behavior (e.g., energy saving behaviors).

In Chap. 6, Mühlberger and Jonas present theorizing about motivated resistance against social influence (rather than unintended rigidity in the case of habits). The chapter discusses the concept of and theorizing about *reactance*—a motivational state directed toward restoring or securing freedom—that often occurs in response to undesired social influence. Several preconditions and consequences of reactance are discussed, followed by a discussion of several fields of application and an illustration of an applied study of reactance theory to political behavior.

The final chapter relating to social influence comes from Stok and de Ridder. In Chap. 7 they present the *focus theory of normative conduct*. Norms are a means of social influence as they provide individuals with decisional shortcuts on how to behave in certain situations. They either refer to typical behavior (descriptive norms) or appropriate behavior (injunctive norms). The chapter specifies the conditions under which norms assert an influence on people's behavior. Finally, the featured intervention study provides evidence that norms have the power to influence people's pro-environmental behavior, if they are communicated in the right way.

The next three chapters turn to *social groups*. In Chap. 8 Butera and Buchs present *interdependence theory*—a theory making predictions about the implication of the (perceived) requirement to cooperate or to compete while working on a task. Based on this theory the chapter discusses the preconditions for successful cooperation and features a study demonstrating that these conditions indeed assert a positive influence on cooperation in the classroom.

Turning from interpersonal relations (and the interdependence structure) to the relation individuals have to groups as a whole, Scheepers and Ellemers present *social identity theory* in Chap. 9. This theory posits that group memberships contribute to people's self-concepts: the so-called social identity. The chapter presents an overview of work on social identity and its applications to health and organizational settings. The external validity of the theory is demonstrated in two studies describing a social identity-based intervention for improving intergroup relations in an educational setting.

Chapter 10 by Christ and Kauff turns from single groups to *intergroup relations*. It summarizes intergroup contact theory, which states the conditions under which contact between members of different social groups contribute to the improvement of the attitudes toward the respective outgroup. It features two studies demonstrating the successful improvement of attitudes toward outgroup members in heated intergroup conflicts, namely the Israeli-Palestinian conflict and the conflict between Hutu and Tutsi in Rwanda.

The section on single theories and their application is closed by two *social cognitive* theories. Chapter 11 by Wittenbrink, Correll, and Ma takes a different approach to intergroup relations and targets so-called implicit prejudice—that is, the automatically activated attitudes associated with certain groups. The chapter summarizes the social cognitive processes by which these attitudes assert an influence on people's behavior toward members of these groups. A featured study is summarized showing that these attitudes have the

potential (among police officers) to lead to a higher likelihood to shoot an African American compared to a White American suspect.

Finally, in Chap. 12, Bernecker and Job present *mindset theory* (not to be confused with the mindset theory of action phases, MAP) distinguishing between entity mindsets—laypeople's assumption that people's characteristics on a certain domain are stable—and incremental theorists—laypeople's assumption that characteristics are malleable. The implications of these implicit theories across a number of domains are summarized, leading to the conclusion that holding an incremental theory is beneficial in many instances. This is illustrated in a featured intervention study showing the benefits of an incremental mindset for victims of bullying.

Part II

The final three chapters form the second part of the book. Here several theoretical insights are used in order to understand and possibly intervene in a range of real-world problems. This part starts with Chap. 13 by van der Werf, van Dijk, Wilderjans, van Dillen on how to promote healthy financial behavior (i.e., putting money aside in savings to cover unexpected and necessary expenses). This chapter discusses a number of (social) psychological "hurdles" that may contribute to many people's failure to put money aside for future financial needs. The chapter closes with a discussion of two intervention studies using these insights to improve people's saving behavior.

In Chap. 14, Utz discusses the impact of social media use on people's emotions. The chapter discusses a number of phenomena and theories that can explain why and how social media affect people's emotions and guide their behavior. It features a study demonstrating that the emotions elicited by social media can even guide consumer behavior.

Finally, Chap. 15 by Dinnick and Noor explores what might determine how a group responds to the suffering it has experienced at the hand of another group. It introduces the concept of *intergroup forgiveness* and discusses its potent promise in facilitating conflicting groups to transform from mutual enmity to peaceful coexistence. The authors analyze the role of social identity, victim belief construals (the way the group frames its suffering), and their potential interplay as possible determinants of forgiveness. They review empirical research based on studies conducted with groups caught up in real-life conflict settings (e.g., Israel-Palestine, Northern Ireland). The chapter presents several theory-based intervention studies oriented toward healing fractured intergroup relations.

Didactic Features

The chapters in this book are equipped with a number of didactic features that should ease the deep level learning of the content and the elaboration of ideas. First, there are boxes in the text that serve different functions. *Definition boxes* give definitions of the main constructs and thereby highlight these

important concepts. Each chapter also includes a short *summary section* at the end, which also highlights key content. *Zooming-in boxes* illustrate topics more in depth and, thus, provide more background or point to relevant other theorizing. Here, other/conflicting theoretical approaches and laboratory or field studies are summarized that may help to integrate the content of the chapter with other theories or content. If you want to zoom-in even further, the list of *recommended readings* at the end of each chapter will provide a guideline where to find more information about the theories and research questions presented in each chapter. *Questions for elaboration* are supposed to stimulate engagement with the text and provide the opportunity to develop the presented literature a bit further. These are often open-ended questions with no definite answer, but sample responses are included at the end of the chapters.

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Contents

Part I

Applying Social Psychological Theory: A Single Theory Approach

What Makes for a Good Theory? How to Evaluate a Theory Using the Strength Model of Self-Control as an Example

1

Karolin Gieseler, David D. Loschelder, and Malte Friese

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Introduction

The present chapter differs from the others you will read in this book: Chapters in the first section present a specific theory and elaborate on research in applied contexts, in which the respective theory has been used. Chapters in the second section start out with a real-world phenomenon and explain how different psychological theories can help to better understand human behavior or contribute to solving real-world problems. In the present chapter, we take a step back and discuss how the quality of a theory and the quality of its accompanying empirical foundation can be evaluated. In doing so, we distinguish between two different perspectives, the theoretical perspective (Does a theory meet general criteria of a good theory?) and the empirical perspective (How scientifically sound is the research related to a theory?).

In the first part of this chapter, we introduce the Strength Model of Self-Control (Baumeister & Heatherton, 1996; Baumeister & Vohs, 2016). The model will serve as an illustrative reference point throughout the chapter. It is one of the most prominent, researched, and debated theories in social psychology of the last 25 years. Using this concrete example hopefully renders the subsequent discussion of (sometimes) abstract questions and concepts more tangible.

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The second part of the chapter addresses basic questions relating to scientific theorizing, such as: What is a theory? Why do we need theories? And what makes for a *good* theory? We first discuss criteria for evaluating theories in general before applying them to the Strength Model.

In the third part, we examine criteria to evaluate how theories fare on the *empirical* side. Again, we first discuss criteria for the quality of empirical work in general before applying them to the Strength Model.

The Strength Model of Self-Control

The Strength Model of Self-Control (Baumeister & Heatherton, 1996; Baumeister & Vohs, 2016) originated from observations from everyday life: When reviewing a large and diverse literature, Baumeister and colleagues observed that people who have difficulties following their long-term goals in one life domain often experience similar difficulties in other domains as well. The authors also noticed that self-control failures tend to occur more frequently after long and tiring days, in stressful times, or when demands are unusually high. They concluded that people behave as if **self-control** was a general capacity that is limited and can be depleted.

In their Strength Model, the authors employed the analogy of a (self-control) muscle that becomes tired with use. The model makes two central assumptions: First, self-control draws on a *limited resource;* the exertion of self-control increases the probability of self-control failure in subsequent attempts. Second, self-control is a *domain-general* construct. An exertion of self-control in one domain will increase the likelihood of self-control failure in any other domain that requires self-control. The Strength Model thus assumes a cause-effect relation between the exertion of self-control and the subsequent impairment in self-control performance. Baumeister and colleagues referred to the state of reduced self-control resources as *ego depletion*.

One important implication of the theory's assumptions is that self-control can be improved with practice: If self-control works like a muscle, the repeated exertion of self-control should lead to repeated states of ego depletion, but, in the long run, the muscle should be strengthened, and the overall self-control ability should improve (e.g., Job, Friese, & Bernecker, 2015; Muraven, 2010; for meta-analyses, see Beames, Schofield, & Denson, 2017; Friese, Frankenbach, Job, & Loschelder, 2017). In the present chapter, we focus on those aspects of the Strength Model that are concerned with the **ego depletion effect** rather than with the trainability hypothesis.

Definition Box

Self-Control: "Ability to override or change one's inner responses, as well as to interrupt undesired behavioral tendencies (such as impulses) and refrain from acting on them" (Tangney, Baumeister, & Boone, 2004, p. 274).

Ego Depletion Effect: A person shows impaired performance in self-control demanding tasks after she has previously exerted self-control (compared to a control group that has not exerted self-control in task 1).

To test the model's core assumptions in the psychological laboratory, Baumeister and colleagues developed the *sequential task paradigm*: They had participants work on two sequential tasks demanding self-control and measured their performance in the second task as a function of whether the first task was high or low in self-control demands (e.g., Baumeister, Bratlavsky, Muraven, & Tice, 1998). Hundreds of studies following this paradigm have provided evidence for this ego depletion effect (for reviews and meta-analyses, see Baumeister & Vohs, 2016; Carter, Kofler, Forster, & McCullough, 2015; Hagger, Wood, Stiff, & Chatzisarantis, 2010; Hirt, Clarkson, Egan, & Eyink, 2016). For example, Muraven, Collins, and Neinhaus (2002) had participants either suppress their thoughts in a first task (which requires self-control) or not. Those who exerted self-control in the first task consumed

more beer during a subsequent taste test, even though participants knew they were about to do a driving test afterward. In another exemplary study, chronic dieters who suppressed their emotional reactions to a sad video (a self-control demanding task) later consumed more ice cream during a product test than those who were instructed to react naturally while watching the video (Vohs & Heatherton, 2000).

Box 1.1 Questions for Elaboration

1. Assume the Strength Model of Self-Control is accurate. Think about activities in your daily life that should lead to depletion-like effects.
2. Think about possible strategies that you could use to counteract ego depletion effects in your daily life. These could be strategies that you have used yourself or that you may know from other chapters in this book (e.g., Rubicon model and implementation intentions, Keller et al., Chap. 2; Mindset theory, Bernecker & Job, Chap. 12).
3. Can you think of situations when your self-control felt unlimited? How did these situations differ from when you felt depleted, lacking ability to self-control?
4. Assume the Strength Model of Self-Control was *in*accurate: The ability to exert self-control was not limited. What would your daily life and the world more generally look like? Any different from the present reality?

Despite the seemingly abundant evidence in favor of the Strength Model, the model and its accompanying empirical work have been heavily criticized in recent years. These criticisms go so far that many researchers doubt that the ego depletion effect is a real phenomenon after all. We will elaborate on some of these issues that have been criticized in later parts of this chapter (for an overview of the debate, see Friese, Loschelder, Gieseler, Frankenbach, & Inzlicht, 2019).

Behavioral Versus Process Level of Psychological Phenomena

Before we turn to the discussion of criteria to evaluate a theory, we need to introduce an important distinction between two different levels of analysis that will guide our further thinking: the distinction between the *behavioral* and the *process level* (also referred to as "functional" and "cognitive" level of analysis, see De Houwer, 2011; Fig. 1.1). The **behavioral level of analysis** defines behavioral effects exclusively in terms of changes in elements of the environment that cause behavioral changes on a dependent variable. For instance, insulting someone increases aggressive behavior in the insulted person. By contrast, the **process level of analysis** refers to the underlying mental processes that are triggered by elements in the environment and are responsible for subsequent changes on a dependent variable. For example, an insult may trigger anger that then translates into aggressive behavior. These two levels of analysis must not be conflated. In the words of De Houwer (2011, p. 201):

> "… using behavioral effects as a proxy for mental constructs violates the general scientific principle that the *explanandum* (that which needs to be explained; in this case, behavioral effects) needs to be kept separate from the *explanans* (that which is used to explain; in this case, mental constructs; Hempel, 1970)."

Definition Box

Behavioral level of analysis: Defining behavioral effects exclusively in terms of elements in the environment.

→ Which elements in the environment lead to a certain behavior? (De Houwer, 2011)

Process level of analysis: Examining the nature of underlying mental processes that are assumed to guide behavior/behavioral effects.

→ Via which underlying mental process(es) do certain elements in the environment lead to a certain behavior? (De Houwer, 2011)

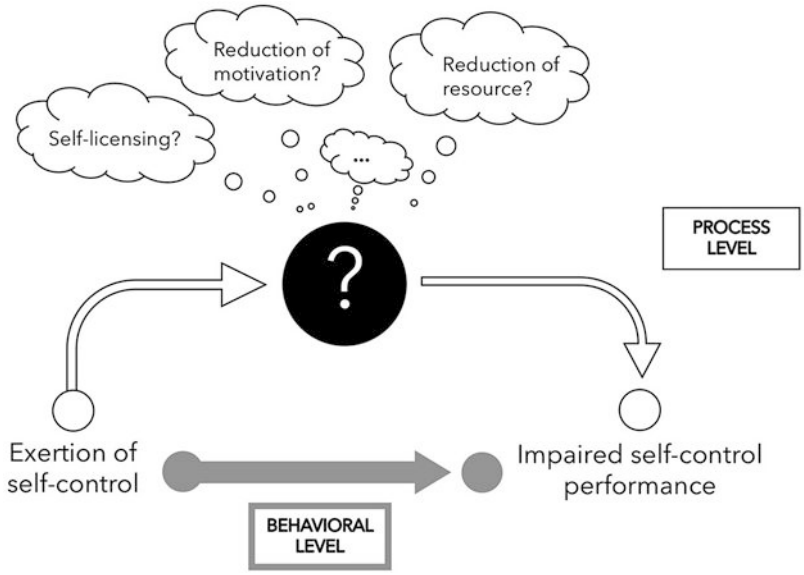

Fig. 1.1 Levels of scientific analysis for the example of the ego depletion effect. The behavioral level denotes the cause-effect relation: The exertion of self-control leads to subsequent impairments in self-control performance (gray arrow). The process level refers to the underlying psychological mechanisms that are triggered by the exertion of self-control—that is, the mechanisms on the process level are causally responsible for the behavioral effect. (White arrows via question mark; adapted from De Houwer, 2011)

The Strength Model makes assumptions on both levels of analysis. On the behavioral level, it states that the initial exertion of self-control causes a subsequent impairment in self-control performance, linking two elements in the environment: self-control exertion at time one and impaired self-control performance at time two (relative to a control group). On the process level, the model assumes that the behavioral effect is mediated by the depletion of an internal, limited resource (the nature of this resource is not further defined). For present purposes, the distinction is important as there are several other theoretical models beyond the Strength Model seeking to explain the same behavioral phenomenon (behavioral level) with fundamentally different assumptions concerning the underlying process (process level; for further reading see, e.g., De Witt Huberts, Evers, & De Ridder, 2014; Evans, Boggero, & Segerstrom, 2015; Inzlicht, Schmeichel, & Macrae, 2014).

Theoretical Perspective: Criteria to Evaluate the Quality of Theories

Having briefly described the Strength Model's basic assumptions and some accompanying empirical evidence, let us take a step back: the empirical foundation aside, is the Strength Model a "good" theory to start with? And more generally, what makes for a good theory? In science, a theory constitutes one or several joined-up principles that are meant to describe, explain, and predict a phenomenon or several related phenomena (Estrada & Schultz, 2017). A theory is not necessarily true. It may be (partly) true, but it may also be (partly) false. A theory is a set of ideas meant to explain observable events. Appropriate scientific methods are needed to test whether or not a theory achieves this aim. Theories thus are the basis to expand our understanding of the world. For social psychologists,

they are the starting point for interventions to address individual and social problems and to change problematic behavior (see second section of this book: Combining theoretical insights: Addressing complex human behavior).

Taking the Strength Model as an example, one could say that the model's two main assumptions—*limited resource* and *domain-general construct*—are meant to predict and explain the phenomenon of impaired self-control performance after the exertion of self-control. This pertains to the psychological laboratory *and* to people's everyday life. In the long run, if the model stands the test of time, interventions based on the Strength Model may thus address self-control failures across various domains often challenging self-control such as eating, drinking, exercising, social interactions, and procrastination, among others.

Not all theories are *good* theories, however. And to distinguish the good from the not so good, there are several criteria to consider. Here, we focus on six criteria, namely, consistency, precision, parsimony, generality, falsifiability, and progress, while omitting (partly overlapping) criteria such as refutability or truth (see Gawronski & Bodenhausen, 2015; Van Lange, 2013; see Table 1.1). Due to space restrictions, our list and discussion are necessarily incomplete. A more in-depth treatment can be found in Gawronski and Bodenhausen (2015), our primary source for this part of the chapter. We start each of the following sections by first defining the respective criterion and then subsequently applying the criterion to the Strength Model.

Consistency

One obvious characteristic of a good theory is consistency with empirical observations. If a theory does not correspond to empirical observations in the laboratory and/or the real world, it is necessary to adjust the theory (or to refute it). Sometimes a theory turns out to have merit only after some conceptual adjustment. For example, research may identify boundary conditions that specify when predictions derived from the theory do or do not apply. If after adjustments a theory still is not consistent with empirical observations to a satisfactory extent, it may be necessary to abandon the theory.

The Strength Model originates from the observation in the psychological literature that in everyday life people seem more likely to fail at controlling themselves after previously exerting self-control. An *in*consistent observation is that there seem to be other situations in everyday life in which people appear to have no difficulty to

Table 1.1 Selection of quality criteria that make for a good theory and their application to the Strength Model

Criterion	Definition	Application to the Strength Model
Consistency	Correspondence to empirical observations in the laboratory and/or the real world	Hundreds of lab studies and real-world observations consistent with phenomenon. Inconsistent recent (large-scale) replications and preregistered studies
Precision	Clearly defined concepts and operationalizations that allow for little stretching	Imprecise definition of self-control and the limited self-control resource
Parsimony	Explain more with less: Use as few assumptions as possible to explain a given phenomenon	Two core assumptions—limited resource that is domain independent—account for a far-reaching phenomenon
Generality	Favor higher explanatory breadth	Model's assumptions apply to and are observable in a large array of situations, contexts, and behaviors
Falsifiability	Formulate assumptions so that it is possible to make observations prohibited by a theory	Imprecise formulation of self-control and underlying resource make it difficult to falsify some of the theory's predictions
Progress	Inspire new research and discoveries and promote theoretical progress	Theory has spurred hundreds of studies, novel theorizing, and methodological, scientific debates

Inspired by Gawronski and Bodenhausen (2015)

resist their temptations and to successfully control their impulses—even after a demanding previous task. These observations alone do not mean that the Strength Model has to be abandoned. Indeed, several situational and dispositional moderators have been identified that presumably prevent or counteract ego depletion effects (for a review, see Loschelder & Friese, 2016). For example, affirming core personal values (Schmeichel & Vohs, 2009) or being incentivized to perform well have been shown to counteract ego depletion effects (Luethi et al., 2016; Muraven & Slessareva, 2003). In a similar vein, holding a subjective theory that self-control is non-limited (Job, Dweck, & Walton, 2010; Bernecker & Job, Chap. 12) or having a high disposition for action orientation (Gröpel, Baumeister, & Beckmann, 2014) has been found to prevent the occurrence of ego depletion. In all, boundary conditions are crucial and need to be defined well in order to account for theory-consistent and inconsistent findings.

Another (potentially greater) problem for the Strength Model stems from the increasing number of studies that fail to find ego depletion effects without moderating variables being able to explain these inconsistent data (e.g., Etherton et al., 2018; Lurquin et al., 2016; Osgood, 2017; Singh & Göritz, 2018; Vadillo, Gold, & Osman, 2018). The empirical evidence does not seem to as consistently support the theoretical assumptions as was believed for many years. From our perspective, conceptual and empirical work is necessary to address this lack of consistency (especially in light of doubts about the ability of earlier empirical work on the model to lead to firm conclusions, see below and Friese et al., in press). Otherwise, a lack of consistency will seriously threaten the state of the Strength Model as a respected theory.

Precision

A good theory is *precise*, with clearly defined concepts and operationalizations that allow for little stretching or subjective interpretation. The more precise the formulation of a theory and its background assumptions, the less ambiguous it is for researchers to decide which empirical observations are consistent versus inconsistent with the theory (Gawronski & Bodenhausen, 2015). Thus, precision increases the chances of collecting both supporting and refuting empirical evidence for a theory. Imprecise theories leave room for subjective interpretation of empirical findings.

Precision is not a strength of the Strength Model. One problem of the theory is shared with the field of self-control research in general: a precise (and widely accepted) definition of self-control is lacking. Baumeister and Vohs (2016, p. 70) define self-control "as processes by which the self intentionally alters its own responses, including thoughts, emotions, impulses, performance, and behaviors, based on standards." This definition encompasses a great part of what people intentionally do when awake. But not every time a person intentionally alters her own responses to be in line with her standards, she will exert effortful self-control leading to depletion effects. For example, picture a person writing an official Email in line with orthography and grammar. Writing requires altering one's responses based on standards (the norms of orthography and grammar). But for someone educated enough to write decently, this is so low-minded that it seems implausible to assume that such a task will easily lead to discernable depletion-type effects. Thus, this definition of self-control may be too unspecific and likely too broad. Similar points can be made with respect to the alternative definition of self-control provided in the Definition box earlier in this chapter. In all fairness, somewhat vague and imprecise conceptual definitions are nothing unique to the Strength Model, but a feature shared with many other theories and research fields in (social) psychology.

The *im*precise definition of self-control is relevant for the antecedent of impaired self-control (i.e., the independent variable in experimental studies). Here, it pertains to the behavioral level of analysis: What exactly are properties of a valid manipulation that allow for a stringent test of the model, independent of the behavioral effect it may or may not evoke?

The Strength Model's lack of precision becomes especially apparent on the process level: The model postulates the reduction of a "limited resource" as the crucial underlying mechanism that is causally responsible for impaired self-control performance. However, the model does not specify the nature of this resource in any way. In consequence, the model remains too imprecise to test one of its core assumptions as it is impossible to measure an unknown resource.[1]

The lack of precision on the behavioral and process level may contribute to the problems and reproaches that ego depletion research is facing: If researchers do not precisely know how to manipulate the exertion of self-control, it is difficult to distinguish a nonsignificant result caused by a wrong theory from a nonsignificant result caused by an unapt experimental manipulation. Similarly, it is impossible to provide conclusive evidence supporting the underlying process assumptions, if the model does not provide clear guidance about the properties of this very resource (or how to measure it).

Parsimony

A good theory explains more with less. When developing a theory, one possibility is to start with observations, to abstract and generalize them, and to create joined-up principles (see definition above). In a next step, the theorist cuts out all superfluous elements. A straightforward formula remains that predicts a multitude of events with as few assumptions as possible. Hence, when comparing two theories that both explain the same set of empirical observations, the theory with fewer assumptions is superior in terms of parsimony.

The Strength Model is very parsimonious as it originally made only two central assumptions (domain generality and limited resource). Many (social) psychological theories make many more than just two central assumptions (e.g., Social Identity Theory, Scheepers & Ellemers, Chap. 9; Social Learning Theory, Bandura, 1977; General Aggression Model, Bushman & Anderson, 2002). Excessive parsimony comes with the downside that it may impair consistency—thus eventually requiring conceptual additions to a theory. Future research will reveal if failures to detect the ego depletion effect can be accounted for by such boundary conditions (moderators) and auxiliary assumptions—at the cost of parsimony. (Alternatively, failures to find ego depletion effects may also be due to problems discussed later in the section "Empirical perspective").

Generality

Generality refers to a theory's quality to apply to various fields, situations, or domains of behavior. Although theoretical parsimony is an asset of a theory, explanatory breadth is as well.

The Strength Model fares very well concerning this criterion: The proposed explanatory breadth of the model is unusually large. A wide array of behaviors in almost all spheres of life require self-control and may—if the theory is right—evoke ego depletion effects. Likewise, according to the Strength Model, exerting self-control may have an impact on a multitude of behaviors in a variety of areas, all of which therefore should be susceptible to ego depletion effects.

Falsifiability

No matter how much empirical evidence has been gathered that is consistent with a theory, the theory can never be inductively "proven" to be true—it is always possible that one day an observation inconsistent with the theory emerges (Popper, 1959). All the more important, a theory has to be falsifiable. If a theory is formulated in a way that makes it impossible to observe something that is prohibited by the theory's assumptions, it is unfalsifiable and therefore not a good

[1] Some earlier studies had suggested that blood glucose levels may be this underlying limited resource, but this idea has been dismissed on both logical, physiological, and empirical grounds (Dang, 2016; Kurzban, 2010; Vadillo, Gold, & Osman, 2016; but see Ampel, Muraven, & McNay, 2018, for a different perspective).

theory (e.g., the claim "the exertion of self-control subsequently leads to better, poorer or unchanged self-control performance" would make the theory unfalsifiable). It is, of course, possible to define already mentioned auxiliary assumptions or boundary conditions to explain observations that initially appear inconsistent with the theory. However, every inconsistent observation must not lead to the development of a new auxiliary assumption specifying a new exception. Especially if there are more exceptions to the theory than standard cases, a theory becomes unfalsifiable (see also criterion of Parsimony).

The Strength Model states that the exertion of self-control impairs self-control performance. This claim would be falsified, if the exertion of self-control was consistently found to *boost* rather than to impair performance. Savani and Job (2017) found such a reverse ego depletion effect in several studies. Importantly, however, participants in these samples came from India growing up with the cultural belief that exerting self-control is *beneficial* for future self-control exertion. Adding "cultural belief" (or beliefs about the [non-]limitedness of self-control more generally) as a boundary condition incorporates these results into the larger theory.

Some other assumptions of the Strength Model, however, seem difficult to falsify. On the behavioral level, the prediction that exerting self-control impairs subsequent self-control performance is difficult to falsify because due to the imprecision of the self-control definition, it is unclear what constitutes a valid self-control manipulation and a valid dependent variable. Failures to replicate an effect can easily be dismissed by doubting the validity or the strength of the independent or dependent variables (see section on Operationalization and Manipulation Checks below). On the process level, the nature of the purported resource is unspecified, as mentioned earlier. Its existence can therefore not be falsified.

Progress

Good theories inspire new research, lead to discoveries that make contributions beyond the previously known, and promote theoretical progress through refinements, sharpening, and the inspiration and development of (new) theories.

The Strength Model has successfully spurred progress. Hundreds of studies have been conducted and endorsed the existence of the ego depletion effect (Hirt, Clarkson, & Jia, 2016). The model has been applied to many different spheres of psychology including consumer behavior (Friese, Hofmann, & Wänke, 2008; Vohs & Faber, 2007), neuroscience (Heatherton & Wagner, 2011; Luethi et al., 2016), decision-making (Pocheptsova, Amir, Dhar, & Baumeister, 2009), and work and organizations (Christian & Ellis, 2011), to name a few. The model also inspired the development of new theories explaining the ego depletion effect differently (e.g., Central Governor Model: Evans et al., 2015; Process Model: Inzlicht et al., 2014) and more general theories of self-control integrating ego depletion as a central component (e.g., De Witt Huberts et al., 2014; Kotabe & Hofmann, 2015). Furthermore, methodological discussions triggered by doubts about the robustness of the ego depletion effect led to advances in domains such as research on publication bias (Inzlicht, Gervais, & Berkman, 2015). In sum, the Strength Model was extraordinarily successful in stimulating both empirical work and theory across different fields in psychology and beyond. (Obviously, in and of itself this does not make a theory any more or less true.)

Interim Summary

In the first part of this chapter, we introduced the Strength Model of Self-Control with its two main assumptions: domain generality and limited resource. We discussed the sequential task paradigm and introduced two levels of analysis: the behavioral level and the process level. We proceeded with a selection of criteria to evaluate the quality of theories and applied these to the Strength Model. In the following section of the chapter, we turn to the examination of the quality of empirical research that has been conducted to test a theory, again using the Strength Model as an illustrative example.

Box 1.2 Questions for Elaboration

1. Think of a social psychological theory you know, and try to evaluate it along the criteria presented in this part of the chapter. In what respects is the theory you chose a good theory? Where is room for improvement? Discuss.
2. If you were to rank the discussed criteria, which of these would you see as the more relevant indicators for a high-quality theory? Are some of these criteria mutually exclusive?

Empirical Perspective: Criteria to Evaluate Research on a Theory

We now take a look at a selection of criteria that help to judge the quality of empirical research that has been conducted on a theory. Admittedly, these criteria are inspired specifically by discussions about the Strength Model. They are therefore neither exhaustive nor representative for evaluating empirical work in general. Nevertheless, several of these criteria can readily be applied to evaluating research on other theories as well. For a more in-depth discussion of empirical work on the ego depletion effect, see Friese et al. (in press).

Statistical Power

We start with the famous Jacob Cohen (1988, p. 1): "The power of a statistical test is the probability that it will yield statistically significant results [for an effect that truly exists]." To reliably detect an effect that truly exists, high statistical power is vital. Importantly, statistical power increases with larger effect sizes and with larger sample sizes (given the significance level for a type-I error is held constant). Thus, if statistical power is low, a study is less likely to detect a true effect. But—and maybe less intuitively—low statistical power also decreases the likelihood that a statistically significant finding reflects a true effect (Button et al., 2013; Christley, 2010). This so-called positive predictive value is lower for smaller effect sizes and for smaller sample sizes.

In the ego depletion literature, many studies have small sample sizes (Carter et al., 2015). Thus, in combination with a true effect which—by now—is assumed to be small in size, statistical power across the ego depletion literature is assumed to be worryingly low. When the average power in a literature is low, many studies are likely to produce nonsignificant findings even in the presence of a true effect. However, the vast majority of published ego depletion studies reveal significant effects (Carter et al., 2015). Together, these observations limit the possibility to draw firm conclusions concerning the Strength Model based on the currently available evidence (see also later section on *P*-Hacking and Publication Bias).

Operationalization and Manipulation Check

The process of defining an instrument to measure a phenomenon that is not directly observable is called operationalization—the resulting representations of the phenomenon are *operational definitions*. For instance, to measure the abstract concept of a person's intelligence (which is not directly observable), psychologists have developed many different intelligence tests that seek to measure and quantify the underlying construct. In principle, a phenomenon can have an unlimited number of operational definitions (Whitley, 2002). It is important to thoroughly develop these operational definitions because researchers draw inferences concerning the phenomena (i.e., hypothetical, latent constructs; e.g., intelligence) based on the measurement of observable, manifest variables (e.g., scores in an intelligence test). Only if this relationship between manifest variables and the phenomenon is trusted—if the operational definition fits the theory—can we draw conclusions concerning the hypothetical construct. Otherwise, if central constructs are not well operationalized, it is difficult to estimate the robustness of an effect.

Research on the Strength Model used a large variety of operational definitions concerning the measurement and the manipulation of self-control (see section on Generality above). The Strength Model itself does not explicitly suggest a certain set of operational definitions, partly due to its generality (see Theoretical Perspective). Hence, there is a large variety of ego depletion manipulations in terms of time and content: from very brief manipulations such as 20 incongruent (depletion condition) versus 20 congruent (control condition) Stroop trials (Yam, Chen, & Reynolds, 2014) to completing several demanding tasks in a row in the depletion condition, each lasting several minutes (Sjåstad & Baumeister, 2018; Vohs, Baumeister, & Schmeichel, 2012), and from resisting cookies versus radishes to crossing out certain letters in a text (Baumeister et al., 1998). The same is true for the dependent variables: A large variety of different tasks have been used as dependent variable, ranging from executive functioning tasks like the Stroop task (Inzlicht & Gutsell, 2007) to arithmetic calculations (Vohs et al., 2008) via tasks involving resisting temptations (Christiansen, Cole, & Field, 2012; Friese et al., 2008) to risk taking (Freeman & Muraven, 2010) and aggressive behavior (DeWall, Baumeister, Stillman, & Gailliot, 2007). Meta-analytic evidence suggests that these tasks share a common core, albeit a rather small one (Duckworth & Kern, 2011). Thus, the question is, if and to what extent these operational definitions can reliably and validly manipulate and measure the underlying construct that the Strength Model posits: self-control.

A related point concerns the use of manipulation checks. Manipulation checks are typically used to test whether an independent variable successfully manipulated the construct of interest. The majority of ego depletion studies did not make use of manipulation checks. In a first meta-analysis of 198 studies (Hagger et al., 2010), only 30% of those studies included a manipulation check asking for perceived difficulty of the first task. Out of these 30%, only about half (15.7% in total) asked for subjective effort, and only a little more than one in ten (12.6%) assessed fatigue after the first task. This is important to keep in mind: When researchers have little evidence whether and to what extent participants exerted self-control, the success of the manipulation may be in doubt. This, in turn, has implications for the falsifiability of the model: A failure to find an effect could be due to problems from the theoretical perspective (i.e., the model's assumptions may not be correct) or from the empirical perspective (i.e., the model is correct, but the unsuccessful manipulation of the relevant constructs did not allow for a proper test). In the latter case, it may be premature to dismiss a theoretical model, even in light of nonsignificant findings.

p-Hacking and Publication Bias

In recent years, several issues have been debated that may contribute to less-than-desirable replicability and robustness of psychological science (e.g., Munafò et al., 2017). Two sources of bias in particular have received widespread attention: *p*-hacking and publication bias.

p-hacking refers to researchers engaging in questionable research practices to make originally nonsignificant analyses statistically significant. A nonsignificant *p*-value is "hacked" to significance (see Fig. 1.2). Consequently, findings appear more robust than they actually are (Simmons, Nelson, & Simonsohn, 2011, 2018). Common *p*-hacks include reporting only dependent variables that "worked" while omitting others, including or excluding outliers depending on which analyses reveal the more desirable outcome, peeking at the data during data collection and stopping when the desired pattern of results emerges without controlling for the increased Type-I error rate (α error, probability of rejecting the null hypothesis when it is in fact true), or including covariates without a predefined theoretical rationale. Some of these *p*-hacks are especially "efficient" in changing results in small samples.[2]

The most tangible consequence of *p*-hacking is an increase of significant findings that would not

[2]See http://shinyapps.org/apps/p-hacker/ for a vivid demonstration (Schönbrodt, 2015).

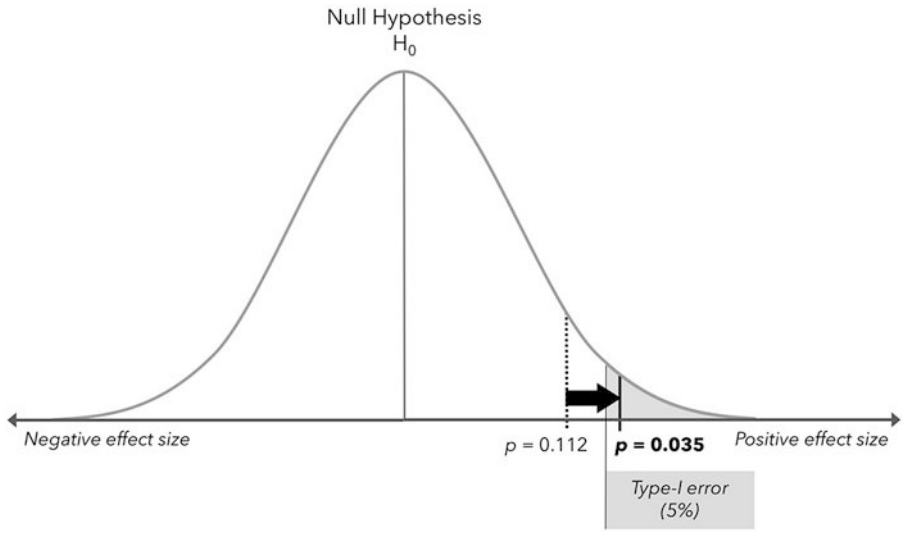

Fig. 1.2 An illustrative example of p-hacking and its consequences. A nonsignificant effect with $p = 0.112$ (dotted line) is *p*-hacked (black arrow) below the common 0.05 significance threshold to $p = 0.035$ (continuous line). As a consequence, the size of the effect increases. However, the main objective in *p*-hacking is to obtain a significant result, not to increase the effect size

have been significant without *p*-hacking. An original *p*-value may be nonsignificant while showing a (nonsignificant) tendency in the expected direction. After *p*-hacking, the effect size is artificially inflated, and the finding is significant. These false-positive findings due to *p*-hacking suggest the presence of a true effect that in fact may not exist or may be smaller than suggested. One important consequence of *p*-hacking is that it may lead to an inflation of significant findings in a given literature that may contribute to convictions about the existence of a phenomenon that in fact may be much less reliable than it appears. Another important consequence of *p*-hacking is that it may lead to an overestimation of the effect size for a given phenomenon that may in fact be much smaller than it appears.

The pervasiveness and severity of *p*-hacking is unknown and estimates vary widely (Fiedler & Schwarz, 2016; Hartgerink, 2017; Head, Holman, Lanfear, Kahn, & Jennions, 2015; John, Loewenstein, & Prelec, 2012). It seems safe to say that *p*-hacking has played a role in the ego depletion literature (Wolff, Baumann, & Englert, 2018), as it has in many other psychological literatures. *P*-hacking will have contributed to the overestimation of meta-analytic effect size estimates in ego depletion research, although it is unclear to what extent this is the case (Friese et al., in press). In addition, *p*-hacking likely has produced a number of published findings that would not have been significant without *p*-hacking (and therefore less likely to be published).

Publication Bias Publication bias refers to the observation that studies with statistically significant results are more likely to be published than nonsignificant studies (Bakker, van Dijk, & Wicherts, 2012). The most tangible consequence of publication bias is the overestimation of meta-analytic effect size estimates, because the number of published studies (with often larger effect sizes; see above) is not adequately corrected downward by existing, but unavailable nonsignificant studies with *smaller* effect sizes. Thus, publication bias can lead to a distorted perception of the magnitude and robustness of research literatures.

Estimating the severity of publication bias is difficult, but some analysts suggest that it is generally high in the social sciences including psychology (Fanelli, 2010; Fanelli, Costas, & Ioannidis, 2017) and also for ego depletion research in particular (Carter et al., 2015; Carter & McCullough, 2014). This is troublesome,

because common techniques to correct for the influence of publication bias work poorly under conditions typical for psychological science (e.g., heterogeneity in effect sizes; Carter, Schönbrodt, Gervais, & Hilgard, 2017).

Taken together, *p*-hacking (particularly) increases the rates of false positives, while publication bias (particularly) increases meta-analytic effect size estimates. Based on the preponderance of statistically significant findings despite low power, it is plausible to assume that both *p*-hacking and publication bias have contributed markedly to ego depletion research. Together, they convey the impression of a more robust and replicable literature with larger effect sizes than is warranted. How severe exactly their influence is, is unfortunately impossible to determine. Studies using open science practices such as preregistration (Nosek, Ebersole, DeHaven, & Mellor, 2018; van 't Veer & Giner-Sorolla, 2016), open materials, and open data are less prone to the deleterious effects of *p*-hacking and publication bias (Munafò et al., 2017). It should therefore become a habit for researchers to preregister their predictions on an openly accessible online forum, where they can also share their experimental materials, original data, and analysis scripts. Future work (not only on ego depletion) should embrace open science practices.

Moderation and Mediation

Moderators can reveal important boundary conditions of effects proposed by a theory (see first part of this chapter). They can elucidate the breadth of a phenomenon, reveal new differentiations, and explore limits of a theory.

More than 100 studies have investigated moderators of the ego depletion effect (for an overview, see Loschelder & Friese, 2016). For example, incentives to perform well in a second self-control task can counteract ego depletion effects (Luethi et al., 2016, see Fig. 1.3a; Muraven & Slessareva, 2003), and people who believe that their willpower is non-limited may

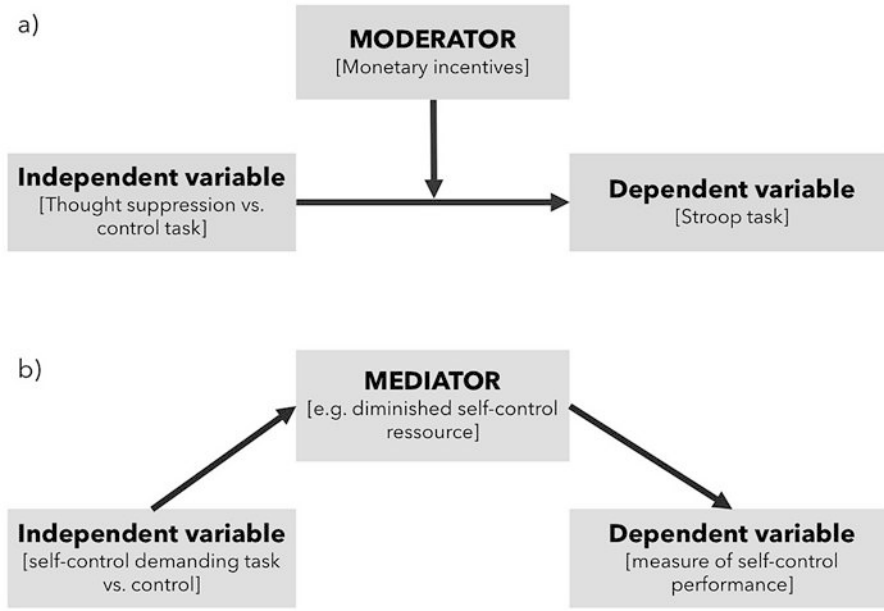

Fig. 1.3 (**a**) Moderation: The relationship between independent and dependent variable is influenced by a third variable, the moderator. Luethi et al. (2016), for example, found that the effect of the self-control manipulation on the performance in a Stroop task depended on whether participants could earn additional money depending on their performance in the Stroop task or not. (**b**) Mediation: The relationship between independent and dependent variable—the underlying process—can (partly) be explained by a third variable, the mediator. The Strength Model, for instance, assumes that the diminution of the self-control resource explains why after exerting self-control in a first task, people's self-control performance is impaired in a second self-control demanding task

be less likely to show ego depletion effects (Job et al., 2010; Bernecker & Job, Chap. 12). One may suspect that moderator studies (that are often investigated in 2 × 2 experimental designs) are more difficult to *p*-hack than two-condition studies and may therefore provide more robust results. However, this assumption is unlikely given that only one experimental condition would need to be *p*-hacked for a moderation pattern (Friese et al., in press). In addition, moderator studies in the ego depletion literature predominantly report significant findings, but had low statistical power, suggesting the presence of *p*-hacking and/or publication bias.

Mediation studies are used to test assumptions about the underlying process of a phenomenon (see process level of analysis, De Houwer, 2011). Mediators can therefore—in principle—distinguish between different theoretical explanations of the same observations. Mediators can be measured or manipulated (e.g., Hayes, 2013; Spencer, Zanna, & Fong, 2005). When a proposed mediator is measured, the data pattern necessary to obtain significant mediation is more complex than a mean difference between two conditions. Mediator studies may thus—again, in principle—be less likely to produce false positives and instead provide more robust evidence for a phenomenon.

While providing process evidence for the Strength Model (i.e., diminished self-control resource; Fig. 1.3b) is impossible because the assumed resource is unspecified and thus nonassessable, some researchers examined other mediators not specified by the Strength Model (e.g., Chow, Hui, & Lau, 2015; Graham, Martin Ginis, & Bray, 2017; Inzlicht & Gutsell, 2007). Considering the size of the ego depletion literature, mediator studies are rare. They commonly have low statistical power, too. Importantly, since hardly any studies on ego depletion were preregistered, it is impossible to know how many mediator studies were conducted but not reported at all or in a different manner because the mediation results did not turn out as expected. The existing evidence in the ego depletion literature is therefore limited. More generally, we believe that preregistered and theoretically grounded mediator studies are capable of providing stronger evidence for a theory as they examine an assumed mechanism on the process level in addition to the behavioral effect.

Meta-Analyses

Meta-analyses are a powerful tool to combine the results of multiple relevant studies in a research field (Borenstein, Hedges, Higgins, & Rothstein, 2011). They shift the focus from individual studies to the broader picture. Some strengths of meta-analyses are the higher statistical power to show even small effect sizes and the ability to examine moderators across studies that are unfeasible to investigate in individual studies. Despite their many benefits, meta-analyses have drawbacks. An important one is that the quality of a meta-analysis crucially depends on the quality of the primary studies (Egger, Smith, & Sterne, 2001; Ioannidis & Lau, 1998). If a field features many poorly conducted studies, a meta-analysis will unlikely level out the biases of primary studies (e.g., *p*-hacking; see also Munafò et al., 2017)—particularly, if these biases are systematic rather than unsystematic (Borenstein et al., 2011). As mentioned earlier, publication bias can also distort meta-analytic effect size estimates. The possibilities to reliably correct for publication bias are limited (Carter et al., 2017). Nevertheless, meta-analyses currently are the most potent way to quantitatively summarize large sets of studies (Gurevitch, Koricheva, Nakagawa, & Stewart, 2018).

For the ego depletion literature, a first meta-analysis of published studies indicated a healthy mean effect size of $d = 0.62$ (Hagger et al., 2010). However, a reanalysis of the same dataset found evidence for publication bias (Carter & McCullough, 2014). A second meta-analysis found an uncorrected smaller, but still substantial effect of $g = 0.43$ (Carter et al., 2015). After applying different techniques to correct for the influence of publication bias (that all have some shortcomings), Carter and colleagues concluded that there is "very little evidence that the ego depletion effect is a real phenomenon" (Carter et al., 2015, p. 796).

Some researchers saw this meta-analysis by Carter et al. (2015) as the first nail in the coffin of ego depletion research. Others pointed out various problems of the meta-analysis, the bias correction methods, and questioned its conclusions (Cunningham & Baumeister, 2016; Inzlicht et al., 2015). In the meantime, further meta-analyses appeared with varying results that are difficult to interpret due to methodological issues (Blázquez, Botella, & Suero, 2017; Dang, Liu, Liu, & Mao, 2017; see Friese et al., in press). Overall, the inconvenient truth is that ego depletion meta-analyses served as a great tool to promote discussion and progress, but they did not provide unequivocal evidence for (or against) the ego depletion effect.

Registered Replication Reports

Registered Replication Reports (RRR) are "multi-lab, high-quality replications of important experiments in psychological science along with comments by the authors of the original studies" (Association for Psychological Science, 2018). A detailed description of the study, the hypotheses, and the analysis plan is implemented by several laboratories, and the results are published independent of the results. An RRR has thus great statistical power to test a central prediction of a theory. A limitation of RRRs is that they are (usually) restricted to replicating one specific, often prototypical operationalization in a research field (a selected "landmark study"). The ability of RRRs to speak to the validity of whole theories is therefore necessarily limited.

An ego depletion RRR (Hagger et al., 2016) sought to replicate one selected combination of manipulation and dependent variable (Sripada, Kessler, & Jonides, 2014). As we have seen in the first part of the chapter, a salient characteristic of the Strength Model is its domain generality assumption. Thus, the ability of this (or any other) specific IV-DV combination alone to disprove the general ego depletion idea is limited. That being said, the RRR delivered a null effect on average. Although there was discussion about some methodological issues of the RRR (Arber et al., 2017; Baumeister & Vohs, 2016), this finding posed another serious threat to ego depletion research.

Discussion

In this chapter, we discussed criteria to evaluate the quality of theories and the empirical research examining these theories. Instead of reiterating our conclusions, we wish to briefly reflect about (1) the choice to abandon theories, (2) the two levels of analysis in general, and (3) the Strength Model in particular.

A psychological theory is of inferential nature—it makes probabilistic, imperfect predictions of the future—and, as such, can never be *proven* to be true. The process of developing a psychological theory is hence never completed. It is an ongoing journey of testing, refinement, development, falsification, and sometimes rejection. As we tried to show in this chapter, it is important to distinguish between the theoretical perspective and the empirical perspective when working with theories. Failures to replicate an effect (or find it in the first place) can be due to different causes: the theory could be wrong and the original result was a false positive. Similarly, however, the theory could have merit, but the empirical research was not good enough to adequately test it. In this case, one should take a close look at the complete process of putting the theoretical prediction to a practical test. Did the theory make plausible assumptions? Were operationalizations adequate? Such discussion may lead to important insights and sensible further steps for a research field. It may be more promising than a (possibly) premature decision to abandon a theory altogether. From the theoretical perspective, theories may be true after all, even if some empirical tests did not deliver the expected results.

When discussing both the criteria to evaluate the quality of theories and its accompanying empirical research, the Strength Model fared better on some criteria than on others. Here, we wish

to stress that we chose the Strength Model as an illustrative example—not because we sought to promote or undermine this model—but because it has received considerable attention in the last decades (and we happen to have gained some knowledge on it). In addition, many of the doubts and criticisms that we discussed with respect to the Strength Model are not unique to this model; they generalize to several other literatures in social psychology and beyond. The discussion about the scientific implications of these observations for (social) psychology more generally goes past the scope of this chapter.

Summary

- Theories can be discussed from different perspectives: the theoretical perspective (Does a theory meet general requirements for a good theory?) and the empirical perspective (How empirically proven is a theory?).
- A good theory in the theoretical sense is (1) consistent with empirical observations; is (2) precise, (3) parsimonious, (4) explanatorily broad, and (5) falsifiable; and (6) promotes scientific progress (among others; Table 1.1).
- To convincingly support a theory's assumptions, empirical research has to be high in statistical power, well operationalized, and (largely) free of *p*-hacking and publication bias. Meta-analyses and Registered Replication Reports are useful tools to estimate effect sizes, examine moderators, and test central predictions with high statistical power.
- The Strength Model of Self-Control explains self-control failure after the initial exertion of self-control with a domain-general, limited resource. Concerning the criteria for a good theory and well-conducted empirical research, the Strength Model has both favorable and less favorable properties.

Recommended Reading

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Mindset Theory of Action Phases and If-Then Planning

2

Lucas Keller, Maik Bieleke, and Peter M. Gollwitzer

Contents

Introduction

When the then Roman general Julius Caesar made the decision to cross the Rubicon with his army, he knew that this marked a point of no return. He supposedly uttered that "the die has been cast" as he could foresee the dramatic consequences – treason and the beginning of a civil war. However, when Heckhausen and Gollwitzer (1987) described the transition from a **motivational** (*why* does an individual do X?) to a **volitional** state (*how* does an individual do X?) in goal pursuit, they chose to refer to it as crossing the Rubicon nonetheless. Why did they choose these drastic words and how does making a decision compare to the metaphorical point of no return?

In the research leading up to the formulation and the various extensions of Mindset theory of Action Phases (MAP; Gollwitzer, 1990, 2012; Gollwitzer & Keller, 2016; cf. Bernecker & Job, Chap. 12), researchers observed differences in thought content and focus before and after a decision. More specifically, one group of individuals deliberated about which of their many desires to turn into a binding goal or the pros and cons of one particular decision (e.g., whether or not they should choose psychology as their major). Another group of individuals already made the decision in favor of one goal and now planned the necessary steps to go forward (e.g., choosing the

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important and necessary courses, ordering expensive textbooks online). Whether the decision in favor of one goal had been made subsequently determined whether individuals partook in a relatively open-minded deliberation of pros and cons of the goal in question *or* a relatively closed-minded listing of pros in favor of the chosen goal (e.g., Nenkov & Gollwitzer, 2012; Taylor & Gollwitzer, 1995).

From its early days, MAP has been a theory of successful goal pursuit. It marks important transitions, predicts cognitive shifts of goal-striving individuals, and explains when individuals commit to a goal. However, not all chosen goals are attained. In a meta-analysis of meta-analyses assessing this truism, Sheeran (2002) found a positive correlation between intentions and behavior that accounts for 28% of variance in future behavior. However, the remaining unexplained variance, the so-called intention-behavior gap, remains large. A self-regulation strategy to bridge this gap is the use of implementation intentions (Gollwitzer, 1993, 1999, 2014). Implementation intentions are specific if-then plans that specify a critical situation (e.g., a suitable opportunity to act in accordance with a goal) and link it to a goal-directed response. Such plans have been shown to increase goal attainment rates (Gollwitzer & Sheeran, 2006) even among individuals that usually suffer from impaired self-regulation (e.g., children with ADHD; Gawrilow & Gollwitzer, 2008).

The present chapter will span both MAP and the self-regulation strategy of using implementation intentions. We will first outline the four action phases according to MAP, focus on two of the most-researched action phases with their accompanying mindsets, highlight some recent applications, and will then move on to implementation intentions. We will describe research on why they promote the rate of goal attainment, which features they have, and to which action control problems they were applied to more recently. We will close by summarizing an exemplary field study, demonstrating how the concept of implementation intentions opens up new research questions and perspectives.

Definition Box

Going back to Ach (1935) and Lewin (1926), we propose the following distinction:

Motivation: The process of goal setting and evaluation. The focus lies on the desirability and feasibility of potential goals, influenced by the needs and motives of the goal-striving individual. Research on motivation answers the question of *why* people act, in which direction and with which intensity.

Volition: The will-based process of goal striving. The focus lies on the actual goal-directed behavior but also on planning steps that are necessary to be able to show goal-directed responses in the first place. Research on volition answers the question of *how* people act to reach their goals, given the opportunities and the obstacles they are facing.

MAP

In the course of goal pursuit, people face various challenges but have limited capacities. Accordingly, they have to decide which of their desires are worthy to pursue and allocate resources like time or physical and mental effort to the chosen goal. People then have to initiate and maintain goal striving without becoming distracted by temptations or frustrated by obstacles and, finally yet importantly, evaluate whether they have reached their goal or whether further action is necessary. MAP proposes that each of these challenges arises in a specific phase in goal pursuit (see Fig. 2.1), and overcoming them is facilitated by the activation of a set of phase-typical cognitive procedures (i.e., the mindset). Whereas goal setting and evaluation are located in the motivational phases of the model, planning and action initiation are located in the volitional phases.

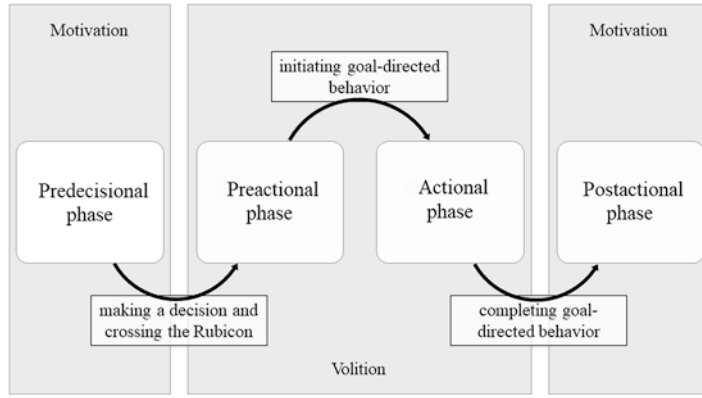

Fig. 2.1 The succession of action phases as proposed by MAP

In the *predecisional phase*, people have to deliberate whether it is worthwhile to pursue a given goal. They weigh the desirability (i.e., how valuable it is to succeed) and the feasibility (i.e., how likely it is to succeed) of the competing options. Ultimately, individuals should choose a goal with high desirability and feasibility. To arrive at such choices, people have to remain open-minded, have to be realistic about their chance of success, and have to judge the potential goals in relation to each other.

When individuals make a decision, however, they cross the metaphorical Rubicon and cognitive styles change during the transition to the *preactional phase*. People now face the challenge to plan the implementation of their goal and exhibit an increased focus on feasibility-related information (Kille, 2015). For challenging goals, it is now best to lay out and plan against what obstacles have to be overcome or may arise during goal pursuit, energized by positively biased judgments of control (Gollwitzer & Kinney, 1989) and expectations of goal fulfillment (Puca, 2001; see also mental contrasting; Oettingen, 2012). For easy goals, this phase may be comparatively short, as extensive planning would constitute a waste of time and other resources (Gollwitzer & Brandstätter, 1997).

Once plans have been laid out and suitable opportunities to act arise, individuals eventually enter the *actional phase* where the actual goal-directed behavior takes place. A focus on means and persistence as well as shielding one's goal from temptations or other, potentially conflicting, goals (e.g., a dieting goal may conflict with a goal to befriend another person if this person invites you over to a BBQ; Shah, Friedman, & Kruglanski, 2002) helps people to stay on track. If everything goes according to plan, the goal-directed action will bring the goal-striving individual closer to goal attainment. However, researchers have laid bare situations in which this is not the case. A lack of focus or early setbacks can, for instance, lead to the emergence of an action crisis (Brandstätter, Herrmann, & Schüler, 2013; see also recommended reading), a motivational phenomenon in the volitional phase: once the going gets tough, individuals may experience their struggle as futile and will, over time, disengage from further goal-directed action. They reflect on the desirability of the set goal or its feasibility anew (Ghassemi, Bernecker, Herrmann, & Brandstätter, 2017). For instance, Brandstätter and Schüler (2013) observed that an action crisis leads to less focus on implementation-related information but a greater concern regarding the costs of continuing versus disengaging, as well as the benefits of disengaging.

Lastly, when the goal-directed behavior ends, individuals have to evaluate whether their desired end state has been reached (i.e., whether the goal has been attained). Further action may be necessary, or goal striving was futile and further action would simply be a waste of resources. In this *postactional phase*, a switch back to a focus on relatively open-minded desirability or value evaluations is expected to occur (Kille, 2015). For instance, a longitudinal study on exercising

behavior (Kwan, Bryan, & Sheeran, 2018) demonstrated the importance of postactional evaluations (e.g., "did I exercise as planned?," "how did exercising feel," "how do I feel about myself after exercising") predicting subsequent intentions and behavior: positive postactional evaluations were associated with setting higher exercise goals for the following week, which in turn was related to actual levels of participants' subsequent exercise behavior.

Box 2.1 Question for Elaboration

When you try to think about your past goals and goal strivings, which aspects may be missing in the model?

Mindsets

In each of the action phases, a set of certain cognitive procedures is activated. These so-called mindsets help to overcome the challenges at hand. However, in contrast to a mere task set, which is the intentional attuning in order to master a given task (Gollwitzer, 1990, 1991), these mindsets also evince a moment of inertia as they have been shown to carry over to subsequent tasks unrelated to the goal that originally evoked them. In this conceptualization, phenomena related to specific action phases can be studied by investigating the effects of their accompanying mindsets on other, unrelated tasks that offer insights in the cognitive functioning of individuals.

Successfully weighing the desirability and feasibility of different goal options necessitates open-minded and impartial information processing. Accordingly, participants in a deliberative mindset have been shown to evince a broader span of visual attention (Büttner et al., 2014), are more likely to process incidentally presented information (Fujita, Gollwitzer, & Oettingen, 2007), and tend to give pros and cons equal weight (Bayer & Gollwitzer, 2005). Moreover, persuasive messages that stress abstract, future outcomes seem to be more effective in this mindset (Nenkov, 2012). Participants in a deliberative mindset are furthermore less affected by the optimistic bias, that is, the tendency to see oneself as being less exposed to future negative life events than the average other (Keller & Gollwitzer, 2017; Taylor & Gollwitzer, 1995) but seem more tuned to assessing expected utilities in decision-making (Rahn, Jaudas, & Achtziger, 2016a).

In contrast, planning the implementation of a set goal would suffer from an ongoing reevaluation of the desirability and the feasibility of the steps the individuals commit themselves to take. Participants in an implemental mindset thus evince optimistically biased judgments of their chance of success (Puca, 2001), exhibit stronger illusions of control (Gollwitzer & Kinney, 1989), and are more focused on details (i.e., evince a narrower span of visual attention; Büttner et al., 2014). Therefore, they are more persistent in the face of difficulty (Brandstätter & Frank, 2002) and complete a task sooner while simultaneously correctly predicting to do so (Brandstätter, Giesinger, Job, & Frank, 2015).

Applications and Developments

The inertia of mindsets can also be used to alter individuals' reactions to domains entirely unrelated to the decision problems that originally evoked them. In recent research, psychologists have used mindsets successfully to shield participants with low socioeconomic backgrounds from performance decreases due to stereotype threat (Dennehy, Ben-Zeev, & Tanigawa, 2014), to alleviate overconfident judgments among male participants (Hügelschäfer & Achtziger, 2014), or to alter risk-taking behavior (Keller & Gollwitzer, 2017; Rahn, Jaudas, & Achtziger, 2016b).

Even outside of psychology, mindset theory has been used to explain various phenomena. For instance, in their survey of 232 IT employees of Fortune 500 companies, Korzaan and Harris (2017) find that the presence of an implemental mindset coincided with overly optimistic judgments about the success of the implementation of an information systems project. Moreover, Delanoë-Gueguen and Fayolle (2018) applied MAP to entrepreneurial decision-making, more specifically to the early stages of start-up creation. They suggest that individuals in an early

motivational stage, before crossing the Rubicon, have different support needs than participants in a later volitional stage. Similarly, Jansen (2014) hypothesizes that shifting from a deliberative to an implemental mindset may contribute to a problem faced by medical researchers, which they term the therapeutic error: the discrepancy between unrealistically high expectations of treatment success and actual treatment success. Many factors are at work to produce these high expectations, be it misconceptions about medical research or a pervasive general optimistic bias. However, Jansen argues that in addition, participants of medical research who exhibit a therapeutic error are asked to make their judgments after they already consented to taking part in research (i.e., after the decision had been made). She thus concludes that heightened expectations may be caused by the predominant mindset and that it is important to include risk and benefit assessments of eligible persons in the predecisional phase as well to be able to assess misconceptions correctly.

Finally yet importantly, MAP has also been adapted by political scientists to describe and understand the path to armed conflicts (Johnson & Tierney, 2001). The authors observed that public confidence in winning typically increases right at the dawn of war although there is no new information available that would warrant such an increase. They account for this optimism by pointing to a switch in the mindsets of the political actors as well as the public; once the decision in favor of armed conflict has been made, the feasibility of this option is perceived to be higher than it (potentially) is.

Box 2.2 Question for Elaboration

In the wake of limited missile strikes commanded by US president Donald J. Trump to punish the Syrian government for their use of chemical weapons in April of 2017, Dominic Tierney (2017) wrote the following in *The Atlantic*:

Wars have a habit of evolving in unexpected ways due to a combination of psychology, domestic political pressures, and strategic interactions. Psychologists have found that the act of committing to a decision—like launching air strikes against Syria—can make decision-makers overconfident that they made the right choice. [. . . .] After Trump crossed the Rubicon, any doubts he had may have been replaced by confidence—the kind of mindset that could easily broaden the war. [. . . .] For Trump, the dice are in the air.

At what point of MAP would Tierney have located the US president? What are institutional safeguards to prevent such overconfidence?

Implementation Intentions

According to MAP, setting desirable and feasible goals is an important prerequisite for all of our actions. This assumption is hardly controversial and widely shared, as the yearly ritual of spelling out New Year's resolutions aptly demonstrates. Goals typically take the form of specifying wanted outcomes (e.g., *"I want to stay fit!"*) or behaviors (e.g., *"I want to do regular workouts!"*), and plenty of research attests to their important role for getting what one desires. Unfortunately, it is often not possible to immediately act upon and attain a goal – one might have to wait for good opportunities to act, deal with obstacles along the way, or act repeatedly over extended periods of time. The Rubicon model therefore comprises a planning phase in which people think about when, where, and how to perform goal-directed responses. As it turns out, however, planning does not come as naturally to people as setting goals, which might contribute to the notorious intention-behavior gap that frequently foils even the firmest resolutions. Attesting to this interpretation, research demonstrates that goal attainment is substantially improved when people are explicitly instructed to furnish their goals with plans (Gollwitzer & Sheeran, 2006). This observation lies at the core of *implementation intention theory* (Gollwitzer, 1993, 1999, 2014), which revolves around planning as a self-regulation strategy for goal attainment.

Definition Box

Goal intentions: Goal intentions specify a desired outcome or behavior (i.e., "I want to reach outcome O!" or "I want to perform behavior B!"). Their most important features are their desirability (how important it is to attain them) and their feasibility (how likely it is to attain them), which jointly determine the degree of goal commitment.

Implementation intentions: Implementation intentions are if-then plans specifying when, where, and how to act toward a goal (i.e., "If I encounter situation S, then I will perform goal-directed response R!"). They are subordinate to goal intentions and are assumed to facilitate their attainment by automating two processes: (1) the detection of critical situations and (2) the initiation of goal-directed responses.

Implementation intentions are if-then plans in which people link a critical situation to a goal-directed response: "*If* I encounter critical situation S, *then* I will perform goal-directed response R!" The situation in the if-part represents an opportunity to act or an obstacle to goal attainment, while the response in the then-part represents a (mode of) thought, feeling, or behavior that can be instigated to promote goal attainment. For instance, an implementation intention could facilitate the goal to stay fit by specifying when, where, and how to go for regular runs: "When I come home from the office on Fridays, then I will put on my running shoes and go for a run in the park!" Forming implementation intentions is a simple and yet highly effective self-regulation strategy. A meta-analysis involving 8461 participants in 94 independent studies (Gollwitzer & Sheeran, 2006) revealed a medium-to-large effect size of implementation intentions on the rate of goal attainment (d = 0.65) beyond the effect of holding a **goal intention** (d = 0.36; Webb & Sheeran, 2006). This suggests that forming implementation intentions helps people better attain their goals – but how can these effects be explained?

Box 2.3 Zooming In: How to Form Implementation Intentions

In the literature, several ways of forming implementation intentions can be distinguished. Research on the basic cognitive processes of goal striving usually provides ready-made plans tailored to the research hypothesis. For instance, an if-then plan like "If I see an apple, then I will immediately press the left mouse button!" could be used to test whether implementation intentions speed up behavior in a computerized categorization task. In more applied research settings, implementation intentions are often conveyed as a meta-cognitive strategy in which participants specify their own critical situations and goal-directed responses. This could involve the following four steps:

1. Commit yourself to a goal intention.
2. Specify a critical situation for attaining the goal.
3. Specify a goal-directed response that can be performed in this situation.
4. Link the critical situation and goal-directed response in an if-then format:

If _____(critical situation)_____, then _____(goal-directed response)_____!

As an alternative, participants are sometimes instructed to specify when, where, and how to act toward their goal without providing an if-then format. Moreover, implementation intentions can be combined with the self-regulation strategy of mental contrasting, in which people elaborate on their goals and on potential obstacles for attaining their goals (Oettingen & Gollwitzer, 2018). This combined mental contrasting with implementation intentions (MCII) strategy is commonly conveyed as a meta-cognitive strategy and available online (www.woopmylife.org).

Box 2.4 Question for Elaboration

Think about your past New Year's resolutions (or those of your friends). Were they specified as a goal intention? How could a corresponding implementation intention look like?

Cognitive Processes and Moderators

According to implementation intention theory, the beneficial effects of if-then planning on goal attainment can be attributed to two cognitive processes. First, specifying a critical situation in the if-part activates its mental representation and makes it cognitively more accessible. This makes the situation easier to remember, to detect, and to recognize in the environment. Second, linking the situation to a goal-directed response creates a strong mental association that allows people to initiate the specified response automatically as soon as the critical situation is encountered.

Plenty of research shows that these two processes – accessibility of the critical situation and automatic response initiation – indeed mediate the effects of implementation intentions on goal attainment (Parks-Stamm, Gollwitzer, & Oettingen, 2007; Webb & Sheeran, 2007). Consequently, implementation intentions are assumed to automate behavior, which makes it possible to shield one's goals even from hard-to-control antagonistic influences. For instance, a study by Gollwitzer, Sheeran, Trötschel, and Webb (2011) showed that implementation intentions alleviate automatic priming effects on behavior. Participants first read a fictitious scientific article about the genetic similarity between humans and a set of animals. Crucially, this set of animals consisted of fast animals (e.g., cheetah, hare; fast prime) for some participants but of slow animals (e.g., slug, tortoise; slow prime) for others. Subsequently, all participants performed a computerized word classification task in which they had to decide quickly whether a stimulus was a word or a non-word. They formed an implementation intention to respond quickly to a certain stimulus: "And if the non-word 'avenda' appears, then I respond especially quickly!" The authors found a priming effect in unplanned situations, such that participants were slower after having read about slow animals rather than fast animals (left panel of Fig. 2.2). In planned situations, however, participants were not susceptible to nonconsciously primed concepts of being slow or of being fast and always responded quickly (right panel of Fig. 2.2), as specified in the implementation intention.

To demonstrate that implementation intentions heighten the accessibility of planned situations, research has used paradigms in which

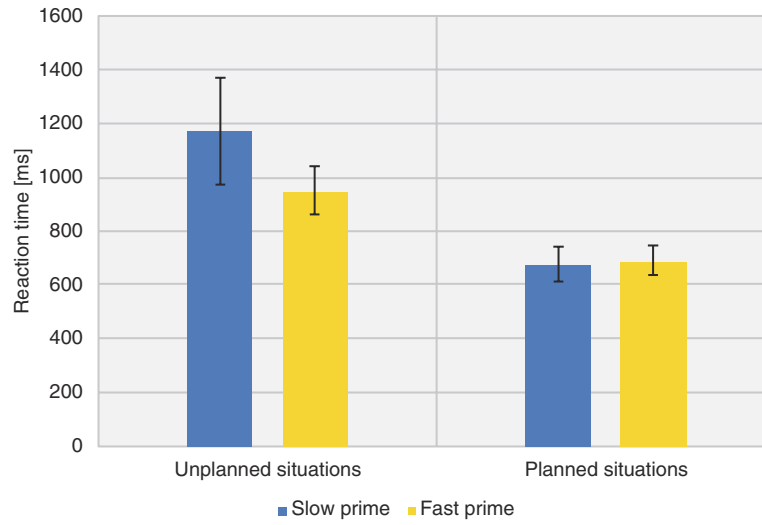

Fig. 2.2 Data from Experiment 1 of Gollwitzer et al. (2011). Error bars represent 95%-CIs

participants work on two allegedly unrelated tasks. In the first task, they form an if-then plan (e.g., "When I go to the cafeteria in the afternoon, then I will grab an apple!"). In a second task, it is then investigated whether situational cues just specified in the plan (e.g., cafeteria, afternoon) are now cognitively more accessible than neutral cues not specified in the plan. Indeed, it has been demonstrated that people with an implementation intention respond more quickly to planned than to neutral cues in a lexical decision task (Aarts, Dijksterhuis, & Midden, 1999; Webb & Sheeran, 2007), which suggests that the planned cues had heightened accessibility. Moreover, people find it difficult to *not* attend to planned cues, even when this conflicts with successful task performance (Wieber & Sassenberg, 2006). One example comes from a study using an auditory task (Achtziger, Bayer, & Gollwitzer, 2012), in which participants had to respond to acoustic information presented to one ear. The authors found that these responses were slower and more erroneous whenever information related to the planned situation was presented simultaneously to the other ear, as compared to neutral information. This failure to ignore plan-related information might be due to implementation intentions biasing even earliest perceptual processing toward this information (Janczyk, Dambacher, Bieleke, & Gollwitzer, 2015).

Regarding the goal-directed response, research has focused strongly on testing whether it can be initiated automatically after having formed an implementation intention (Bargh, 1994). Indeed, it has been shown that the goal-directed response is initiated immediately upon encountering the planned situation (Gollwitzer & Brandstätter, 1997; Orbell & Sheeran, 2000), even when cognitive resources are scarce (Brandstätter, Lengfelder, & Gollwitzer, 2001; Lengfelder & Gollwitzer, 2001), and in the absence of another conscious intent to act (Bayer, Achtziger, Gollwitzer, & Moskowitz, 2009; Schweiger Gallo, Pfau, & Gollwitzer, 2012; Sheeran, Webb, & Gollwitzer, 2005). For example, participants in one study (Bayer et al., 2009, Exp. 3) saw a series of nonsense syllables and had to either associate freely to them (low strain) or to repeat aloud and memorize them (high strain). In a concurrent go/no-go task, they were presented with numbers and letters and had to press a button in case of number but to refrain from pressing in case of a letter. The authors found that participants with an implementation intention to respond quickly to a certain number in the go/no-go task indeed responded faster to this number than to others irrespective of how straining the syllable task was. This suggests that implementation intentions made the goal-directed behavior efficient in the sense that it can be initiated even when cognitive resources are taxed.

Box 2.5 Question for Elaboration

Making if-then plans is sometimes said to create "instant habits" (e.g., Gollwitzer, 1999) Verplanken & Orbell, Chap. 5. Think about how research on the cognitive processes instigated by forming implementation intentions might have given rise to this metaphor.

In a nutshell, forming implementation intentions facilitates the detection of the situations specified in the if-then plan and automates the initiation of the goal-directed behavior. However, this does not mean that implementation intentions, once formed, will always be effective. First, the effectiveness of implementation intentions remains dependent on the underlying goal intention. For instance, participants who planned how to respond in a color-matching task ("If I see a card with the same color as the card at the top of the screen, then I will press the corresponding key as quickly as possible!") refrained from performing the goal-directed behavior as soon as doing so caused monetary losses and thus undermined the goal to respond quickly (Legrand, Bieleke, Gollwitzer, & Mignon, 2017). This suggests that implementation intentions are not effective when they do not serve a valued goal (Orbell, Hodgkins, & Sheeran, 1997; Sheeran et al., 2005). Research has investigated other determinants of the effectiveness of implementation intentions as well. As suggested by MAP,

for example, implementation intentions are most effective when people are in an implemental mindset rather than a deliberative mindset (Wieber, Sezer, & Gollwitzer, 2014).

Box 2.6 Zooming In: FAQ About Implementation Intentions

Does forming implementation intentions always improve goal attainment?

Implementation intentions require an active goal that people perceive to be both desirable and feasible and can thus not compensate for the colloquial "lack of motivation". In addition, implementation intentions will not enhance the attainment of easy goals, as mere goals already suffice.

Can forming implementation intentions have drawbacks?

Forming implementation intentions involves a delegation of control to specific situational cues. This may alleviate goal attainment when other situations are better-suited (missing opportunities to act) or the situation requires a different response (failure to control the planned response).

Is making multiple plans better than making only one plan?

Implementation intentions rely on an associative link between a situation and a response. This link can be weakened by making multiple plans for the same goal (e.g., linking different responses to one situation). This is less of an issue when making plans for independent goals.

Does every if-then statement qualify as an implementation intention?

Implementation intentions condition a response on a situation in an if-then format. For instance, a statement like "If I do regular workouts, then I will stay fit!" is grammatically possible as well as logically valid but would not constitute an implementation intention because it conditions an outcome on a behavior.

Are forming implementation intentions and the implemental mindset the same thing?

Whereas MAP constitutes a theory that combines motivation and volition, implementation intention theory describes a self-regulation strategy that can be used to achieve goals. Although often confused, implementation intentions are not confined to the preactional phase during which an implemental mindset is usually activated. For instance, implementation intentions like "If I have to make a decision, then I will deliberate thoroughly" can trigger a more open-minded way of processing information during the predecisional phase.

Application

Implementation intentions are a self-regulation strategy that should help people to attain their goals across various domains (see also Verplanken & Orbell, Chap. 5). In line with this assertion, accumulating research shows that implementation intentions enhance goal attainment in domains like healthy eating (Adriaanse, Vinkers, De Ridder, Hox, & De Wit, 2011), engaging in physical activity (Bélanger-Gravel, Godin, & Amireault, 2013), and reducing alcohol consumption (Cooke & Lowe, 2016). Moreover, implementation intentions are effective among people suffering from psychological disorders like dementia or depression (Toli, Webb, & Hardy, 2015), and they have been shown to facilitate cognitive processes that are important across domains, such as remembering to perform certain actions at a future point in time (Chen et al., 2015). These examples all pertain to applications in which implementation intentions have been studied comprehensively already and meta-analytic evidence for their beneficial effects is available (Gollwitzer, 2014).

Yet, there are still many other fields of application for which implementation intention effects have to be established. One example is the ability to endure physical performance over extended periods of time, a characteristic feature of various

work-related activities (e.g., in hospitals or factories) and prototypically required in many athletic activities (e.g., running, swimming, cycling). Given the beneficial effects of implementation intentions in many domains and for diverse populations, it is plausible that people can use them to deal with the various self-regulation demands encountered during endurance tasks, like dealing with muscle pain, feelings of exertion, fatigue, and urges to quit. In partial support of this reasoning, initial studies have shown that implementation intentions can indeed modulate endurance-related sensations (Bieleke & Wolff, 2017; Wolff et al., 2018) and may even enhance performance (Thürmer, Wieber, & Gollwitzer, 2017). However, implementation intentions failed to enhance performance in some endurance tasks and even had undesired effects on perceptions of effort and pain in one study (Bieleke & Wolff, 2017). This suggests that implementation intentions must be carefully tailored to different areas of applications and that their effectiveness in one domain cannot be simply deduced from their effectiveness in other domains (Wolff, Bieleke, & Schüler, 2019).

Example Study: Bridging the Intention-Behavior Gap: Inducing Implementation Intentions Through Persuasive Appeals (Fennis, Adriaanse, Stroebe, & Pol, 2011)

Implementation intentions have been used in a number of field studies. Among others, there have been field studies on the effect of implementation intentions on attendance of cervical cancer screenings (Sheeran & Orbell, 2000), fruit and vegetable intake (Chapman, Armitage, & Norman, 2009), or recycling behavior of employees (Holland, Aarts, & Langendam, 2006). In the following, we want to describe a field study testing the effect of implementation intentions in the domain of consumer psychology. Fennis et al. (2011) investigated whether the presentation of cue-response links on a web page can stimulate consumers to spontaneously form implementation intentions and consequently opt for sustainable food products. They instructed 217 participants (mean age = 24.5 years, SD = 7.6 years) to visit a web page advocating sustainable consumption and assigned participants to one of four different versions of this web page.

First, for one half of the participants (goal-intention condition), the web page described a fair-trade pocket guide showing ways to increase the sustainability of one's consumption. For the other half of the participants (goal-intention + implementation intention condition), the web page additionally listed critical situations in which one should exhibit the goal-directed behavior of checking the pocket guide. This was thought to prompt participants to construct if-then situation-response links. Second, the vividness of the information was manipulated within each condition. One half of participants (high-vividness condition) read the fictitious story of a female student who described how shocked she was upon learning about the unsustainable or unfair manufacturing process of some products (e.g., poor working conditions, damage to the environment). She decided to buy only sustainable products from now on and described how the use of the pocket guide will help her doing that. Furthermore, the critical situations to use the pocket guide were also described as stemming from her personal experience with using the guide. The other half of participants (low-vividness condition) received similar information, which was presented using bullet points and not a personal narration of a student they potentially identify with. The authors hypothesized that the more vivid the presentation of the information is, the more likely participants will be to adapt their behavior. Moreover, the more vivid and practical the cue-response links are, the more likely participants will form implementation intentions, which in turn will facilitate the attainment of the goal to consume sustainably.

One week after all participants received the pocket guide, the experimenters contacted the participants and asked them to register which food products they bought over the week. For this purpose, a list of 30 different categories and the leading brands per category was assembled and distributed. Participants then indicated which

brands they had bought per category. Results show that including the cue-response link in the description of the pocket guide increased purchases of sustainable products on average by one item. Vividness on its own was not a significant factor in predicting the amount of sustainable purchases. However, the interaction between both experimental conditions reached statistical significance. Follow-up analyses show that whereas information low in vividness was less likely to influence consumer behavior independent of whether it included implementation intention-like cue-response links or not, the inclusion of cue-response links in highly vivid information more than doubled the number of sustainable product purchases. To rule out the alternative explanation that participants in the goal intention + implementation intention condition merely bought more products in total and thus had more sustainable products in their shopping carts, the authors calculated a ratio of sustainable to regular products. Mirroring the results on the mere amount of sustainable choices, the ratio of sustainable to regular products bought by participants receiving information low in vividness was around 0.30 for both goal conditions. Participants who were in the goal intention + implementation intention condition, however, had a ratio of 0.58 meaning that for every two regular items, they bought one sustainable item.

Taken together, this field study shows that the self-regulation strategy of forming implementation intentions can increase goal attainment among participants who only read about someone else doing it.

Summary

- Goal pursuit can be described by the succession of a predecisional, preactional, actional, and postactional phase. The decision in favor of one goal marks the metaphorical Rubicon, the switch from a motivational to a volitional focus.
- In the predecisional phase, individuals in a deliberative mindset partake in open-minded weighing of pros and cons for the goal in question. In the preactional phase, individuals in an implemental mindset are planning the steps needed for goal attainment.
- Implementation intentions (i.e., specific if-then plans) are often superior to mere goal intentions concerning goal attainment.
- The formulation of a critical situation (e.g., a suitable opportunity to act or an obstacle to overcome) in the if-part raises the chance of successful recognition and thus counteracts missing opportunities.
- Combining a critical situation with a suitable goal-directed response in the then-part creates an efficient link for initiating action, requiring no further act of conscious intent.
- Both mindset and implementation intention effects have been demonstrated in many domains, including health, sports, risk, or (social) cognition.

Recommended Reading

Gollwitzer, P. M. (2012). Mindset theory of action phases. In P. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (pp. 526–545). London, UK: Sage Publications. https://doi.org/10.4135/9781446249215.n26

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Guiding Answers to Questions in the Chapter

1. Q (with Box 2.1): When you try to think about your past goals and goal strivings, which aspects may be missing in the model?

   A: As a vehicle for research, MAP has to weigh parsimony against explanatory power. Thus, to be able to generalize unto a wide array of goal pursuits, some other aspects may be missing. For instance, MAP is focused on the cognitive aspects of goal pursuit and is relatively mute on emotional aspects of goal pursuit. Furthermore, it is directional by nature, proposing a fixed order in which phases are surpassed which may not be the case for every goal pursuit in daily life.

2. Q (with Box 2.2): At what point of MAP would Tierney have located the US president? What are institutional safeguards to prevent such overconfidence?

   A: By saying that Trump has crossed the Rubicon, Tierney implicates that the US president switched from an open-minded predecisional action phase to later, more closed-minded action phases. A sincere renewed deliberation of arguments in favor and against further investment, for instance, by actors who take a watchtower perspective, may help to prevent such overconfidence. In addition, turnover in responsible decision-makers caused by term limits can lead to such redeliberating.

3. Q (with Box 2.4): Think about your past New Year's resolutions (or those of your friends). Were they specified as a goal intention? How could a corresponding implementation intention look like?

   A: A New Year's resolution that merely specifies a desired outcome or behavior is a goal intention. To create an implementation intention, one needs to specify when, where, and how to act toward this goal in an if-then plan.

4. Q (with Box 2.5): Making if-then plans is sometimes said to create "instant habits" (e.g., Gollwitzer, 1999). Think about how research on the cognitive processes instigated by forming implementation intentions might have given rise to this metaphor.

   A: The metaphor refers to the finding that if-then planning automates behavior, such that the planned behavior is initiated immediately and efficiently when the critical situation is encountered. This resembles habitual behavior with the exception that the situation-behavior link is established with a single voluntary act rather than learned over time (see also Verplanken & Orbell, Chap. 5).

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Beyond the Quantity of Motivation: Quality of Motivation in Self-Determination Theory

3

Guy Roth

Contents

Introduction

Have you ever been passionate about a theoretical approach you learned in class? When the class ended, you may have approached the professor to ask for clarifications, elaborations, and maybe additional reading materials. Later, during a coffee break, you discussed the ideas with your friends and were eager to go online to look for more information.

At the same time, I'm sure you remember other classes in which passion and eagerness could not describe your experience, but pressure and anxiety definitely could. You may have felt pressure to succeed because the course was mandatory in your program and you needed a certain grade. You found the material uninteresting and meaningless. The professor lectured monotonously and slowly, without distinguishing between the important and the unimportant. However, you did not dare to skip a single class because you wanted to make sure that you took all the necessary notes for the final exam. The course was a millstone around your neck, and you couldn't wait to put it behind you. You probably studied hard before the exam to make sure your grade was high enough.

You may also remember another class experience where after half an hour, you found yourself staring at the professor with no idea what she was talking about. You may have taken some

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notes but in an automatic manner without really paying attention; before the final exam, you might have read them but couldn't remember anything, questioning if you were the one who actually wrote this stuff. It does not mean that you necessarily felt incompetent in this class. The material was not beyond your ability to understand. You may even have felt it was quite simple, even trivial.

As a high achiever and to ensure good grades in the three classes, you may have invested equal effort before the final exams. So even though you felt quite competent in the three classes, and you made efforts to succeed, your experience as a learner was completely different: enthusiastic and eager in one class, stressed and anxious in the second, and bored and maybe even irritated in the third. Thus, the different experiences cannot be explained by different levels of ability or different levels of overall motivation (at least in relation to the final exam). It seems that in these aspects, the experiences are similar. However, they diverge in another important aspect, and that's the topic of this chapter.

Self-determination theory (SDT; Ryan & Deci, 2017) distinguishes between the amount (intensity) of motivation and its quality. The three common experiences described here differ in the quality of motivation but not necessarily the amount or intensity. The theory specifically distinguishes between two types of motivations differing in their quality: *autonomous motivation* and *controlled motivation*. When autonomously motivated, people perceive themselves as the "origin" of their own behavior, whereas in controlled motivation, they perceive themselves as "pawns" subject to other forces. Research in the last three decades has demonstrated that autonomous motivation has an advantage over controlled motivation in many respects, including better psychological health and better quality of behavior (e.g., flexible behavior versus rigidity).

The chapter begins by defining autonomous and controlled motivation and explaining their measurement. It turns to a discussion of the outcomes of the different types of motivation and describes a portion of the large body of research on each. The chapter concludes with a summary of research on human behavior in applied settings and a discussion of a field study in an educational context.

Types of Motivation

SDT researchers are interested in the types of motivations that drive behavior (Ryan & Deci, 2000). Such research often focuses on the distinction between intrinsically and extrinsically motivated behavior. In the former, people do something because it is inherently interesting or enjoyable; in the latter, they are looking for a reward of some kind or are trying to avoid punishment (Deci & Ryan, 1985). Yet, other types of motivations do play a role in explaining behavior (Deci & Ryan, 2000). Undoubtedly, much of what people do involves external pressure to act in a certain way, to believe specific ideas, and to hold specific values and opinions. SDT suggests that non-intrinsically motivated activities encouraged by others (such as parents, teachers, or employers) may allow different levels of perceived autonomy, reflecting the degree to which the values of the behavior have been internalized by the individual (Grolnick, Deci, & Ryan, 1997).

Advanced SDT conceptualizations of underlying motivations not only distinguish extrinsically and intrinsically motivated behaviors but also point to extrinsically motivated behaviors that vary in their relative autonomy level (Roth, Assor, Kanat-Maymon, & Kaplan, 2006; Ryan & Connell, 1989). These conceptualizations are reflected in the distinction between autonomous and controlled motivations. Autonomous motivation involves volition and choice and includes intrinsic motivation and well-internalized forms of extrinsic motivation. In contrast, behavior driven by controlled motivations involves an external or internal sense of compulsion and poorly internalized forms of extrinsic motivations (Grolnick et al., 1997; Roth, Assor, Niemiec, Ryan, & Deci, 2009).

Definition Box

Autonomous motivation: involves volition and choice and includes intrinsic motivation and well-internalized forms of extrinsic motivation.

Controlled motivation: involves an external or internal sense of compulsion and includes poorly internalized forms of extrinsic motivation.

Amotivation, Controlled Motivation, and Autonomous Motivation

Amotivation denotes an absence of motivation. For example, an individual may not value an activity, may not think it will lead to a desired result, or may not feel capable of performing it. One consequence of amotivation is resentment: one study found amotivated individuals resented those agents perceived as acting on them; as a result, they disengaged and performed poorly (Roth et al., 2009).

Controlled motivation denotes behavior performed under a sense of pressure or compulsion. The control can be either external or introjected. In external motivation, behavior is controlled by external reward and punishment, with little internalization. The behavior is maintained only in the presence of the controlling person (e.g., a parent, teacher, or employer). Introjected motivation is a superficial type of internalization. The individual takes in the externally expected behavior's value but does not really accept it as his or her own. Acting on a sense of inner compulsion, this individual imposes on himself/herself the same contingencies of approval that the controlling person had previously imposed. Put otherwise, their self-esteem is contingent on enacting specific behaviors. Thus, although motivation now lies within the individual, it continues to be controlled. For example, students with controlled motivation may make a considerable effort (large amounts of motivation) to enhance their self-esteem or to avoid embarrassment (introjection), or they may try to outperform other students because they wish to please the professor or to avoid sanctions (external motivation). Controlled motivation, reflected in feeling pressured to perform specific behaviors, can result in constricted and shallow behavioral functioning and performance, diminished well-being, and low-quality behavior (e.g., Grolnick & Ryan, 1989; Roth et al., 2009).

Autonomous motivation denotes behaviors performed with a sense of volition and choice. It can be divided into three subtypes: identified, integrated, or intrinsic. In identified motivation, an individual has already identified with a behavior's importance to him or her and performs the behavior autonomously. In integrated motivation, a behavior is deeply internalized and autonomous because it has been assimilated with other aspects of the self. In intrinsic motivation, an individual performs an activity because it is inherently interesting and internalization is not needed. Altogether, autonomous motivation characterizes individuals who invest efforts because they are interested, take pleasure, or find value in doing so.

It is possible to view the types of motivation as levels of internalization of behaviors and/or values, reflecting different stages on a continuum of autonomy. For example, we may agree that no child is born with the intrinsic motivation to brush his/her teeth twice a day. When the parent does it for him/her, the regulation is purely external. While the child grows and can do it effectively by himself/herself, the parent may explain the importance of brushing teeth for oral hygiene, allowing him/her to identify with the value of brushing his/her teeth consistently and effectively. Thus, thanks to the parental provision of a rationale, the child internalizes the importance of the behavior, and instead of external motivation, the behavior becomes motivated autonomously based on identification with its value for oral hygiene. Later in the chapter, I will discuss contextual support for autonomous motivation (e.g., the parents' provision of a rationale), but first I want to talk about how these different types of motivation (or levels of internalization) are measured.

Measurements and Outcomes of Autonomous and Controlled Motivation

Motivation has obvious application in a classroom situation, and, here, Ryan and Connell (1989) were innovators. By implementing deCharms's (1968) concept of the "perceived locus of causality," they assessed four of the five types of motivations discussed above (external, introjected, identified, and intrinsic) by asking students to indicate the reasons for their actions in academic achievement and also in prosocial behavior. External motivation referred to external authority, fear of punishment, or rule compliance as reasons for behavior; introjected motivation referred to internal, esteem-based pressures; identified motivation referred to the students' own values or goals; and intrinsic motivation referred to inherent interest and enjoyment[1] (see Table 3.1).

As they expected, when they tested the students, Ryan and Connell (1989) found a simplex-like pattern of correlations among the four types of motivations. The simplex concept comes from Guttman's (1968) Radex theory on the ordered relations of correlated variables, whereby the magnitude of the correlations among variables reflects their conceptual similarity. In this case, the largest correlations were between adjacent, conceptually similar motivation types (e.g., identified and intrinsic), and they tapered off as the types became conceptually more distant. Ryan and Connell also created a relative autonomy index (RAI), an overall indicator of autonomous motivation, by assigning positive weights to the two autonomous motivations (identified, intrinsic) and negative weights to the two controlled motivations (external, introjected). Since its development, their approach has been used extensively in various domains and cultures; the RAI index associates positively with diverse desirable outcomes and negatively with undesirable ones (Assor, Roth, & Deci, 2004; Pelletier, Dion, Slovinec-D'Angelo, & Reid, 2004; Roth et al., 2006).

Table 3.1 Measuring types of motivations: examples for achievement in class (Ryan & Connell, 1989)

"When I'm working on class work I do so because…"
External motivation
I'll get in trouble if I don't.
That's what I'm supposed to do.
Introjected motivation
I'll feel bad about myself if I don't.
I'll feel ashamed of myself if I don't.
Identified motivation
I want to understand the subject.
I think it's important to.
Intrinsic motivation
I enjoy it.
It's interesting for me.

[1]Integrated motivation is generally not examined using self-reports because it can be difficult to distinguish between identified and integrated motivations

Consequences of Autonomous and Controlled Motivation

Empirical research consistently shows that autonomous motivation predicts greater behavioral persistence in the absence of external controls, higher quality of performance, and better emotional experience and well-being than controlled motivation. Because autonomously motivated individuals value a behavior or find it interesting and/or enjoyable, they experience less internal conflict about performing it and are more dedicated to it (Ryan & Deci, 2017). In contrast, controlled motivation can involve internal conflict and a sense of internal compulsion (i.e., introjected motivation; Roth, 2008) or external conflict and a sense of external compulsion (i.e., external motivation) and is therefore related to rigid behavior, less persistence, and a sense of ill-being (Pelletier et al., 1995; Vansteenkiste et al., 2010).

Hence, consequences of the types of motivation have been noted in quite varied domains, including education, relationships, health care, psychotherapy, religion, aging, and sports (for a review, see Ryan & Deci, 2017). For explanatory purposes, I will provide a few examples.

Ryan and Connell (1989) found autonomous motivation was related to positive affect and a proactive coping style, greater empathy, more

mature moral reasoning, and more positive relatedness to others. In contrast, controlled motivation was related to negative affect and maladaptive coping, as well as anxiety magnification following failure, suggesting controlled motivation makes people vulnerable when they fail to perform the desired activity.

In a later study, Roth (2008) found controlled motivation was related to *ego-oriented prosocial helping* (a helping behavior enacted for the sake of others' approval and appreciation), whereas autonomous motivation was related to *other-oriented helping* (a helping behavior performed while focusing on the needs and inclinations of the other in need).

Evans and Bonneville-Roussy (2015) studied college students' motivation for music studies. Interestingly, but not surprisingly, autonomous motivation predicted more frequent practice, higher quality of practice, and greater preferences for challenging parts of music. Looking at high schoolers, Vansteenkiste et al. (2010) found autonomous motivation predicted more sophisticated informational processing, better distinction between the important and unimportant, better concentration (students' ability to direct and maintain their attention on academic tasks), and better time management strategies for academic tasks. It was negatively related to cheating attitudes and unrelated to test anxiety. Controlled motivation, however, was positively related to test anxiety and unrelated to the other outcome measures.

Aelterman et al. (2012) studied objective indicators of physical activity among secondary school students as a function of their types of motivation. Their multilevel analysis revealed that 37% and 63% of the variance in physical activity were explained by between-student and between-class differences, respectively. Thus, autonomous class motivation was positively related to between-class variation in physical activity.

Finally, in a study of health care, Halvari, Halvari, Bjørnebekk, and Deci (2012) found that autonomous motivation for dental home care predicted dental health behavior and oral health.

I could go on, but as the few studies mentioned here demonstrate, autonomous motivation is essential for adaptive functioning and well-being (for a review, see Ryan & Deci, 2017; or go online to selfdetermination.org). Therefore, it seems important to explore its antecedents. Over the last three decades, researchers have developed a vast theoretical and practical knowledge of factors supporting and frustrating autonomous motivation.

Antecedents of Autonomous and Controlled Motivations

Can social conditions facilitate (or inhibit) autonomous motivation? SDT postulates that humans have an inherent and deeply evolved propensity to explore, assimilate knowledge, and develop new skills. They strive to integrate these new experiences into a harmonious sense of self (Deci & Ryan, 2000). But SDT also recognizes that the tendency to be actively involved does not happen automatically; in fact, some individuals become passive or counterproductive (Ryan & Deci, 2000). SDT suggests these natural propensities can be supported or undermined by contextual factors, including a person's immediate situation and developmental history, making the social context a key factor in growth, integration, and mental health (Ryan & Deci, 2000; Van Den Broeck, Vansteenkiste, & De Witte, 2008). Specifically, SDT posits that autonomous motivation is facilitated by the satisfaction of three primary psychological needs: competence, relatedness, and autonomy (Deci & Ryan, 2000; Ryan, 1995). Several psychological approaches use the concept of needs but do it very differently. Therefore, before I move on to the definition of each of these three specific needs and the contextual factors that may support or frustrate them in the next section, I first briefly touch on some unique aspects of SDT's definition of needs.

Two main approaches to psychological needs have been developed in the literature. One tends to view needs as learned during socialization (e.g., McClelland, 1985) and therefore differing in strength as a function of that learning, and the other views them as universal and innate (Deci & Ryan, 2000).

McClelland (1985) and others draw on the former theory to predict behavior. More specifically, these researchers predict variations in the strength of individuals' acquired needs based on the social conditions creating them, test for these differences, and then predict various outcomes based on need strength. This hypothesis has been used to examine the consequences of different levels of achievement motivation (Atkinson, 1958) and power motivation (Winter, 1973) and to probe the outcomes of different combinations of need strength. Importantly, they do not associate psychological need satisfaction with health and well-being.

In contrast, in the second approach, SDT research defines psychological needs as innate necessities, not acquired motives. In SDT, meeting these needs is considered essential for well-being. Therefore, a basic difference in the research approaches is that SDT research does not focus on variations in need strength. Rather, it examines the extent to which individuals experience basic psychological need satisfaction in different social contexts. It also asks if different degrees of satisfaction have different consequences. The primary assumption and subsequent findings reveal that in contexts that support **basic psychological needs** for relatedness, competence, and autonomy, individuals experience greater well-being and more autonomous motivation, whereas in contexts that frustrate these psychological needs, individuals experience controlled motivation or amotivation and ill-being.

Box 3.1 Questions for Elaboration

Think about a class in which the professor is articulate, provides clear explanations, and gives assignments that you can understand and follow. However, the professor does not like to hear students' comments and seems impatient when you try to express your opinion. When you see him/her on campus, it seems that he/she does not recognize you and never greets you. In SDT's conception, this professor seems to support your sense of competence (provides clear explanations and optimally challenging assignments) but does not support your sense of relatedness (ignores you) or autonomy (suppresses your voice). How do you evaluate your type of motivation in this class (autonomous versus controlled)? Can you compare your experience and motivation in this class to other classes where the professor is more interested in your personal opinion?

Basic Psychological Needs: Definition and Contextual Support

People are more likely to engage in an activity if they think they can do it (Ryan & Deci, 2000). *Competence support*, often defined as the provision of structure (versus chaos), refers to guidelines for behavior and involves communication of expectations, explanations and administration of consequences, and informational feedback (Grolnick et al., 1997). In the school setting, such support is essential for both students and teachers. In studies of students, Skinner, Johnson, and Snyder (2005) and Jang, Reeve, and Deci (2010) demonstrated that when teachers communicate[2] well-defined expectations and give explicit directions, students' **competence** and engagement are supported. In a study of teachers, Fernet, Austin, Trepanier, and Dussault (2013) found that role ambiguity diminishes teachers' sense of personal accomplishment at school by decreasing their sense of competence. A role is ambiguous if an individual does not have enough information to perform it properly and does not know what is expected of him or her (Rizzo, House, & Lirtzman, 1970). Such persons are obviously less likely to feel competent (Cherniss, 1980).

[2]It is important to distinguish between structure (competence support) and control. For an excellent discussion and findings disentangling structure and control in education, see Jang et al. (2010).

Autonomous motivation requires a sense of **relatedness** with others (Grolnick et al., 1997). Feelings of belonging and connection (Baumeister & Leary, 1995; Ryan & Deci, 2000) are essential for motivations to become integrated. Put otherwise, people need a "secure base" with a significant other (Bowlby, 1979). If parents, teachers, and employers seek behaviors that are neither interesting nor enjoyable, individuals may be more motivated to engage in them if they have a relationship with a social agent who is affectionate, caring, and connected (Ryan & Deci, 2000). This type of *environmental support*, often defined as interpersonal involvement, requires the provision of warmth and caring and an interest in the other person's activities. Ultimately, interpersonal involvement may predict the internalization of extrinsically motivated behaviors (Grolnick et al., 1997), a hypothesis substantiated by Ryan and Grolnick (1986) who found that children who felt more connected to and cared for by their parents better internalized positive school-related activities.

Autonomy is critical to internalization and integration. In SDT, autonomy refers to "endorsing one's actions at the highest level of reflection" (Ryan & Deci, 2017). More simply stated, the individual's behavioral engagement corresponds with his or her personal values, interests, and needs. Thus, to integrate a behavior, the individual must grasp its meaning and synthesize that meaning with the individual's other goals and values.

Therefore, competence and relatedness may not suffice for autonomous motivation because external contingencies (rewards and punishments) may facilitate behavioral engagement based on external regulation, as long as the individual feels competent. Likewise, when a behavior or attitude is endorsed by a social group to which one feels related, one may enact the behavior because of a desire to feel affiliated to the group and to enhance one's self-esteem (an introjected rather than autonomous regulation). However, only an environment based chiefly on autonomy support can generate autonomous motivation and integration by allowing the person to satisfy all three primary psychological needs: competence, relatedness, and autonomy.[3]

Autonomy support refers to the following behaviors by socializing agents: taking note of other people's perspectives (e.g., children, students, employees, and partners); performing actions that foster choice, self-initiative, and participation in decision-making; supplying meaningful rationales and relevance; and abstaining from language or actions that may be experienced as a pressure to display a specific conduct. Supporting autonomy in these ways has been found to enhance children's intrinsic motivation, facilitate well-internalized extrinsic motivation, prompt the experience of autonomy and authenticity, and result in effective performance and psychological well-being (Reeve, 2006; Roth, 2008; Vansteenkiste, Zhou, Lens, & Soenens, 2005).

Definition Box

Basic psychological needs (Ryan & Deci, 2017)

Relatedness: Feeling connected and involved with others and having the sense of belonging

Competence: Feeling effective in one's interactions with the social environment

Autonomy: Endorsing one's actions at the highest level of reflection

Autonomous Motivation in Health Care and Education

Given the empirical support for SDT propositions on antecedents and outcomes of the various types of motivation, it is not surprising that interventions have been made to promote autonomous

[3]Outside the realm of SDT, the concept of autonomy has often been depicted as antagonistic to relatedness and as equated with independence. However, the SDT definition of autonomy is orthogonal to independence. An extensive discussion of this topic may be found in Chirkov, Ryan, and Sheldon (2011) and Chirkov (2009).

motivations in many contexts, including education, work, and health care (Ryan & Deci, 2017). For example, Williams, Niemiec, Patrick, Ryan, and Deci (2009, 2016) conducted experimental studies based on SDT to evaluate the effectiveness of an intensive tobacco dependence intervention intended to support autonomy and perceived competence in facilitating long-term tobacco abstinence. Adult smokers were recruited into a randomized cessation induction trial. The results revealed that smokers in the intervention group were more likely to attain tobacco abstinence. Furthermore, these effects were partially mediated by changes in both autonomous motivation and perceived competence over a period of 6 months. In the following paragraphs, I'll describe an applied study in more detail that explores implications of the theory for education.

Students may make efforts at school based on both controlled and autonomous motivation. However, from the research reviewed so far, it is clear that students whose motivation is controlled may suffer poorer quality of learning, for example, relying on memorization rather than deeper cognitive processing (Vansteenkiste et al., 2010), and poorer well-being. Furthermore, controlled motivation, especially when characterized by external regulation, is based on external supervision of students' behavior that is always limited to a specific time and place. Briefly stated, SDT has a unique implication for instruction. Under SDT, the teacher hopes to get to the point where psychological need satisfaction, rather than the teacher himself/herself or any other external contingency, drives the students' activities in the classroom.

Cheon, Reeve, and Moon (2012) designed an experimentally based teacher-focused intervention to help physical education teachers be more autonomy supportive of their students. Nineteen teachers participated in the intervention. Data were collected from their 1158 middle and high school students and from independent observers. The teachers in the experimental group ($n = 10$) participated in a three-part intervention during the spring semester (late February through mid-July), while teachers in the control group ($n = 9$) participated in the intervention experience after the study ended. The intervention meetings were moderated by an SDT professional focusing on autonomy-supportive teaching practices (nurturing students' inner motivational resources) in physical education classes. Following SDT, the intervention was focused on the following practices: (1) considering the students' perspective and incorporating students' input and suggestions into the day's instructions; (2) relying on noncontrolling language by communicating in ways conveying flexibility (e.g., offering information on options) and minimizing pressure; (3) providing explanatory rationales to help students comprehend why a specific request or activity has a personal value; and (4) acknowledging negative affect in general and also as elicited by the teachers' expectations and/or by the learning process. The first meeting was a 3-hour workshop on the nature of autonomy support. A second 2-hour meeting took place 6 weeks later; it focused on the teachers' autonomy-supportive practices since the beginning of the semester. More specifically, the teachers discussed advantages and pitfalls based on their personal experiences. Part three took place 6 weeks later; at this session, teachers shared ideas about how to be autonomy supportive in physical education classes. Teachers in the experimental group completed two additional booster reflective activities between meetings.

Data were collected from students at three time points, at the beginning of the semester (after the first teachers' meeting), in the middle (after the second teachers' meeting), and again when the semester had ended. The students completed 11 dependent measures. Two served as manipulation checks and nine served as students' outcomes: three measures were the satisfaction of the needs for relatedness, competence, and autonomy, in addition to amotivation, autonomous motivation, classroom engagement, perceived skill development, future intentions with respect to physical activity, and class achievements. In addition to students' self-reports, the autonomy-supportive teaching was measured by professional raters who visited the classrooms after the second teachers' meeting (equivalent to the students' time two measurements) and provided scores

based on a rating sheet developed and validated by Reeve, Jang, Carrell, Jeon, and Barch (2004). Two raters, who were blind to the teachers' experimental assignments, rated each teacher. The two observers' ratings were highly positively correlated on each instructional behavior, allowing the researchers to average the two ratings into a single score for each of the four autonomy-supportive instructional behaviors.

Manipulation checks based on student reports and observations revealed that the teachers in the experimental group were more autonomy supportive than the teachers in the control group. Since data were collected from students over time, the researchers were able to analyze the differences between groups over time. Although the condition main effect was significant, the two conditions (teachers in experimental group vs teachers in the control group) did not differ at the baseline (i.e., at the start). As expected, the condition X time interaction was significant; by that I mean perceived autonomy support increased significantly for the students of the teachers in the experimental group from the first to the second measurement and again from the second to the third measurement, but it decreased significantly for the students of the teachers in the control group.

The results of the outcome measures follow SDT predictions. Namely, the three measures for psychological need satisfaction revealed a main effect for condition (control group/experimental group), indicating that the students of teachers in the experimental group reported higher need satisfaction than students of teachers in the control condition. The interaction of condition and time was also significant for the three measures of the three needs indicating that at the start, there were no differences between groups, but over time, the students of teachers in the experimental group reported higher need satisfaction. The results were similar for student reports of their autonomous motivation, class engagement, skill development, future intentions, and for course achievement. Thus, students of the teachers in the experimental group showed meaningful gains in all six course-related outcomes that were assessed. Additional analysis revealed that the relation between condition and the six outcomes was mediated by a composite score of the three need satisfactions. These mediation paths were supported while controlling for the initial level of each outcome measure (i.e., controlling for the measurement at the baseline) and while controlling for gender and grade level.

Interestingly, Cheon and Reeve (2013) collected a follow-up dataset to determine whether those earlier observed benefits endured 1 year later. Compared to teachers in the control group, teachers in the experimental group were more autonomy supportive and less controlling based on independent observations and on the perceptions of their students. Furthermore, their students consistently reported greater autonomous motivation and more positive outcomes than did the students of teachers in the control group.

In sum, this research suggests the effectiveness of an SDT-based teacher-training intervention program and demonstrates its effectiveness for students' autonomous motivation, achievements, engagement, and skill development.

Concluding Remark

Let's go back to the example that opened this chapter. I asked you to think of three quite different classes. You were enthusiastic and eager in one, anxious and stressed in the second, and bored maybe even irritated in the third. Perhaps the second and third professors had no idea how you were reacting. While the first professor either had good instincts or good training (or both), the others may have benefitted from knowledge of SDT. Or perhaps you might have been able to do something? As a final remark, I would like to introduce Reeve's (2013) conceptualization of students' agentic engagement. It refers to the extent of students' constructive contribution to the flow of the instruction in terms of asking questions, expressing preferences, and letting the teacher know what they want and need. According to Reeve, agentic engagement is an active way by which students may help their instructors become more autonomy supportive in their teaching. You may find more information on this new concept in Reeve's work.

Summary

- SDT goes beyond simply analyzing how the quantity of motivation affects behavior to take a closer look at how the type (i.e., quality) of motivation matters.
- The main distinction is between autonomous motivation and controlled motivation. Although the strength of motivation may be high whether it is autonomous or controlled, the former is related to adaptive behavior and well-being, and the latter is related to maladaptive behavior and ill-being.
- SDT's discussions of the contextual antecedents of autonomous and controlled motivation opened the door for research on factors that may predict autonomous motivation in many different contexts, from sports to education and health care. This research, in turn, has triggered interventions in all of these varied fields.

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Self-Regulation Strategies and Regulatory Fit

4

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Contents

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Introduction

When working on a task such as an assignment for a class, there are at least two internal rewards that might motivate students. First, the topic or theme might fit their *personal preferences*. They may, for example, be fascinated by the subject, value high achievement in the academic domain, or feel obliged to make their utmost effort. In this case, motivation results from individuals' preferences regarding content – their interests, needs, or motives. Psychological research has long focused on this level of analysis of motivation, and there is substantial evidence that needs and motives are powerful predictors of human behavior (Heckhausen & Heckhausen, 2008; Roth, Chap. 3).

A second type of reward, suggested more recently in the scientific literature on motivation, concerns the *type of task* involved in achieving a goal. According to this view, certain types of tasks are themselves more motivating for some than others. An assignment regarding the same content can, for instance, require to read a text and to write an essay either summarizing the key information from the text or outlining the applied implication of the text content. The former focusses on thorough reading and error free rewording of the content, whereas the latter likewise requires thorough reading but also some creativity to connect the readings to an applied context. Likewise, to pass a pending

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exam, some students might opt for a "cramming" method and learn all the material in a couple of days before the exam, whereas others are more comfortable gradually learning the material in a step-by-step manner.

As these examples illustrate, the means or behaviors applied to complete a task or achieve a goal can differ. Research on **self-regulation** suggests that some of these so-called **self-regulation strategies** will be more motivating than others under specific circumstances. We define self-regulation as the volitional (will-based) and cognitive processes individuals apply to reach desired states including goal striving and need fulfillment (Sassenberg & Woltin, 2008).

This chapter will summarize and provide an introduction to self-regulation. First, we will describe how self-regulation and self-regulation strategies are related to motives and other motivational concepts. Second, self-regulation strategies, their antecedents, and their consequences will be presented – with a particular focus on the motivational effects derived from the *fit* between individuals' self-regulation strategies and environmental demands. Finally, we will summarize research demonstrating how this regulatory fit can help to solve people's motivational problems in applied settings, ending the chapter with a discussion of a field study in the context of health behavior (i.e., physical exercise).

Definition Box

Self-regulation: Volitional (i.e., will-based) and cognitive processes individuals apply to reach their goals and fulfill their needs.

Self-regulation strategies: The specific types of behaviors and mental operations applied to achieve a goal or fulfill a need (such as thorough vs. superficial).

The Motivational Hierarchy: Motives, Goals, and Strategies

One important differentiation in research on the psychology of motivation concerns the difference between needs and motives on the one hand and goals on the other hand. **Needs and motives** are individual preferences for types of incentives (e.g., social contact in case of the affiliation motive). *Motives* refer more to the (rather cognitive) preferences, while the term needs stresses the biological or otherwise essential basis (Heckhausen & Heckhausen, 2008). **Goals** are defined as desired end states (Austin & Vancouver, 1996). They, thus, specify the preference for one specific event or incentive. Along these lines, going out for drinks or parties to meet people can be a goal, but the reason "behind" this behavior would stem from a motive to affiliate with others. In other words, goals refer to certain, tangible, events, whereas motives describe a person's general preference.

Definition Box

Goals: Desired state specifying a concrete event an individual is striving for.

Motives/Needs: Preference for types of incentives (e.g., social contact). Motives are used to describe mental states, whereas the term need is rather used to stress the biological or essential nature.

Psychological research distinguishes between several different motives, such as the achievement, the affiliation, and the power motive. All these motives are generally classes of incentives, with the general aim to maximize satisfaction of some kind. Different motives may predominate as a result of individual or situational characteristics, leading to different goals and behaviors. For example, someone with an achievement motive will likely have goals such as obtaining a high grade, winning a game of sports, or excelling in their profession. Someone with an affiliation motive will likely have goals such as working together on assignments, playing team sports, or getting along well with their colleagues. The distinction between goals and motives illustrates that motives are more abstract than goals, with goals being subordinate to motives (see Fig. 4.1).

Achieving certain goals will also serve the motive the goal is derived from. Self-regulation summarizes the means and mental processes

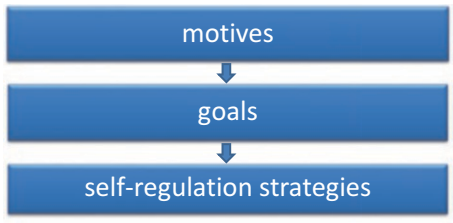

Fig. 4.1 Motivational hierarchy: from abstract motives to concrete strategies

applied during goal achievement – for instance, the strategies to improve gradually or to put all energy for a short period into a subject (i.e., cramming) are different strategies that could serve the goal to perform well in an exam. Self-regulation strategies are, thus, again more specific than and subordinate to goals. As alluded to earlier, research on motivation has traditionally focused on the two more abstract levels of this hierarchy – needs/motives and goals. In contrast, the strategies people use during goal striving received limited attention (Heckhausen & Heckhausen, 2008), because researchers were lacking an approach to treat the fast amount of different means and behaviors that can be applied to reach a goal in a way that made them accessible to scientific analysis (Brendl & Higgins, 1996).

The breakthrough in this respect was achieved when Tory Higgins (1997, 1998) formulated his idea of *self-regulation strategies*. The theories developed around self-regulation strategies do not only summarize means and behaviors, but they specify the antecedents and consequences of these categories of means and behaviors. These causal chains from preconditions via strategies (or categories of means and behaviors) allow for scientific analysis and for predictions in research on self-regulation.

Self-Regulation Strategies

Regulatory Focus

Regulatory focus theory (Higgins, 1998) distinguishes between two independent motivational systems: the promotion and the prevention system. When the promotion system is predominantly active – in a so-called promotion focus – individuals are concerned with "ideal" states, reflected in a sense of hope and aspiration. Promotion-focused individuals strive eagerly to achieve their goals. In other words, individuals in a promotion focus are in a "go for it" mode. Their predisposition is to act (ensuring against errors of omission). They try not to miss any opportunity and apply risky strategies, which makes them more likely to show behaviors that do not necessarily contribute to goal achievement (e.g., using the first but not necessarily best opportunity to make steps toward goal achievement). In general, individuals in a promotion focus are concerned with the presence or absence of positive outcomes: they strive for promotion success (gains) and try to avoid promotion failure (non-gains).

In contrast, prevention-focused individuals are more concerned with "ought" states, reflected in a sense of existing duties and obligations. They are highly vigilant during goal striving, try to avoid errors, and apply defensive strategies (e.g., show behaviors that almost definitely contribute to goal achievement). They rather refrain from taking action than risk making a mistake (ensuring against errors of commission) and are "better safe than sorry," careful in their approach even if this seems difficult or unnecessary. In a prevention focus, individuals are concerned with the presence or absence of negative outcomes: they strive for prevention success (non-loss) and try to avoid prevention failure (loss) (Table 4.1).

A promotion focus is activated, when individuals situationally pursue their ideals and when they see opportunities to gain something, whereas a prevention focus is activated when individuals are guided by obligations and when they are aware of potential losses (Fig. 4.2). Students can, for instance, strive to write an A in an exam. This goal can be pursued in a promotion or in a prevention focus. A promotion focus would be likely when the student sees the opportunity to write an A because she feels particularly competent regarding the content; she might see the exam as a situation in which she can *gain* a good grade. This student would start out optimistically and write down everything that comes to mind. In contrast, a student might be in a prevention focus, because she definitely needs the A to, for example, be eli-

Table 4.1 Overview of regulatory focus theory

Antecedents	Self-regulation strategy	Consequences
	Promotion focus	
Pursuit of ideals Environment stressing gains Bolstering parenting style Independent culture	Strategy: risky Striving: eager (use opportunities) Events: gains vs. non-gains	Cheerfulness in case of success vs. dejection in case of failure Optimism Creative performance Perspective taking and negotiation performance
	Prevention focus	
Pursuit of obligations Environment stressing losses Critical and punitive parenting style Interdependent culture	Strategy: defensive Striving: vigilant (avoid errors) Events: non-losses vs. losses	Quiescence in case of success vs. agitation in case of failure Resistance to change Analytic performance Conservative biases

Fig. 4.2 In which regulatory focus is the glass half empty and which half full? © G. Altmann/Pixabay.com

gible to partake in another important course. She would feel that she could *lose* something and will therefore approach the exam in a more thorough processing mode to avoid errors.

Box 4.1 Zooming In: Regulatory Focus vs. Approach and Avoidance

For a more thorough understanding, it is important to distinguish between promotion vs. prevention focus and approach vs. avoidance, respectively. Approach and avoidance distinguish whether an individual primarily focuses on approaching something subjectively good or avoiding something bad. A student could, for instance, study with a focus on passing an exam or with a focus on not failing an exam. Approach and avoidance are closely related to the promotion and prevention focus, respectively, but there are important differences. On the one hand, the eager striving and the focus on gains in a promotion focus imply approaching something good, whereas the vigilance and the focus on losses suggest that avoidance will be dominant (Shah, Brazy, & Higgins, 2004). However, promotion is not only about approaching gains but also about avoiding non-gains (not getting an A), and prevention is about avoiding losses *and* approaching non-losses (getting an A). A sports team can, for instance, eagerly strive (a promotion strategy) not to lose a game (avoiding a negative outcome), for example, because this will warrant them the points they need to qualify for the play-offs. As this example illustrates, regulatory focus and approach/avoidance behaviors are not necessarily compatible such that a promotion focus is always related to approach behavior and prevention is always related to avoidance behavior.

As this example illustrates, the two foci may vary situationally and may be temporarily activated using gain or loss framing. Because many tasks and goals can be framed in either positive (gain) or negative (loss) frames, researchers and practitioners can differentially induce the foci with relative ease. For example, a health message framing regular exercise as a good way to promote your health is likely to activate a promotion focus. In contrast, a health message framing regular exercise as a good way to prevent disease is likely to activate a prevention focus. Similarly, shops can charge a fee (loss) or give a discount (gain) when paying with credit card or cash, respectively (Idson, Liberman, & Higgins, 2000). Aside from reading messages framed in gain/non-gain or loss/non-loss terms, experimental studies have also successfully used tasks such as reflecting on past experiences, describing one's own aspirations (promotion) or obligations (prevention) and essay writing to induce the different foci.

The two foci may vary situationally, but also chronically. On a chronic level, a bolstering parenting style reassuring children that they can achieve a lot is, for example, correlated with children's promotion focus. In contrast, a critical and punitive parenting style focusing on obligations, safety, and rules predicts children's prevention focus (Keller, 2007). Culture has also been found to be an important factor in shaping people's regulatory focus (e.g., Lee, Aaker, & Gardner, 2000; Uskul, Sherman, & Fitzgibbon, 2009). For example, a promotion focus is more prevalent in Western societies, which tend to emphasize individual uniqueness and aspirations to "be the best" and stand out from the crowd. In contrast, a prevention focus is more prevalent among East Asian societies (e.g., Chinese, Japanese), which tend to emphasize interdependence, group harmony, and a sense of obligation (Markus & Kitayama, 1991).

Although both foci may vary as a function of situational or chronic pressures, they are not opposites on one dimension. Theoretically, both foci constitute independent dimensions implying that how frequently an individual pursues goals in a promotion focus does not predict how frequently the same person pursues goals in a prevention focus (Higgins, 1997). In most measures of promotion and prevention focus (see Table 4.2 for an overview), the two scales are if anything slightly positively correlated (Higgins et al., 2001; Sassenberg et al., 2012).

Table 4.2 How to measure self-regulatory focus

Measuring (chronic) self-regulatory focus		
Example items	# items	Reference
Promotion How often have you accomplished things that got you "psyched" to work even harder? Do you often do well at different things that you try?	6	Higgins et al. (2001)
Prevention How often did you obey rules and regulations that were established by your parents? Not being careful enough has gotten me into trouble at times.	5	
Promotion Nothing ventured, nothing gained. No pain, no gain.	8	Faur, Martin, and Clavel (2017)
Prevention Better an egg today than a hen tomorrow. Better safe than sorry.	10	
Promotion I am striving for success in life. I am guided by my ideals.	12	Sassenberg, Ellemers, and Scheepers (2012)
Prevention Success sets me at ease. I take care to carry out my duties.	8	

The Effect of Promotion Versus Prevention Focus

Research has shown a broad range of consequences of both foci in terms of people's motivation to complete a task and the emotions they experience as a result of failing or succeeding in achieving their goals. The effects described in what follows stem from research that either

compared an experimentally induced promotion to an experimentally induced prevention focus or correlated assessed chronic promotion and prevention focus with the respective outcome measures or both.

First of all, individuals show different emotions in response to success and failure depending on their regulatory focus. The scientific analysis of emotions typically identifies two dimensions of core affect (activation and pleasantness; Russell & Barrett, 1999) along which specific emotions may vary. Pleasantness refers to the subjective experience of "doing well." It summarizes the experience of something being good or bad, positive or negative, or pleasant and unpleasant. Activation refers to the subjective sense of mobilization or energy. It summarizes the experience of one's physiological state and may range from anywhere between sleepiness, lethargy, relaxation, attentiveness, activation, hyperactivation, and frenetic excitement.

In a promotion focus, self-regulation success (gains) leads to positive activating emotions (i.e., cheerful emotions such as happiness or pride), whereas self-regulation failure (non-gains) leads to negative emotions with low activation (i.e., dejected emotions such as sadness or shame). In a prevention focus, self-regulation success (non-losses) leads to positive emotions with low activation (i.e., quiescence as in a state of relief or relaxation), whereas self-regulation failure (losses) leads to negative activating emotions (i.e., agitation as in case of feeling upset or worried; Higgins, Shah, & Friedman, 1997).

This implies that individuals in a promotion focus are more activated by success (or gains) and other positive stimuli such as positive role models. Hence, they will celebrate their successes more and be more motivated to follow the example of others who succeeded. However, individuals in a prevention focus are easier activated by failure (or losses) and other negative stimuli such as negative role models. In other words, these people will be motivated when they anticipate or face problems or when they see others who failed or were harmed (Idson et al., 2000; Lockwood, Jordan, & Kunda, 2002; Sassenberg & Hansen, 2007).

Another affective consequence of regulatory focus concerns the sense of optimism that people have during goal striving. Because people in a promotion focus have an easier time to see options to act, they are often more optimistic about their chances of success than people in a prevention focus. For the same reason, promotion-focused individuals tend to be more open to change, whereas prevention-focused individuals have a preference for stability (Grant & Higgins, 2003; Liberman, Idson, Camacho, & Higgins, 1999).

Beside these affective consequences, there are also a number of cognitive consequences of the two foci. A promotion focus leads to better creative performance and more global or abstract thinking, whereas a prevention focus leads to better analytic performance and a more detailed or local processing style of information (Friedman & Förster, 2005; Seibt & Förster, 2004). Therefore, in the student assignment example at the start of this chapter, a student in a promotion focus is likely to perform better in case the assignment requires creativity, whereas a student in the prevention focus is more likely to perform better when the assignment requires a thorough analytic, step-by-step approach.

Implications of regulatory focus have been found in many other domains. Promotion (compared to prevention)-focused individuals are better able to imagine others' perspective and recognizing others' emotions (Sassenrath, Sassenberg, Ray, Scheiter, & Jarodzka, 2014). They are also more successful in negotiations (Galinsky, Leonardelli, Okhuysen, & Mussweiler, 2005). The defensive strategy of prevention-focused individuals on the one hand facilitates their analytic performance but on the other hand makes them more prone to all sorts of conservative biases; they stick more to their own decisions and show a stronger confirmation bias (i.e., see information supporting their own opinion as more relevant than information contradicting it; Molden & Hui, 2011; Sassenberg, Landkammer, & Jacoby, 2014).

Box 4.2 Questions for Elaboration

Individuals differ chronically in their regulatory focus. Think about jobs for which a promotion focus and a prevention focus would be particularly profitable. Why?

Imagine you would like to move to a new flat with the help of some friends. Which tasks would you allocate to promotion-focused individuals and which to prevention-focused individuals and why?

Regulatory focus is a well-studied self-regulation strategy which asserts an influence on emotion, cognition, and behavior in multiple ways. There are a number of other self-regulation strategies that are not yet that well understood, because research has dedicated much less attention to them. Box 4.3 presents one of these examples.

Box 4.3 Zooming In: Regulatory Mode

To reach a goal, two types of actions are essential: making steps toward the goal and evaluating the current state and potential further steps. Regulatory mode theory (Kruglanski et al., 2000) distinguishes the motivational states in which these actions are dominant in locomotion and assessment mode. In a locomotion mode, individuals feel the urgent need to act and get on. They are impatient with barriers, delays, etc. and embrace each opportunity for change and breaking the status quo. Locomotors are, for instance, open for organizational chance (Kruglanski, Pierro, Higgins, & Capozza, 2007). Locomotors are doers.

In an assessment mode, in contrast, individuals are more reflective. They have a desire for perfectionism, fear errors, and are worried about missing out opportunities. To this end, individuals make comparisons and mentally simulate the outcomes of potential actions. As an outcome, assessors experience more regret in case of negative outcomes (e.g., a bad grade). Assessors are thinkers. More generally, assessment mode is positively associated with negative affect and depressive mood and negatively associated with subjective well-being, whereas locomotion is negatively correlated with depressive mood and positively associated with positive mood and subjective well-being (Higgins, Kruglanski, & Pierro, 2003).

Increasing Motivation Through Regulatory Fit

Regulatory fit is the match between a person's self-regulation strategy – being it regulatory focus, regulatory mode, approach/avoidance orientation, or something else – and the strategy they choose or have to apply to achieve a certain goal. Regulatory fit is high, if the preference and the affordances regarding self-regulation are matched and low if they are not. If, for example, a person in a prevention focus can thoroughly weigh the alternatives, this will be experienced as regulatory fit. A pressing deadline may prevent prevention-focused individuals from using such an analytic, step-by-step approach but may suit promotion-focused individuals better. If they can intuitively chose an alternative, this should be experienced as regulatory fit.

Definition Box

Regulatory fit: The match between an individual's momentary preferred self-regulatory preferences and the self-regulation strategy applied in a certain situation

According to the theory of regulatory fit (Higgins, 2000), stronger regulatory fit leads to a positive experience (i.e., it enhances the perception of the *value* of what people are doing). As a result, their behavior is experienced as more

pleasurable, and individuals will thus engage more in it (i.e., stronger persistence and more effort). Individuals with a strong promotion focus will, for instance, feel more attracted to choices they made after considering positive outcomes of several alternatives, whereas individuals in a prevention focus feel more attracted by choices they made after considering potential negative outcomes (Idson, Liberman, & Higgins, 2004). This is because individuals in a promotion focus care more about gains (and non-gains), whereas individuals in a prevention focus care more about losses (and non-losses).

Moreover, individuals, objects, and social targets related to behavior high in regulatory fit will be evaluated more positively. For example, individuals with a prevention focus are attracted more by low power (e.g., jobs not involving control over other people's situations) than individual in a promotion focus, because stereotypically low-power groups demand their members to defend their safety and security (against those high in power). However, individuals in a promotion focus have a stronger preference for high power (e.g., jobs involving a lot of control over other people's situation) compared to those in a prevention focus, because groups high in power according to common stereotypes provide the room to apply promotion strategies (e.g., be creative and try out new things, think globally, etc.; Sassenberg, Jonas, Shah, & Brazy, 2007).

The regulatory fit hypothesis, thus, describes a source of valence (i.e., positive evaluation) and motivation, which does not result from the fact that the behavior fits one's needs or motives. In contrast, it suggests that motivation can also result from a fit between strategy preferences and behavioral opportunities. A recent meta-analysis (Motyka et al., 2014) has shown that regulatory fit effects regarding evaluation, behavioral intention, and behavior are medium in size (r about 0.3). They thus seem to contribute substantially to individuals' motivation and choice of action. In the following paragraph, we will illustrate the applied relevance and external validity of regulatory fit effects.

Regulatory Fit in the Wild

Evidence for regulatory fit effects has been found in a number of applied fields, most notably in organizational settings, consumer behavior, health behavior, and sports performance. In this section, we will briefly summarize this work, before elaborating on a specific study in the context of health behavior.

In consumer research, a large body of studies have tested regulatory fit effects. One main finding of this literature is that regulatory fit between consumers' regulatory focus and brand characteristics leads to more positive evaluation of brands (for an overview, see Motyka et al., 2014). Florack and Scarabis (2006; Study 1), for example, studied preferences for a promotion or prevention advertisement message for sun lotions. Because sun lotion is generally bought for the purpose of preventing skin damage or disease, prevention-focused messages (e.g., use for protection) were more persuasive than promotion-focused messages (e.g., use for a healthy tan), and this was especially the case for individuals in a prevention focus. Similarly, participants in a study by Mourali and Pons (2009) were willing to pay more for consumer products (e.g., computers, printers) when a fit existed between regulatory focus (promotion vs. prevention) and the decision strategy.

Box 4.4 Question for Elaboration

Try to create messages to advertise a dating website that are tailored to create regulatory fit in individuals with a strong promotion and a strong prevention focus, respectively.

Another field that has repeatedly demonstrated regulatory fit effects is leadership research (for an overview, see Sassenberg & Hamstra, 2017). Regulatory fit from regulatory focus and regulatory mode lead to lower turnover intentions, more positive leader evaluations regarding effectiveness and satisfaction, and more organizational citizenship behavior (Benjamin & Flynn,

2006; Sassenberg & Hamstra, 2017). In a study by Hamstra, Sassenberg, Van Yperen, and Wisse (2014), for example, a regulatory fit between the regulatory focus of leaders and their group members in a real-estate business simulation task made group members feel more valued by their leader than when no regulatory fit existed.

Regulatory fit also asserts a positive impact in other domains of organizational psychology. Applicants consider, for example, jobs fitting their regulatory focus more attractive (Sassenberg & Scholl, 2013). Promotion-focused individuals value jobs more when they can take the lead and work autonomously, for example. In contrast, prevention-focused individuals valued job security more, feeling more attracted to jobs where they were able to continue developing, for example, through continued job training or gaining useful work experience. In addition, recruiters are more likely to select applications with a motivation letter fitting their own self-regulation strategy (Hamstra, Van Yperen, Wisse, & Sassenberg, 2013).

Finally, there is evidence that regulatory fit effects can facilitate sports performance. If a particular activity (e.g., defense) is perceived in line with an athletes regulatory focus (prevention focus), this leads to higher performance. This has been demonstrated for penalty kicking in soccer (Plessner, Unkelbach, Memmert, Baltes, & Kolb, 2009) and putting in golf (Kutzner, Förderer, & Plessner, 2013). These findings should, however, be considered as preliminary, because they rely on studies with small sample sizes.

All in all, this brief overview indicates that regulatory fit effects have a broad range of applications. In most empirical studies, fit from promotion *and* fit from prevention (or fit from *both* regulatory modes) occur. However, there are also applications in the organizational context (Petrou, Demerouti, & Häfner, 2015) as well as in close relationships (Righetti, Finkenauer, & Rusbult, 2011) that only found effects of regulatory fit from either promotion *or* prevention focus. At this point, it is not clear what caused these asymmetries in the findings. For applications of regulatory fit in field interventions, this implies that it needs to be thoroughly checked whether an intervention works equally well for participants in a prevention focus *and* those in a promotion focus.

The above summary has left out the domain in which the regulatory fit hypothesis has been applied most frequently and very successfully, namely, health communication.

Self-Regulation and Regulatory Fit in Health Communication

Many threats to public health arise from people's behaviors and lifestyles. For example, of a total of 56.9 million deaths in 2016, 15.2 million deaths (27%) were caused by ischemic heart disease (blockage of arteries to the heart) and strokes – caused by factors such as smoking, drinking alcohol, fatty foods, and stress, in combination with a sedentary lifestyle (WHO, 2018). Therefore, public health professionals try to find effective communication strategies to motivate individuals to change their health relevant behavior (Ludolph & Schulz, 2015). Over the last decade or so, researchers have frequently made use of the idea of regulatory fit. To be more precise, messages promoting a certain health behavior are framed in terms of gains (such as health promotion) or non-losses (such as preventing illnesses) and delivered to recipients with a chronic or situationally induced promotion or prevention focus (see Table 4.3 examples of tailored messages). As an outcome of a substantial narrative review, Ludolph and Schulz (2015, p. 149) conclude "regulatory fit is a promising approach to enhance the effectiveness of health messages." Therefore, the remainder of this chapter summarizes a field study demonstrating the successful application of regulatory fit in health communication regarding a health behavior – here physical activity.

Latimer, Rivers et al. (2008) aimed to test the impact of regulatory fit in health communication. They experimentally varied health messages related to physical activity in order to increase physical activity among inactive individuals (i.e., "couch potatoes"). While the content of the messages was constant, their framing varied. They either received a gain-framed message emphasizing the *benefits* of physical activity or a

Table 4.3 Samples of tailored messages regarding fruit (F) and vegetable (V) intake

Promotion-focused messages	Prevention-focused messages
Optimize your health: Eat 5–9 FV every day	Protect your health: Eat 5–9 FV every day
Take the 5–9 challenge: It's a goal you can meet!	Eat 4–9 FV a day – it's what everyone ought to do!
FV contain fiber, which promotes optimal colon functioning	FV contain fiber, which helps prevent colon cancer
When you're in a hurry, have a quick and healthy breakfast	When you're in a hurry, don't skip a healthy breakfast
Get revved up in the morning with FV	Relax in the morning with FV
FV provide nutrients that promote health	FV provide nutrients that help guard against disease
Achieve the 5–9 goal to look and feel your best	Meet the 5–9 guideline to protect your health
Promote your health: Eat more FV today!	Prevent disease: Eat more FV today!

Source: Latimer, Williams-Piehota, et al. (2008)

loss-framed message emphasizing the potential *costs* associated with not being physically active (e.g., "Scientists say to accumulate physical activity throughout the day to stay healthy or improve your health" vs. "Scientists say failing to accumulate enough physical activity throughout the day can lead to poor health").

Based on the theory of regulatory fit, the researchers predicted that gain-framed messages would "fit" better with a promotion focus, whereas loss-framed messages would "fit" better with a prevention focus. As a result, after reading gain-framed messages, promotion-focused individuals should experience more value from regular exercise (i.e., have more positive thoughts and feelings about physical exercise) and engage in greater physical activity than prevention-focused individuals. In contrast, after reading loss-framed messages, prevention-focused individuals should experience more value from regular exercise and engage in greater physical activity than promotion-focused individuals.

To test these hypotheses, the researchers recruited a total of 206 participants (aged 18–69 years) with a sedentary lifestyle through the National Cancer Institute's (NCI) database of the American public (i.e., cancer survivors and their family and friends). Through the NCI, people can ask questions and gain information about cancer by calling a toll-free number. Consenting callers first completed a screening interview to gauge if they were eligible to participate in the study. For example, callers with a physical impairment or doctor's recommendation advising against unsupervised physical activity were not eligible to participate. Eligible participants then completed a baseline interview assessing their level of physical activity, after which they were randomly exposed to either a promotion- or prevention-focused message encouraging regular physical exercise.

Participants' chronic regulatory focus and all dependent measures (i.e., perceived value of physical exercise and level of physical activity) were assessed during a second interview, 2 weeks later. Ideally, the assessment of the regulatory focus should have taken place before the intervention. However, due to time restrictions during the first telephone session, this was not possible. Of the original 206 participant, only 118 completed the second interview (57%). Those who dropped out were more physically active before receiving the intervention and more likely to be of non-white ethnicity. Both – the order of the measures and biased dropout – are limitations that can often be found in field studies: organizational restrictions often prevent the application of an optimal design and control over the study, and its participants are limited.

Despite these methodological limitations, the findings of this field study provided support for the regulatory fit hypothesis. As we can see in Fig. 4.3, individuals with a strong prevention focus who received a loss-framed message reported that they had engaged more in physical activity over the last 2 weeks (i.e., a product of time spend on exercising and intensity of the exercise). The same was true for individuals with a strong promotion focus who received a gain-framed message. Importantly, these results controlled for physical activity prior to receiving the message. This study supports the general tenet of

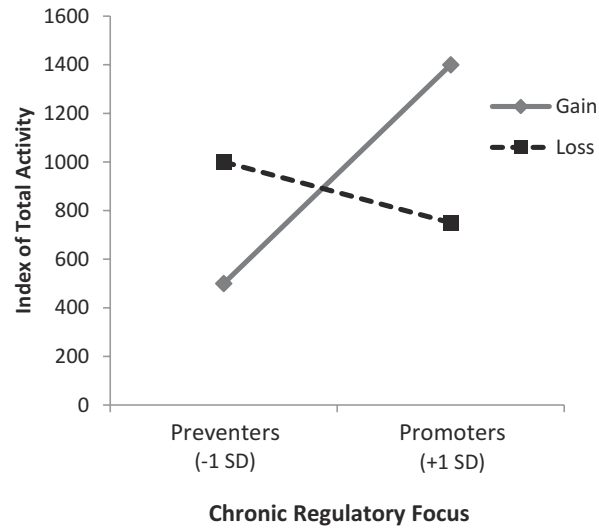

Fig. 4.3 The effect of loss- versus gain-framed messages on people's total activity

regulatory focus theory and illustrates that a seemingly trivial difference in the way a message is framed can have significant ramifications on a behavioral level.

Recall, however, that the researchers not only predicted an effect on participants' actual physical activity. Indeed, regulatory fit theory suggests this effect occurs because the existence of fit leads people to attach more value to those behaviors that facilitate goal attainment. The findings from the current study also supported this claim. Thus, participants who experience a fit between the message and their regulatory focus reported more positive feelings about the message, as well as more positive prospective and retrospective feelings associated with engaging in physical activity. Finally, these feelings associated with physical activity mediated the impact of regulatory focus and message type on physical activity.

In sum, the findings of this study underline the potential of regulatory fit for health communication, despite the limitations regarding the design and the attrition mentioned above. The fact that similar results have been reported in a number of studies (for a summary, see Ludolph & Schulz, 2015) further justifies this conclusion. Positive effects of messages high in regulatory fit have also been found for healthy snacking (Hong & Lee, 2007), attitudes toward organic food (Hsu & Chen, 2014), and many other health-related attitudes and choices. Thus, the regulatory fit hypothesis has proved to be a powerful framework for health-related intervention as well as interventions in other domains.

Summary

- People are not only motivated by their preferences regarding content – their goals, motives, and needs. They also engage in behaviors that fit their preferences regarding processes – their preferred self-regulatory strategies.
- In a promotion focus, individuals focus on gains and non-gains and pursuit goals applying eager, risky strategies.
- In a prevention focus, individuals focus on non-losses and losses and pursuit goals applying defensive, conservative strategies.
- When tasks or contexts allow individuals to behave in line with their self-regulation strategies, they experience regulatory fit and thus become more engaged in the task.
- These regulatory fit effects have the potential to increase motivation in many domains such as health, sports, consumer behavior, or work.

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Guiding Answers to Questions in the Chapter

1. Q (with Fig. 4.2): In which regulatory focus is the glass half empty and in which half full?

   A: In a promotion focus, the glass would be perceived as half full due to the focus on the gains (here the water that is still in the glass). In contrast, in a prevention focus, the glass would be classified as half empty because of the focus on the losses (here the water that is missing in the glass).

2. Q (with Box 4.2): Individuals differ chronically in their regulatory focus. Think about jobs for which a promotion focus and a prevention focus would be particularly profitable. Why?

   A: Prevention focus fits jobs with a focus on security, where the identification of problems or failures is leading, or jobs focused on enforcement of rules and obligations. Promotion focus fits better with jobs focused on growth, where the identification of changes and opportunities for development is leading, or jobs focused on creative output.

3. Q (with Box 4.2): Imagine you would like to move to a new flat with the help of some friends. Which tasks would you allocate to promotion-focused individuals and which to prevention-focused individuals and why?

   A: Tasks that require attention to detail and the prevention of something going wrong (e.g., the handling of precious or vulnerable items) would better fit a prevention focus. Tasks that require an optimistic, positive, and creative approach (e.g., fitting furniture in the truck, decorating the house) would better fit a promotion focus.

4. Q (with Box 4.4): Try to create messages to advertise a dating website that are tailored to create regulatory fit in individuals with a strong promotion and a strong prevention focus, respectively.

   A: To create messages that fit the different foci, try to identify what people can gain or lose by becoming or not becoming a member of a dating site (e.g., to help people find a perfect match vs. to help people prevent being alone).

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Habit and Behavior Change

5

Bas Verplanken and Sheina Orbell

Contents

Introduction

Why do we behave as we do? Ask your colleague why he is driving to work instead of using public transport, and you are likely to hear some sensible reasons: "It gets me faster to work," "The bus is unreliable," and "I need to carry my bag." While these may be genuine considerations, the most accurate and arguably the most honest answer is "that's what I always do." Ask an applied social psychologist why people behave as they do, and you are likely to be presented with a socio-cognitive model, most likely the theory of planned behavior (Ajzen, 1991). The basic assumption of these models is that *motivation* is driving our behavior and that attitudes and intentions are the most powerful determinants. However, the literature on the relation between attitudes and behavior has always been haunted by one salient finding: while intentions are reasonably good predictors of future behavior, measures of past behavior consistently outperform this prediction and share variance with future behavior that is not accounted for by intentions. There may be many reasons for this (e.g., Ajzen, 2002), but one is that when behavior is frequently executed, it may become dissociated from the intention it originated from. Indeed, Judith Ouellette and Wendy Wood (1998) demonstrated in a meta-analysis of studies which included measures of intentions, past behavior, and future

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behavior that frequently performed behaviors were less strongly correlated with intentions compared to infrequently performed behaviors.

In this chapter we will first define what habits are and describe consequences of habituation. We then briefly discuss how habit strength can be measured. The remainder of this chapter is devoted to habit change.

Defining Habit

In a diary study among students, Wendy Wood, Jeffrey Quinn, and Deborah Kashy (2002) established that between a third and half of the reported behaviors were things they did almost daily and usually in the same location. And they did not spend much thinking on those behaviors: their thoughts wandered about 50–60% of the time during those episodes. Thus, repeated behaviors are not only prevalent; they may acquire a quality of automaticity (e.g., Verplanken & Aarts, 1999). Also, a habit is formed when someone repeatedly and automatically responds in a specific way to a specific cue in a recurrent, stable, context (e.g., Wood & Neal, 2007). A cue can be anything, for instance, time (going to the gym at 5 o'clock), location (buying popcorn in the cinema), an object (not resisting that chocolate muffin), a person (joking with your roommate), a physiological state (grabbing a coke when thirsty), or activities (ordering a take-away when watching a football game). These cue-response associations are stored in memory, and a response is automatically triggered upon encountering the cue. We are now ready for a definition of habits as "memory-based propensities to respond automatically to specific cues, which are acquired by the repetition of cue-specific behaviours in stable contexts." (Verplanken, 2018, p. 4). Thus, perhaps contrary to how people talk about habits, a **habit** is defined as a cognitive structure which involves a propensity to act, and not as the act itself (e.g., Wood & Rünger, 2016).

Definition Box

Habit: Memory-based propensities to respond automatically to specific cues, which are acquired by the repetition of cue-specific behaviors in stable contexts.

Let us focus still briefly on the aspect of automaticity. Automaticity comes in many "flavors." John Bargh (1994) distinguished four qualities which define automatic processes and which he dubbed "the four horsemen of automaticity": lack of awareness, lack of intentionality, mental efficiency, and difficulty to control or stop a process. Processes may be automatic in some or all of these features, and this also holds for habits (Verplanken & Orbell, 2003). Thus, most habits are characterized by a lack of awareness and conscious intent, are difficult *not* to do, and are mentally efficient, for instance, allowing you to multitask.

Habits are not necessarily confined to observable behavior. We also have habits of thinking (e.g., Verplanken, Friborg, Wang, Trafimow, & Woolf, 2007; Watkins, 2008). Such mental habits follow the same principles as behavioral habits. Thus, habitual thoughts occur automatically upon being activated by cues in stable contexts. For instance, a person may always have certain thoughts when looking in the mirror, entering a confined space, or encountering a particular person. When these thoughts are negative, such habits may significantly contribute to dysfunctional outcomes such as low self-esteem (e.g., Verplanken et al., 2007) or a negative body image (e.g., Verplanken & Tangelder, 2011).

Box 5.1 Questions for Elaboration

Make a list of things you do frequently. For each habit:

1. Identify the cue which triggers the habitual response, for instance, with respect to food, study, or leisure.

2. Reflect on whether this habit is functional or dysfunctional. Is it healthy or convenient? Might it have harmful consequences?
3. Analyze to which extent Bargh's (1994) "four horsemen" apply: lack of awareness, lack of intentionality, mental efficiency, and difficulty to control or stop. For instance, do you remember making a conscious decision; did you do other things at the same time; would it be difficult *not* to do?

Repeat this exercise for a habit of thinking.

Consequences of Habituation

Apart from being efficient and dealing with the regularity of everyday life, habituation has other consequences. One is that habits come with an **action-oriented mindset**, that is, a cognitive orientation characterized by a focus on executing the behavior at hand. This is in contrast to a **deliberative mindset**, where the individual is oriented toward possibilities and alternatives, for instance, when one is in the process of making an important decision (e.g., Gollwitzer, 1990; see also Keller, Bieleke, & Gollwitzer, Chap. 2). Thus, people in a habit mindset tend not to pay attention to alternative courses of action or to information about the context in which the behavior occurs.

In a research program on transportation mode choices, Bas Verplanken, Henk Aarts, and Ad van Knippenberg (1997) tested this proposition in two laboratory studies. Participants in the first study were presented with a hypothetical travel mode choice situation and had the opportunity to search information about attributes such as travel time or convenience for a number of travel mode options. Previously, the strength of their habit of cycling was assessed. Those who had strong cycling habits selected less information compared to those with weak cycling habits, while the information habitual cyclists sought was predominantly about their own habit: cycling. In a second study, participants were presented with a series of unknown travel situations. Each time they had to "discover" the nature of those situations before making a choice of a mode of travel, for instance, in terms of distance, luggage, or weather conditions. Previously, participants' car use habit was assessed. Strong car use habit participants consistently selected less information than weak habit participants; in other words, strong habit participants needed to know less about the travel context in order to make up their minds on how to travel. This effect appeared even when participants were prompted to deliberate about every situation. These studies thus demonstrated that habit comes with **tunnel vision**, that is, a lack of attention to or interest in information.

Another consequence of habituation is that established habits are not driven anymore by conscious intentions. While goals and associated intentions may form the starting point of many habits, and leave their traces in our cognitive system (e.g., Aarts & Dijksterhuis, 2000), those links may weaken or get lost altogether over time. Habitual acts are then merely instigated by the context cues that have got associated with the behavior, that is, without the involvement of goals or intentions (e.g., Wood & Rünger, 2016). Thus, while non-habitual behavior is under the control of "willpower," habituation shifts this control to the context that triggers the habit. David Neal, Wendy Wood, Mengju Wu, and David Kurlander (2011) demonstrated this in the cinema. Participants were invited to either a cinema or a campus meeting room and were given popcorn while watching movie trailers. The popcorn was either freshly cooked or old and stale. In addition, their habit strength of "eating popcorn in movie theaters" was assessed. Participants who had a strong popcorn habit and received fresh popcorn ate similar amounts compared to strong habit participants who received stale popcorn. However, this was *only* the case in the cinema context, that is, the context in which they performed their habit, and not in the campus meeting room.

Finally, habits are "sticky," in the sense of difficult to override. Suppose you have a strong habit of driving a particular route to work. One day you drive a friend to the airport. While being engaged in a conversation, you suddenly realize you took a turn to work instead of the airport. Thus, in spite of a conscious decision to act differently from an established habit, this habit may still take over. This happens when you are off guard, in this case being engaged in the conversation with your friend. Unintentionally performing a habit under such circumstances has been documented as **action slips** (e.g., Heckhausen & Beckmann, 1990). Sheina Orbell and Bas Verplanken (2010; Study 2) conducted a survey among smokers in public bars 2 months before smoking in pubs became illegal in the UK, who then completed a second survey 4 months after the ban was introduced. The first measurement contained an assessment of the strength of the habit of smoking-while-drinking-alcohol. At follow-up participants were asked to report if they had made accidental action slips by lighting, or nearly lighting, a cigarette since the ban came into force. Forty-two percent of the smokers reported to have experienced such action slips, and this was predicted by the strength of the previously assessed habit strength of smoking when drinking alcohol.

Definition Box

Action-oriented mindset: A cognitive orientation characterized by a focus on executing the behavior at hand.

Deliberative mindset: A cognitive orientation toward possibilities and alternatives.

Tunnel vision: A lack of attention to or interest in information.

Action slip: Unintentionally performing a habit.

The Measurement of Habit

It is not easy to capture constructs as elusive as habits. Although they are prevalent in everyday life, people are hardly aware of them, as you may have experienced if you did the exercise suggested in Box 5.1. Similar to many psychological constructs, there are no ways we can measure habit objectively, so we have to rely on indirect indicators. Three families of measurements have been used to assess habit strength, observations, self-reports, and implicit measures (e.g., Orbell & Verplanken, 2018). Each type reveals a different aspect of a habit.

Some scholars observe behavior and consider the frequency of occurrence as a measure of habit (e.g., Gram, 2010). While observable acts may be the outcome of a habit, behavioral frequency does not capture the automaticity aspect of a habitual action. A physician may frequently refer patients to the hospital, but this (hopefully) is not a habit. Also, systematically observing overt behavior is difficult and time-consuming. Another observation-based instrument is the response frequency measure (e.g., Verplanken, Aarts, van Knippenberg, & van Knippenberg, 1994). Participants are presented with multiple choice scenarios, for each of which they are instructed to choose an option as quickly as possible. The prevalence of one particular choice option across scenarios is taken as a measure of habit. Importantly, time pressure is an essential element, which is not always easy to implement. Also, for each habit domain, scenarios need to be developed and tested, which renders this method somewhat cumbersome.

By far the most prevalent method of assessing habit strength are self-report measures. For a long time habit was equated with past behavioral frequency, which was an inheritance from the behaviorist school. Many studies employed one-item measures of the kind "How often did you do behavior X," followed by response scales such as "never" to "always." However, these measures also ignore the automaticity aspect. In addition, one-item measures are notoriously unreliable and subject to biases. Wendy Wood and colleagues developed the frequency-in-context measure

(e.g., Ji & Wood, 2007). This measure consists of a retrospective self-report of performance frequency weighed by a measure of the stability of the performance context. The unique feature of this measure is the quantification of context stability. However, "context" needs to be defined in each instance. Neither does this measure tap into the automaticity aspect. The most prevalent instrument to date is the Self-Report Habit Index (SRHI; Verplanken & Orbell, 2003; see Box 5.2). This measure consists of 12 items, which are self-reports of the experience of repetition and automaticity. Automaticity is broken down into facets we discussed above: lack of awareness and conscious intent, the difficulty of avoiding the behavior, and mental efficiency. The measure is generic and easy to use. However, a question remains how well people are able to report on such processes. An adapted version of the SRHI, the Habit Index of Negative Thinking (HINT; Verplanken et al., 2007), is used to assess habits of thinking.

Finally, as habits reside as memory traces and manifest as automatic responses, measures that tap into implicit processes have been used to assess habit strength. One such paradigm – the slips-of-action task – capitalizes on the action slip phenomenon discussed above (e.g., de Wit et al. 2012). Participants learn that certain cues are associated with rewards and others are not. Subsequently they are being instructed that these cues lead to losses instead of rewards (a so-called outcome devaluation paradigm). In a later test phase, habit strength is indicated by the failure to avoid responding to the initially rewarding, but later devalued, cues. Implicit measures are arguably the closest one may get to a habit. On the other hand, it is often difficult to establish the validity of such measures.

Researchers nowadays thus have a choice between a number of habit measures and can select the measure that is most suitable in a particular research context. For instance, computerized tasks, such as the slips-of-action task, are more suitable in a laboratory context, while the SRHI is highly suitable for questionnaires. The different measures also tap into different aspects of a habit and may thus be selected on that basis.

Box 5.2 Zooming In: Measuring Habits Using the Self-Report Habit Index (SRHI)

The Self-Report Habit Index (Verplanken & Orbell, 2003) is a generic instrument to assess habit strength. It consists of a stem ("Behavior X is something…"), followed by 12 items. The stem can refer to any behavior. The researcher can choose to formulate this as general or specific as required and, if the researcher so wishes, may include context information (e.g., "Conducting Behavior X in Condition Y is something…"). The 12 items assess facets of habit, including the experience of repetition, lack of awareness and conscious intent, lack of control, mental efficiency, and a sense of self-identity. The items are accompanied by Likert response scales (e.g., 5 or 7 point agree/disagree scales). Items may be slightly modified in order to accommodate a specific behavior or context (e.g., the researcher has to choose a time frame in item 7).

[Behavior X] is something…

1. I do frequently.
2. I do automatically.
3. I do without having to consciously remember.
4. That makes me feel weird if I do not do it.
5. I do without thinking.
6. That would require effort not to do it.
7. That belongs to my (daily, weekly, monthly) routine.
8. I start doing before I realize I'm doing it.
9. I would find hard not to do.
10. I have no need to think about doing.
11. That's typically "me."
12. I have been doing for a long time.

After checking the internal reliability of the scale, the researcher typically averages the items into an overall habit strength score.

Perspectives on Habit Change

Almost by definition, habits are hard to change. The consequences of habituation we outlined above do not bode well for interventions that aim at behavior change through the provision of information and thus changing attitudes and intentions. If habits attenuate attention to information, and if there is no link between attitudes and intentions and behavior, such approaches bet on the wrong horse when aiming at changing strong habits.

So how does one change habits? This is of course one of those million dollar questions. Here we discuss two perspectives. The first is a "micro" level perspective and focuses on the cue-response contingencies that constitute a habit, namely, the use of implementation intentions. The second is a more "macro" perspective, which capitalizes on disruptions of the habit performance context. We will thus focus on the potential for change when contexts change, or when people change context, such as moving to a different city or location.

Using Implementation Intentions to Change Habits

If we zoom in on the mechanisms of habitual behavior, a key element in the process is when a cue triggers a habitual response. The "stickiness" of habits becomes obvious at that very moment: while bypassing our aptitude to reason and deliberate, a habit makes us act instantly and automatically. If one wishes to change habitual behavior, these cue-response moments should be a prime focus. Thus, in designing an intervention, it is of utmost importance to first analyze the habit context and identify the key cue-response occurrences which are to be broken and replaced by new, desired, responses.

One technique that has been proposed to do just that is the formation of **implementation intentions**. Implementation intentions are concrete "IF-THEN" plans, which may put an intention into action (e.g., Gollwitzer, 1999; see also Keller et al., Chap. 2). The "IFs" specify conditions in which action is required, in particular where and when to act. The "THEN" specifies the action itself. Implementation intentions have been found effective means of accomplishing goals, certainly given their simplicity (e.g., Gollwitzer & Sheeran, 2006). Implementation intentions do two important things when applied to changing habits. Firstly, they target existing cue-response links, that is, they break the existing habit. Secondly, implementation intentions specify the very cues and responses which, after successful repetitions, may form the future new habits. Implementation intentions may thus be considered as "instant habits" (e.g., Gollwitzer, 1999).

Sheina Orbell and Bas Verplanken (2010; Study 3) demonstrated that implementation intentions may be effective not only in creating new behavior but in particular instigating *automatic* responses. Participants were provided with a packet of dental floss and instructions how to use the material. They were randomly assigned to an implementation intention or control condition. In the implementation intention condition, they were instructed to write down where and when they would floss every day, such as "After I brush my teeth in the evening, I will floss in front of the bathroom mirror." Habit strength was assessed at baseline and 2 and 4 weeks later. At the end of the period, the remainder of participants' flossing material was collected and weighed, which thus provided a measure of flossing behavior. There were two important results. The first was that, in line with other implementation intention studies, having formed implementation intentions resulted in more frequent flossing, which was established by self-reported frequency and by the weight of the remaining flossing materials. Important for the present argument, an independent assessment of habit strength using the Self-Report Habit Index revealed that in the implementation intention condition, habit strength became stronger over time compared to the control condition (see Fig. 5.1).

Implementation intentions have been viewed as effective self-regulation tools. When applied to the formation of habits, the self-regulation aspect may also apply; by using implementation intentions to create new, desired, and durable

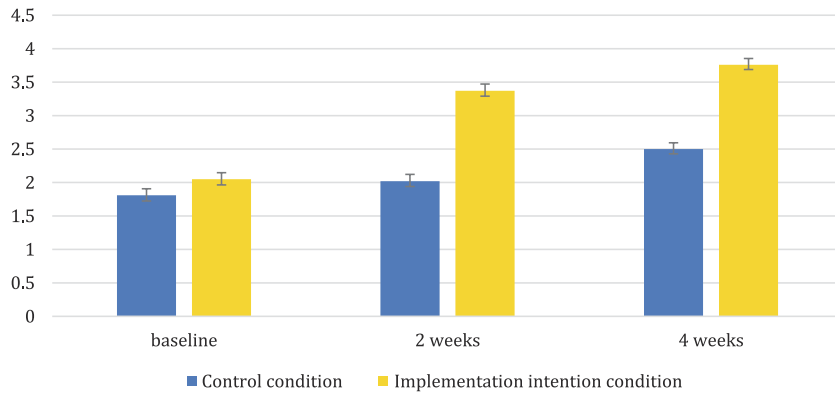

Fig. 5.1 Habit strength of flossing as a function of implementation intentions. (Note: $N = 278$; data from Orbell and Verplanken (2010). Habit strength was measured by the Self-Report Habit Index (Verplanken & Orbell, 2003). The bars present means and standard errors)

habits an individual can exert self-control in accomplishing important goals (e.g., Galla & Duckworth, 2015).

As is the case with any method, the use of implementation intentions has its limitations, especially when applied in the complex world of everyday life. In order to be effective, there are quite some conditions that need to be fulfilled (e.g., Adriaanse & Verhoeven, 2018): ensuring high motivation, formulating sufficiently specific IF-THEN plans, finding the critical cue that triggers the habit, creating strong enough IF-THEN links, and staying motivated and committed to the plan. As can be imagined, this can easily go wrong.

Habit Discontinuities

As habits are contingent on cues in the performance context, it follows that if that context changes, or individuals change context, habits are disrupted. There are many examples of such situations. Some are small or temporary, such as a strike that disrupts your commute. Others are more profound. This is particularly the case when individuals go through life course changes, such as transitions from school to work, moving house, starting a family, divorce, or retirement. Context change may also occur at larger scales, such as when companies reorganize, natural disasters strike, or an economic downturn affects people's financial resources. Whatever the scale of the disruption is, habits are likely to be affected and may no longer be feasible or useful. Or, in Kurt Lewin's (1947) terms, habits "unfreeze." What often happens is that after a while, individuals find their old habits, perhaps adapted to the new circumstances. However, disruptions also provide opportunities for habit change. Under those conditions behavior change interventions might be more effective than in default circumstances; individuals may be more sensitive to (useful) information, for instance, about available options and may be "in the mood for change." This has been discussed as the **habit discontinuity hypothesis** (e.g., see for a review, Verplanken, Roy, & Whitmarsh, 2018).

Definition Box

Implementation intentions: "IF-THEN" plans which specify where, when, and how to act.

The habit discontinuity hypothesis: Behavior change interventions are more effective if delivered when an individual's performance context changes, or the individual changes from one context to another.

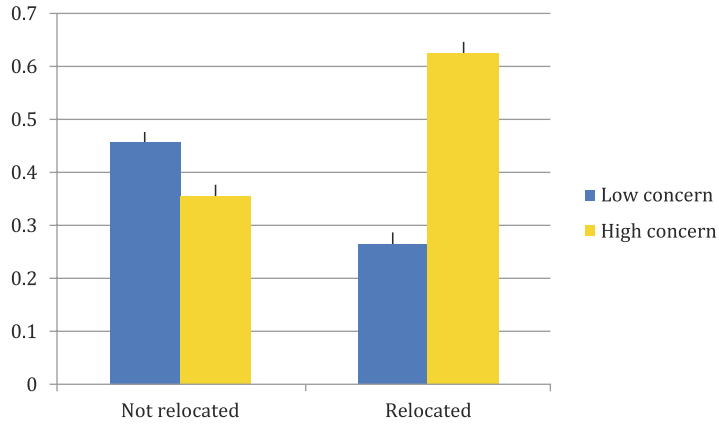

Fig. 5.2 Proportions of sustainable commuting as a function of relocation and environmental concern. (Note: $N = 433$; data from Verplanken et al. (2008); sustainable commuting was defined as any non-car use commuting. Environmental concern was measured by the New Environment Paradigm Scale (Dunlap, Van Liere, Mertig, & Emmet-Jones, 2000). The bars present means and standard errors)

A number of studies provided supporting evidence for the habit discontinuity hypothesis. For instance, Bas Verplanken, Ian Walker, Adrian Davis, and Michaela Jurasek (2008) conducted a survey among university employees and asked how they commuted to work. They also assessed their level of environmental concern. Unsurprisingly, environmentally concerned employees were less likely to commute by car than environmentally less concerned employees. However, this difference was *only* present if they had moved house in the previous year (see Fig. 5.2). This result thus suggested that a change of context (relocating) may have activated pro-environmental values, at least among those who adhered to those values, which were thus enacted in the new situation, whereas under default conditions, even environmentally concerned individuals did not turn those values into action. However, studies such as these are correlational in nature and therefore do not allow to draw causal conclusions. In the final section of this chapter, we discuss in more detail a field experimental study (Verplanken & Roy, 2016), which was able to provide some stronger evidence for the habit discontinuity hypothesis.

The principle of using habit discontinuities to "shake people up" is sometimes used by retailers. For instance, large stores and supermarkets move products around every now and then. While there may be many reasons to do so, an important motive for such changes is to disrupt customers' habits. Rather than entering the store and grabbing the products they habitually purchase, the new arrangements force customers to think and explore and expose them to parts of the store they otherwise would skip.

Box 5.3 Questions for Elaboration

Disrupt an existing habit (see, for instance, Box 5.1), and observe what this is doing to you. Answer the following questions:

1. How easy or difficult did you find disrupting the habit?
2. Did you simply stop doing it, or did you replace the habit with something new?
3. Would it be easier if something in the context or circumstances where your habit usually occurs would change?
4. Did you experience any emotions (e.g., anger, anxiety, relief, pride)?
5. Will you continue with your old habit in the future, or will you make a definite change?

Habit disruptions may teach you about your nonconscious patterns and alert you to potential new solutions or better options than your old habit provided. The least a disruption may show is how prevalent and powerful habits are in everyday life.

Some Caveats

We wish to add four caveats to the habit change issue. The first is that breaking a habit and replacing it by a new behavior does not mean the old habits are gone. The very definition of habit as a memory-based propensity suggests that while a new behavior may be performed, the memory trace of the old habit may still be intact and may only gradually decay. This was demonstrated in a study among employees of an organization that relocated their premises (Walker, Thomas, & Verplanken, 2015). A portion of these employees shifted to another commute travel mode after the relocation. Habit strength of the old mode was assessed a year and a half before the relocation, while habit strength of both the old and new mode were monitored after the relocation. These data suggested indeed that while habit strength for the new mode started to build, the old habit did not disappear abruptly, but decayed only gradually during the post-move period (see Fig. 5.3). Thus, for a certain amount of time, the presence of the old habit poses the risk of relapses, for instance, if the new behavior is blocked or if the motivation to uphold it weakens.

A second caveat is that habits may be embedded in larger routines or social practices (e.g., Kurz, Gardner, Verplanken, & Abraham, 2015). For instance, binge drinking among UK youngsters is no isolated behavior, but makes up part of a weekend leisure culture. Approaching such a behavior without taking that wider context into account is missing an important point and is thus likely to fail if behavior change is the objective. A largely unexplored field is the question how habits and social practices relate, for instance, how habits may create social practices and vice versa (e.g., Holtz, 2014).

A third caveat concerns the power of habits in creating and maintaining new behavior. Compared to the problem of breaking habits, *habit formation* has received relatively little attention to date, at least in applied areas focused on behavior change (e.g., Lally & Gardner, 2013). However, the very features that characterize habits and make them difficult to change – lack of awareness, the difficulty to avoid a habit, tunnel vision, the disconnection with intentions, and the "stickiness" of habits – are all features we would like to see new, desired, behaviors to obtain in order to become durable. Thus, habit formation, and not merely behavior change, should be a key objective in behavior change interventions (e.g., Lally, van Jaarsveld, Potts, & Wardle, 2010).

Finally, the behaviors we are interested in are often complex and consist of multiple phases and components (e.g., Phillips & Gardner, 2016). For instance, "running" involves a decision to do it, preparing your running gear, and the actual running. Each of these elements may or may not be habitual. It is thus important to identify the

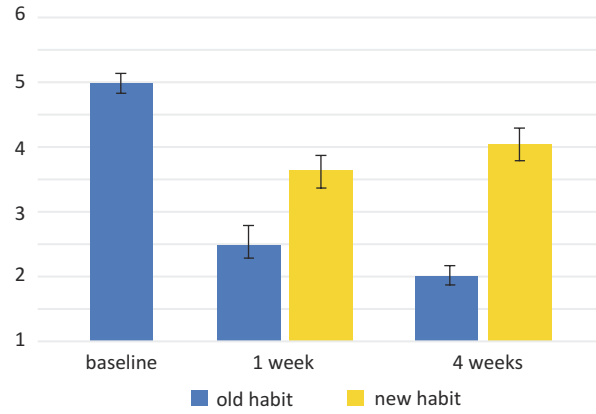

Fig. 5.3 Habit strength of old and new habits. (Note: $N = 112$; data from Walker, Thomas, and Verplanken (2015). Habit strength was measured by the Self-Report Habit Index (Verplanken & Orbell, 2003). The graph presents means and standard errors)

critical element that needs to be turned into a habit. In the running example, this probably is the *decision* to run, rather than the execution itself, as we are very good in finding excuses not to run (e.g., Verplanken & Melkevik, 2008).

Testing the *Habit Discontinuity Hypothesis* in a Field Experiment

Bas Verplanken and Deborah Roy (2016) tested the habit discontinuity hypothesis in a field experiment promoting sustainable behaviors among residents in Peterborough (UK), some of whom had recently relocated. The assumption was that relocation disrupted existing habits and opened a "window of opportunity" for more change. The hypothesis was thus tested that a behavior change intervention would be more effective among those who had relocated compared to residents who had not moved house.

The researchers liaised with an organization, the *Peterborough Environment City Trust*, who previously had developed an intervention to promote sustainable behaviors. Members of this organization were trained as research officers to collect the data and deliver a bespoke version of their intervention. Participants were cold-contacted at the doorstep. A total of 8063 contact attempts were made during the day, evenings, and weekends; 1612 individuals were at home and answered the door; 800 individuals agreed to participate in the study. Half of these were known to have moved house within the previous 6 months ("Movers"). This information was obtained through property websites and contacts with housing developers. The other half ("Non-movers") were matched to the Movers on key characteristics, such as house size, house ownership, and access to public transport. Movers and Non-movers were assigned to an intervention or no-intervention control group according to a clustered randomization procedure, through which particular areas were designated as intervention or control areas.

Data were collected at two points in time. A baseline survey was conducted upon recruitment. In the intervention condition, this survey served as the basis for a conversation about behavior change (see below). Eight weeks later participants received a second survey by mail, which constituted the post-measure. Participants received a £10.00 cash voucher and a lottery ticket for a £250.00 prize draw for submitting the second survey. A total of 521 (65%) participants completed the study.

The intervention consisted of a number of elements:

1. *Doorstep personal interview.* Upon agreement a conversation was held about behaviors participants considered to change or adopt. The research officers were trained to select any from seven possible levers in these conversations: underscore available information; highlight self-efficacy; raise awareness of environmental benefits; stress pro-environmental social norms; spell out financial benefits; promote a "green identity"; pledge to change behavior.
2. *Tailored information.* Shortly after the first survey and the doorstep interview, participants received information about the behavior(s) they had shown an interest in to change as revealed during the interview.
3. *Newsletter.* All participants received regular newsletters, which contained generic information and advice related to sustainable behaviors, as well as on current environmental and volunteering projects.
4. *Sustainable goodie bag*. Participants received a bag with free sustainability-related items, such as a cycling path map, bus time tables, a shower timer, and vegetable and flower seeds.

The main dependent variables were 25 sustainable behaviors, for instance, related to water use (e.g., taking less than 10 minutes showers), energy use (e.g., washing at 30 degrees), transportation (e.g., ecologically friendly driving), and waste (e.g., using reusable shopping bags). Self-reported frequencies were obtained for each behavior, which were averaged into a behavior index. The behaviors were thus assessed at baseline and 8 weeks later. In order to control for effects of other variables, at baseline a set of well-researched determinants of behavior were included: habit strength, intention,

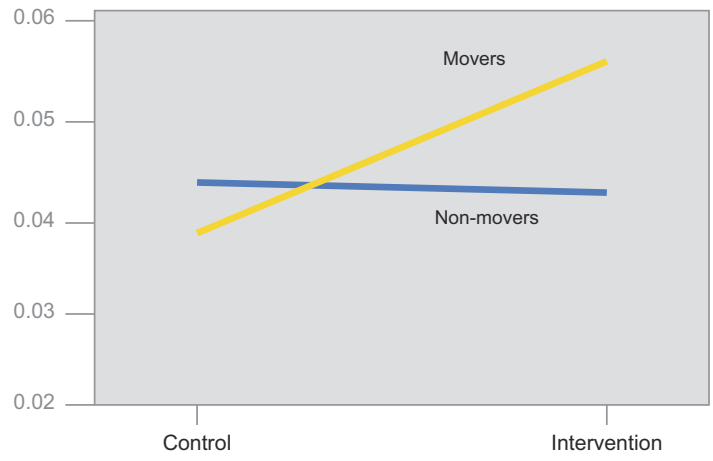

Fig. 5.4 Simple slopes representing the effect of the intervention for "Movers" and "Non-movers." (Note: $N = 521$; data from Verplanken & Roy, 2016)

perceived control, personal norms, biospheric values, and personal involvement.

Remember that rather than testing the effectiveness of an intervention, the objective was to test whether an intervention was more effective in the context of a habit discontinuity (in this case relocation) compared to default conditions. Thus, in the present study, we were interested in the interaction between relocation status (i.e., whether or not a participant had moved house) and the intervention (i.e., intervention versus control group) while controlling for all other effects (i.e., baseline behavioral frequency, demographic variables, and all determinants). This was tested in a multiple regression, where the behavioral index in the post-test was regressed on all baseline measures, relocation status, intervention, and the all-important relocation x intervention interaction. Unsurprisingly, baseline behavior and all determinants were statistically significantly correlated with post-test behavior. From these variables, in the multiple regression baseline behavior, habit strength, and personal involvement obtained a statistically significant regression weight, suggesting these variables had a unique contribution in the prediction of post-test behavior. Also, the intervention obtained a significant regression weight, which suggested it was effective. The important result was a significant relocation x intervention interaction. In Fig. 5.4 simple slopes are presented, which graphically show this interaction and suggest that the intervention was only effective among Movers.

We analyzed the data of this study in some more detail, in particular with respect to the question how long the "window of opportunity" provided by relocation would last. In other words, is there an optimal time frame for an intervention that capitalizes on a habit discontinuity? In order to investigate this, we distinguished among Movers participants who had moved within the previous 3 months versus 6 months. It thus appeared that the intervention was only effective among the former participants, thus suggesting that the "window" lasted for a period of 3 months. A word of caution is necessary though. Firstly, these effects may be highly dependent on the domain, behavior, type of sample, and type of discontinuity. Secondly, habit discontinuities may "open" a window even before the actual change takes place. For instance, in the case of moving house, the process of "unfreezing" may start already some time before the actual relocation.

A field experiment such as the one we described here has many challenges. We mention three that were poignant in the present case. The first concerns a balance between "purity" and "realism." In order to test the habit discontinuity hypothesis, ideally we would have liked to have followed a proper randomized controlled trial, that is, a random allocation of participants to both the intervention and relocation conditions. As mentioned above, we employed a clustered randomized procedure: the intervention versus no-intervention conditions were assigned on the basis of geographic area. This was done in order

to prevent neighbors in different conditions talking to each other. As far as relocation was concerned, for obvious reasons "moving house" cannot be randomly allocated; the best we could do was to match participants on key criteria. Thus, in order to deal with the reality of this context, we had to accept losing some rigor with respect to the design and thus to making causal claims.

A second challenge was to protect the quality of the data. Field studies can easily become "messy," as researchers do not work under controlled conditions such as can be accomplished in the laboratory. Unexpected things may happen during data multiple research officers, collection or between pre- and post-tests. Also, as we worked with multiple research officers, the data collection and interview procedures were standardized and well-trained.

Finally, the key result was a statistically significant relocation x intervention interaction. However, the effect size was small. There were a number of possible reasons for that. Firstly, habit discontinuity effects may be small, and as the dependent variable was controlled for all major determinants, this may have left little variance to be accounted for. Secondly, while the behavioral index was composed of 25 behaviors, most participants probably made changes in only a few of those. The study thus provided a very conservative test. Finally, as discussed above, field studies may produce much "noise" in the data. Nevertheless, the effect we found was statistically significant and important as "proof of concept."

Conclusion

The habit concept has two faces. On the one hand, we struggle with what we may consider as "bad" habits, the things we know are unhelpful or unhealthy but difficult to change. But from an evolutionary point of view, our cognitive architecture made us creatures of habit for good reasons: habits enable us to avoid spending valuable mental resources to trivial decisions. Also, if we manage to turn "good" behavior into habits, this may help to establish and maintain a better and healthier life. In any case, habits are interesting and are worth a prominent place on the rich pallet of themes in psychology.

Summary

- Habits are memory-based propensities to respond automatically to specific cues, which are acquired by the repetition of cue-specific behaviors in stable contexts.
- Habituation may lead to "tunnel vision," that is, a lack of attention to or interest in information about the habit or the habit performance context.
- Habituation shifts control over behavior from "willpower" to the contextual cues which trigger the habit.
- Habits are "sticky": even if one chooses to act differently, a habit may easily take over, such as in the form of "action slips."
- Habit strength has been measured by means of observation, self-reports, and implicit measures. The Self-Report Habit Index (SRHI) is a prevalent generic 12-item self-report instrument to measure habit strength. The Habit Index of Negative Thinking (HINT) is a variant to measure habits of thinking.
- Implementation intentions – "IF-THEN" plans which specify where, when, and how to act – can be used to break old habit cue-response associations and build new ones.
- The habit discontinuity hypothesis states that behavior change interventions are more effective if delivered when an individual's performance context changes or the individual changes from one context to another.

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Reactance Theory

6

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Contents

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Introduction

In summer 2016, a debate over Muslim women's beachwear, known as burkini – a swimwear with body and head coverings – popped up in France. As a result, three cities restricted women to wear a burkini at the beach. The restriction of these women's freedom to wear a burkini caused mixed reactions, but one was the "wear what you want" initiative which also spread on social media picturing Muslim and non-Muslim women with and without burkinis and holding up signs with "wear what you want" (see Fig. 6.1).

This example illustrates how people often react to threats to their own or another person's freedom. They fight against it urging the threatening agents – in this case the politicians – to remove the threat and, thus, restore freedom. The impulse to fight back to freedom restrictions results from the experience of a motivational state called psychological **reactance**. It is characterized by a strong desire to restore and secure the threatened freedom and actual attempts to do so (Brehm, 1966; Brehm & Brehm, 1981).

However, reactance does not emerge in every freedom-threatening situation. Importantly, only when people view themselves as possessing certain free behaviors and when they perceive a threat to those behaviors, reactance emerges. Moreover, people's free behaviors are not only associated with certain expectation but often are

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Fig. 6.1 "Wear what you want" demonstration in London. (Photography by T. Akmen, Anadolu Agency, Getty Images; retrieved from https://www.vox.com/2016/8/25/12644846/burkini-ban-sexism-women-clothing-illustration-muslim-france)

also connected to own values and attitudes. Thus, free behaviors constitute aspects of people's self. Reactance aims at restoring freedom by shedding light on those aspects. The experience of reactance therefore leads people to reflect on who they are and what is important to them. Being able to act in accordance with one's self, for example, by expressing one's own opinion, is related to people's identity. It makes them aware of what is important to them, that they are the origin of their actions, and that they are able to act in accordance with their self. Thereby, people experience a sense of autonomy (Deci & Ryan, 1985; Deci & Ryan, 2000; see also Roth, Ch. 3 this volume).

Considering that reactance is not just a simple resistance against social influence attempts helps us to understand why the burkini example triggers reactions that go beyond the simple question of what clothes are allowed to wear. Freedom threats do not only lead to resistance but also to questions about oneself, one's group, and society, about who we are, and whether one can live in accordance with own values and attitudes.

The current chapter summarizes psychological reactance theory (Brehm, 1966) which can explain why people sometimes "fight back," meaning that they do the opposite of what they are supposed to do or resist the social influence of others. Most importantly, it elaborates on the value of reactance by explaining how reactance connects to the self and own important values.

Definition Box

Reactance: Reactance results from a (perceived) threat to freedom. It is "a motivational state directed toward the re-establishment of the threatened or eliminated freedom, and it should manifest itself in increased desire to engage in the relevant behavior and actual attempts to engage in it" (Brehm, 1966, p. 15f).

Reactance Theory

Freedom and Threat to Freedom

Reactance theory (Brehm, 1966; Brehm & Brehm, 1981; for an overview, see Miron & Brehm, 2006; Steindl, Jonas, Sittenthaler, Traut-Mattausch, & Greenberg, 2015) describes what is happening within individuals when they perceive a threat to their freedom. For Brehm, freedom meant "…an individual's belief that he or she can engage in a particular behavior. The freedom can pertain to what one does, how one does it, or when one does it…" (Brehm & Brehm, 1981, p. 358). We all expect that we possess certain freedoms, meaning that we can choose between performing and not performing a certain behavior (Brehm & Brehm, 1981). Yet, in many situations in our lives, where we initially believed to be free, we suddenly experience that we are not free. For instance, citizens believe to be free in voting for the political party they prefer, but politicians try to manipulate them to vote for their platform; employees believe to be free in wearing what they want at work, but the company requires them to show up in business look; children believe to be free in choosing their field of study, but parents pressure them to study medicine; or women believe to be free in wearing what they want at public beaches, but a new law forbids them to wear a burkini. We perceive these situations as threats to our freedom when we cannot act as desired, when we feel that "some event has increased the difficulty of exercising the freedom in question" (Brehm & Brehm, 1981, p. 35). Consequently, something inside us generates the impulse to fight back. This "something" is what we call psychological reactance. Reactance is a motivational state which serves as a motivator to restore or secure the threatened freedom (Brehm, 1966; Brehm & Brehm, 1981). It is a theoretical construct manifested in an increased subjective desire to exercise the threatened freedom – *reactance motivation* – and actual behavioral attempts to do so, *reactance striving* (Brehm, 1966; Brehm & Brehm, 1981; Wright, Agatarap, & Mlynski, 2015). Thus, the term "reactance" means both, the subjective and behavioral reactions.

Reactance Motivation

Reactance is always accompanied by subjective responses, such as the experience of emotion. People feel uncomfortable, hostile, aggressive, and angry (Berkowitz, 1973; Brehm, 1966; Brehm & Brehm, 1981; Dillard & Shen, 2005; Rains, 2013). Another subjective reaction is a change in the attractiveness of the threatened or imposed outcome. People upgrade the restricted option or downgrade the imposed option (e.g., Bijvank, Konijn, Bushman, & Roelofsma, 2009; Brehm, 1966; Brehm & Brehm, 1981; Bushman & Stack, 1996; Dillard & Shen, 2005). In a classic experiment by Brehm, Stires, Sensenig, and Shaban (1966), participants listened to four records and rated how well they liked each of them. They were made to believe that they could choose one of the records as a gift but then learned that one of the records was unavailable. Results revealed that in a second rating, this record increased in its attractiveness. Brehm also mentions that people who are threatened in their freedom become aware of what they really want. They know their desires and goals and feel that they are their own director of behavior (increased self-direction; Brehm, 1966; Brehm & Brehm, 1981). Thus, banning the burkini from beaches would lead some women to feel angry, to upgrade the burkini in its attractiveness, and to realize that the freedom to wear what they want is indeed highly important to them.

Reactance Striving

Reactance striving can be manifested in exercising the threatened freedom (direct restoration), exercising a related behavior or observing others exercising the threatened freedom (indirect restoration), aggressively forcing the threatening agent to remove the threat, or just letting off steam by reacting in an aggressive way (aggression) (Brehm, 1966; Brehm & Brehm, 1981). For example, forbidding teenagers to go out can lead to the exact opposite behavior (i.e., going out in secret). This is also known as the *boomerang effect* and is the direct restoration of freedom

(Brehm, 1966). Not going out but performing a related and also forbidden behavior (e.g., smoking) would be the indirect restoration of freedom, and shouting at and insulting their parents to get what they want would be the aggressive form of reactance striving. Thus, reactance striving is the visible reaction to freedom threats. But what exactly is reactance motivation itself, can we "see" it, and how can it be assessed?

Box 6.1 Questions for Elaboration

Think about examples in your life where you believed that you are free but then were restricted in this freedom. Did you experience reactance? How did you react? What were your subjective and behavioral reactions?

What Is Reactance Motivation: Catching the State

Although Brehm stated that reactance is "an intervening, hypothetical variable" that cannot be measured directly (Brehm & Brehm, 1981, p. 37), studies tried to catch reactance motivation with different instruments such as self-report measures and physiological or neuropsychological measures.

Self-Report Measures

Some studies have investigated reactance in the context of persuasion (Dillard & Shen, 2005; Kim, Levine, & Allen, 2013; Rains, 2013), as persuasive messages often pose freedom threats to people. Here, reactance has been conceptualized as a composite of self-reported anger (e.g., irritated, annoyed) and negative cognition in the form of counterarguments. For example, in Dillard and Shen's study (2005), a persuasive message, such as "Flossing: It's easy. Do it because you have to!" (p. 152), led to a negative attitude toward flossing. This relationship could be explained via people's experienced reactance which consisted of anger and negative cognitions. The negative attitude further predicted people's behavioral intention not to floss.

Beyond the context of persuasion, studies view people's reactance consisting of their self-reported experience of reactance (e.g., perception of freedom threat), their aggressive behavioral intentions toward the threatening agent (e.g., ruin his/her reputation), and their negative evaluations of the threatening agent (e.g., believing that he/she takes advantage of other people) (Salzburg State Reactance Scale; SSR Scale; Sittenthaler, Traut-Mattausch, Steindl, & Jonas, 2015). In these studies, people's experience of reactance is conceptualized as a combination of a perceived threat to their freedom (e.g., "How restricted would you feel in your freedom of choice?") and their emotional experience (e.g., "How irritated would you feel?"). This conceptualization has been used in reactance studies investigating change situations such as political reforms, culture, and vicarious reactance and has been shown to explain why people react with resistance or with a negative attitude to restrictions (Sittenthaler & Jonas, 2012; Sittenthaler, Traut-Mattausch, & Jonas, 2015; Traut-Mattausch, Guter, Zanna, Jonas, & Frey, 2011; Traut-Mattausch, Jonas, Förg, Frey, & Heinemann, 2008).

Physiological and Neuropsychological Measures

Guided by Brehm (1966), who noted that reactance should be accompanied by physiological arousal, research assessed people's heart rate following a freedom threat. Results depicted that when people experienced a freedom threat by imagining being restricted from renting a flat, their heart rate increased immediately (Sittenthaler, Jonas, & Traut-Mattausch, 2016, see Box 6.2; Sittenthaler, Steindl, & Jonas, 2015).

Research has also considered neuropsychological parameters to directly measure reactance

motivation. By using electroencephalography (EEG), Mühlberger, Klackl, Sittenthaler, and Jonas (2018) tried to more accurately capture the specific kind of motivation that reactance stimulates. They looked at a specific indicator of motivation, namely, left frontal cortical activity. This parameter has been found to relate to approach motivation (e.g., Harmon-Jones, 2003, 2004; Harmon-Jones & Allen, 1998) – a motivation where people are energized to move toward something (Harmon-Jones, Harmon-Jones, & Price, 2013; see also Sassenberg & Vliek, Chap. 4 this volume). In this research, inducing reactance in various ways (e.g., imagining being restricted from renting an apartment, remembering own experienced past restrictions, being commanded to draw specific shapes) stimulated immediate relative left frontal activity. This finding underlines Brehm's original definition of reactance as a highly motivational construct by which people are highly motivated to approach the reestablishment of their freedom. Moreover, the neural processes depict that this motivation arises immediately after the threat.

In summary, reactance motivation can be captured by using self-report measures and more directly by physiological and neuropsychological measures. Those measures found that it is a state consisting of a person's experienced threat, his or her emotional experience (e.g., anger), cognitive processes (e.g., negative attitude), and changes in physiological arousal and brain activity.

The Determinants of Reactance

Expectation of Freedom, Importance of Freedom, and Extent of Threat

Reactance does not always emerge when people's free behaviors are threatened. Its emergence depends on people's *initial expectation* to possess the freedom in question. Thus, reactance emerges only when people believe they possess a specific freedom, i.e., they know they have the freedom to do something and feel they are capable of enacting the behavior. Reactance also varies in its magnitude which depends on the *subjective importance* of the freedom (the more important the free behavior, the more reactance will be aroused) and the *perceived extent* of the threat (the more freedoms threatened, the more reactance will be aroused) (Brehm, 1966; Brehm & Brehm, 1981; Wright et al., 2015). In our example, if women are confident to possess the freedom to wear whatever they want at the beach, if the freedom to wear what they want is in general very important to them, and if they perceived the restriction as highly threatening, reactance motivation would be very strong.

Belief in Ability to Restore Freedom

Once reactance has been aroused, it provides people with the motivation to fight against the threat and restore their freedom. As such it is an adaptive reaction to freedom threats because when people experience reactance, they feel that they are able to fight for their freedom. Without it, they would accept the restriction. Thus, it is the opposite of learned helplessness (Seligman, 1975) where people do not believe in their ability to alter the unpleasant situation. Helpless people are rather passive, accept the situation as it is, or even withdraw from it (Mikulincer, 1988; Pittman & Pittman, 1979; Seligman, 1975; Wortman & Brehm, 1975). When people experience reactance, they feel capable of altering the situation and restoring their freedom (Brehm & Self, 1989; Wortman & Brehm, 1975; Wright et al., 2015; Wright & Brehm, 1989). Despite the unpleasant situation, they feel in charge of the situation, and they are highly motivated to do something about it. This becomes obvious in a study by Kray, Reb, Galinsky, and Thompson (2004). They hypothesized that reactance also emerges when people perceive a limitation to their ability to perform well in a task. In their study, they threatened women's ability to perform by making them aware of the stereotype that men are better at negotiating than women. As a result, women reacted against this stereotype by achieving better negotiating outcomes than men.

However, this so-called stereotype reactance only occurred for women when they possessed sufficient power to act against the stereotype. When they did not have sufficient power, they followed the stereotype by performing worse than men. This is in accordance with the assumption that reactance only emerges when people feel capable of altering the current situation.

Vicarious Reactance and the Self

How people respond to freedom threats strongly depends on whether the threat affects important aspects of their self. This becomes apparent in research on vicarious reactance (i.e., reactance in response to freedom threats experienced by others). We can also experience reactance when others' freedom is challenged. For instance, people who observed or read about a freedom threat happening to another person also indicated strong reactance (Andreoli, Worchel, & Folger, 1974; Sittenthaler et al., 2016; Sittenthaler & Jonas, 2012; Sittenthaler, Traut-Mattausch, & Jonas, 2015). Think of the burkini example. Although the ban affected only women who usually wear a burkini, women all over the world wearing or not wearing a burkini at the beach engaged in the "wear what you want" discussion. Research has shown that both kinds of freedom threats (self-experienced and vicarious) lead people to experience reactance, but whether people react more to a self-experienced or to a vicariously experienced threat depends on how they define their self and whether the threat affects important aspects of their self.

A factor shaping people's self is their cultural background. People from individualistic cultures, such as America and Western Europe, define their self by emphasizing their individuality and independence from others (Markus & Kitayama, 1991). People from collectivistic cultures, such as Asia, Africa, Latin America, or Southern Europe, define their self in relationships and commonalities with others (Markus & Kitayama, 1991). A number of studies (Jonas et al., 2009; Sittenthaler & Jonas, 2012; Sittenthaler, Traut-Mattausch, & Jonas, 2015; Steindl & Jonas, 2012) found that people with an independent self-concept experienced more reactance when their individual, personal freedom was threatened, while people with an interdependent self-concept experienced more reactance when a collective freedom or another person was threatened. Thus, compared to people with an independent self-concept, people with an interdependent self-construal experience more vicarious reactance.

People experience both self-experienced and vicarious reactance, but the processes underlying them differ – a freedom threat happening to oneself seems to evoke reactions that are more impulsive in nature, and a freedom threat happening to another person seems to evoke reactions that are more reflective in nature. This becomes apparent in people's physiological and emotional-cognitive responses: while people who were restricted themselves showed an immediate change in heart rate and more emotional thoughts (e.g., annoyed, excited), people who were vicariously restricted showed a delayed change in heart rate and more cognitive thoughts (e.g., reasons for freedom restriction; Sittenthaler et al., 2016; for details see Box 6.2).

In summary, reactance emerges when people believe they possess the freedom that is threatened, when this freedom is important to them, when the perceived extent of the freedom threat is high, and when they feel capable of restoring their freedom. Whether reactance emerges or not also depends on people's self, which contains important values, interests, and goals. This can explain why observing another person being threatened in his or her freedom can also elicit reactance.

Box 6.2 Zooming In: Study on Vicarious Reactance

Sittenthaler et al. (2016) proposed a process model to explain the mechanisms underlying self- and vicarious reactance. They hypothesized that a freedom threat affecting a person directly (self-restriction) should result in a spontaneous physiological reaction. In contrast, observing another person being threatened (vicarious restriction) should result in a delayed physiological reaction because people first need to reflect on the situation as they do not experience it themselves. They tested this idea in a study on 129 students (Study 2) who came to the laboratory and were attached sensors to measure skin conductance (SC) and heart rate (HR). First, there was a 3-minute baseline measure. Next, participants read a scenario in which a student attempted to rent an apartment. For 3 minutes, they either imagined a self-restriction, a vicarious restriction, or a neutral situation. In the self-restriction, the student called the landlord about an appointment for viewing the apartment. When the landlord learned that he was talking to a student, he said "No, you are a student, you won't get this apartment" and broke off the call. In the vicarious restriction, participants were asked to think about a former classmate who experienced the situation. Participants in the control condition were asked to imagine that they could rent the apartment. Finally, participants answered items assessing their reactance (e.g., "To what extent do you perceive the reaction of the landlord as a restriction of freedom?"). These items revealed that participants in the self- as well as the vicarious restriction condition showed higher values than participants in the control condition, indicating that the mere observance of a person being restricted resulted in self-reported reactance. However, the main dependent variable was the differences between participants' HR during imagining the scenario and during the baseline (immediate response), and their HR during answering the reactance items and during the baseline (delayed response) served as the main dependent variables. Importantly, the physiological results revealed that compared to the vicarious and the control condition, participants in the self-restriction showed the highest HR for the immediate response. The vicarious restriction condition showed a higher HR for the delayed than for the immediate response. These findings suggest that different processes underlie self-experienced vs. vicarious restrictions: self-restrictions result in an immediate physiological arousal and, thus, a more impulsive process, whereas vicarious restrictions result in a delayed physiological arousal and, thus, a more reflective process (Fig. 6.2).

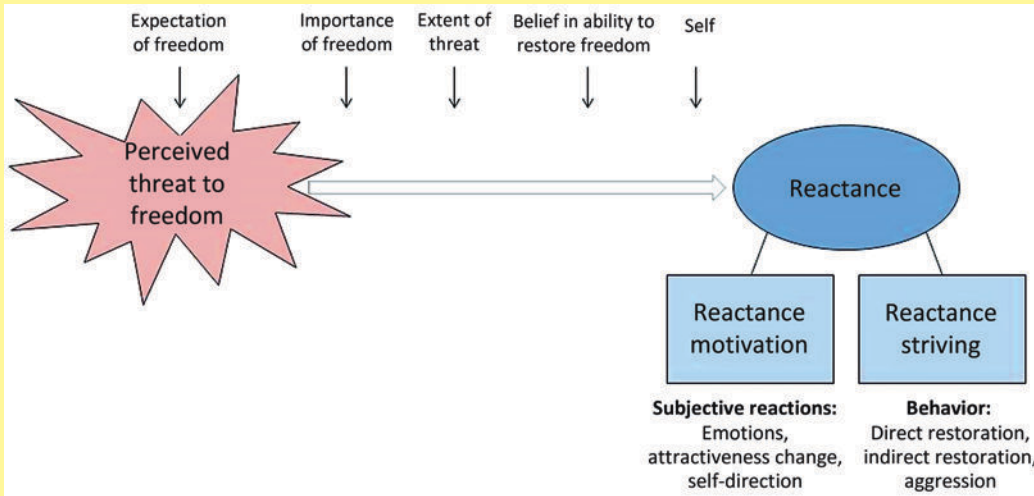

Fig. 6.2 Summary of central antecedents and consequences of psychological reactance

Reactance, What for?: Applications

Building on the inception of reactance theory where Brehm emphasized that reactance is a highly motivational construct, with this section, we aim to demonstrate the value of reactance. Brehm noted that "reactance is defined not simply as an unpleasant tension […] but rather a motivational state with a specific direction, namely, the recovery of freedom" (Brehm, 1966, p. 11). With its "energizing and behavior-directing properties" (Brehm & Brehm, 1981, p. 98), reactance gives people the energy to resist what they do not want and turn to what they indeed want. Thereby people resist social influence when it is too strong. According to Dickenberger and Gniech (1982), social influence attempts at first result in conformity motivation (i.e., people adjust to the influence). As the social influence attempt gets stronger, conformity increases up to the point where the person perceives the influence attempt as freedom-threatening. Then a second motivation emerges – reactance – which is manifested in resistance to the influence attempt. The more freedom-threatening the person experiences the influence, the more reactance people experience. A field study by Heilman (1976) shows that people's resistance increases with an increased intensity of the influence attempt (see detailed description of the study below). Such resistance behavior also becomes evident in a large body of research on *persuasion* as persuasive attempts often elicit some reactance.

Persuasion Research

Non-smoking messages, clinical advice, dietary restrictions, or mandatory policies to mitigate environmental problems stimulate reactance and increase the non-desired behavior. For example, a study by Ungar, Sieverding, Schweizer, and Stadnitski (2015) showed that people who were given an intervention to eat five portions of fruit and vegetables per day showed high reactance immediately after and still 1 week after the intervention. This reactance negatively influenced people's attitude toward eating five portions of fruit and vegetables which predicted a lower consumption of fruit and vegetables even 4 months later. Similarly, forcing people to give up smoking can have the opposite effect (Erceg-Hurn & Steed, 2011; Grandpre, Alvaro, Burgoon, Miller, & Hall, 2003; Shoham, Trost, & Rohrbaugh, 2004). These studies show that even small interventions can evoke reactance and consequently miss their well-intentioned recommendations.

Persuasion attempts also lead to the opposite effects in relationships. Prohibiting the partner to drink or smoke can trigger reactance and consequently be counterproductive (Shoham et al., 2004). Similarly, preventing one's partner from attending to attractive alternative partners can make those alternatives even more attractive. DeWall, Maner, Deckman, and Rouby (2011) showed that implicitly limiting participants' attention to attractive pictures of the other sex results in lower satisfaction with and commitment to their actual relationship and an increased positive attitude toward infidelity. Thus, the communication and behavior in romantic relationships can benefit from studies on relationship reactance.

Reduction of Reactance

In the above examples, reactance is something undesirable that people who design interventions or try to persuade others strive to reduce. Thus, research has tested methods to reduce or eliminate reactance. For example, taking the perspective of the threatening agent to think about reasons for the threat (Steindl & Jonas, 2012), helping people realize that they are free to decide for themselves (Bessarabova, Fink, & Turner, 2013; Miller et al., 2007), or forewarning them of a potential freedom threat (Richards & Banas, 2015) can reduce or prevent reactance.

A method to achieve public acceptance of mandatory actions was tested in a study by Uhl-Hädicke, Klackl, Mühlberger, and Jonas (2018). In this study, reactance was evoked by informing students that they were obligated to participate in mandatory actions to improve the university,

most aimed at protecting the environment (e.g., collecting plastic bottles at the university). When they watched a movie about the pollution of the sea by plastic garbage, participants evaluated the mandatory actions to help in protecting the environment more positively when they imagined themselves in the position of an individual suffering from the situation than when they imagined the individual suffering from the situation.

Box 6.3 Questions for Elaboration

Imagine that you are a politician trying to convince people of a new highway regulation that forces drivers to adhere to a speed limit of 80 km/h although it has always been 100 km/h. How would you handle it? What could you do to prevent reactance?

For people who try to convince others, reactance is undesirable. However, for those who experience reactance, it might be something desirable. The arising reactance can support people in fighting for their values and desires (i.e., for their identity). As such, reactance can not only be dismissed as something negative but rather as a construct possessing a massive motivational force which makes people become clear about important aspects of their *self* and which provides them with energy to fight for those aspects. In the next section, we elaborate on these ideas.

The Motivational Force of Reactance: Self-Direction

For recommendations that aim at increasing people's health, most would agree that reactance is something undesirable that should be prevented. However, there are situations where reactance is considered something desirable and is even made use of. In paradoxical interventions, behavior change is attempted by using directives that discourage from it (for an overview, see Miron & Brehm, 2006). For instance, in a study attempting to reduce procrastination (Shoham-Salomon, Avner, & Neeman, 1989), students were told to concentrate on producing procrastination (e.g., sitting in front of the study material but resist studying). Those students high on initial reactance increased their effective study time more than those low on initial reactance. Thus, encouraging reactance arousal may sometimes lead to the opposite effect. Looking at the findings in a different light, the emerging reactance might have supported students in returning to what they actually wanted, namely, studying. Brehm calls that increased *self-direction* (Brehm, 1966; Brehm & Brehm, 1981). A person experiencing reactance "will feel that he can do what he wants, that he does not have to do what he doesn't want, and that at least in regard to the freedom in question, he is the sole director of his own behavior" (Brehm, 1966, p. 9). It makes people realize what they want; they become aware of their priorities.

This increased self-direction was also demonstrated in a study by De Lemus, Bukowski, Spears, and Telga (2015). They found that women who were confronted with stereotypes contradicting their social identity seemed to be threatened in their freedom and consequently showed reactant responses – traditional women supported a gender-specific system even more when they were confronted with examples of less traditional (counter-stereotypic) women than when they were confronted with examples of traditional (stereotypic) women. In this example, reactance may have provided those women with the motivation to defend their self containing own important values, attitudes, and interests. Moreover, think back of the burkini example in the beginning. Here, reactance might have provided women with the motivation to fight against the ban. Without reactance, they might have given up and accepted the situation as it is. In line with that, reactance is associated not just with negative affect, such as feeling angry or uncomfortable, but even with activating positive affect, such as feeling strong and determined (Sittenthaler, Steindl et al., 2015). The consequences of such positive affect have been shown in research on reactance and information search (for a summary, see Mühlberger, Jonas, & Sittenthaler, 2017). In two studies, restricted participants who felt

strong and determined behaved in a more open-minded way – they did not further stick to the restricted freedom but were interested in alternatives serving their overarching goal which had been blocked by the threat.

Autonomy

Becoming aware of one's self and acting in accordance with it resembles the concept of autonomy as defined within Self-Determination Theory (SDT; Deci & Ryan, 1985; Ryan & Deci, 2000; see Roth, Chap. 3 this volume). Autonomy is a basic psychological need and best described as a person's desire to be self-governed. People are considered autonomous when they experience themselves as the origin of their actions and behave in accordance with their self (Deci & Ryan, 1985; Deci & Ryan, 2000). This description of autonomy has been called *reflective autonomy* (Koestner & Losier, 1996). Researchers differentiate it from *reactive autonomy* where people resist coercion just to be independent and free from others and which has been equated with reactance (Koestner & Losier, 1996). Although freedom threats trigger reactance in the form of a reactive autonomy, following Brehm's (Brehm & Brehm, 1981) statement that through reactance it becomes clear what we want, some freedom threats may also trigger reflective autonomy. People desire to be autonomous – they want to be their own director of behavior and to behave in accordance with their self. To follow this desire, behaving freely is important. When freedom threats block the desire to be autonomous, it becomes even more important for us to know who we are, what we want, and what we do not want.

Leander et al. (2016) follow this idea and note that reactance is not just a reflex but rather an opportunity to enhance one's autonomy by having the freedom to choose between engaging and not engaging in the prohibited behavior. They showed that individuals did not simply react against every influence but reacted against influence when they could infer that they thereby received autonomy. The authors conclude that the superordinate goal served by reactance is autonomy and not just any kind of freedom restoration. Therefore, some freedom threats may stimulate autonomy, especially those threatening important aspects of one's self. Evidence that people only show reactance to self-relevant threats comes from Laurin, Kay, and Fitzsimons (2012). They investigated under which conditions people accept a freedom restriction and under which they resist it. They hypothesized that when a restriction is absolute, people attach less importance to the freedom and, thus, rationalize it. In contrast, when the restriction is not absolute but there is a chance that it will not come into effect, people attach more importance to the freedom and, thus, show reactance. Moreover, rationalization and reactance should only emerge when people view the restriction as self-relevant. They argued that people "should feel no motivation to protect rights that they do not exercise, nor to adapt to new restrictions that do not affect them" (Laurin et al., 2012, p. 206). In two studies, participants read about dangerous riding situations (high speed in cities, cell phone use while driving). In addition, some participants read about a new law that would restrict people in their driving habits (reduced speed limits, cell phone ban while driving). This law was described as definite (absolute condition) or as coming into effect only if enough government officials agreed (non-absolute condition). A control group did not receive any information on implementing the law. Results indicated that people who read about an absolute restriction reported a more positive attitude toward the new law than the control group (rationalization) and those who read about a non-absolute restriction reported a less positive attitude toward the new law than the control group (reactance). Both effects were strongest when the restriction was self-relevant, for example, when people were frequent drivers.

Summarized, people do not reflexively show reactance to any kind of freedom threat but only to self-relevant threats and thereby may receive autonomy. Whether autonomy is indeed the superordinate goal of reactance is an open question that remains to be tested.

Box 6.4 Question for Elaboration

Think of examples where reactance may be something desirable. Did you experience such situations yourself?

Despite a host of studies, reactance has often been investigated in the laboratory where people had to imagine freedom-threatening situations and had to self-report their experienced reactance and intended behavior. Only a few studies explored reactance beyond the laboratory. One example for a field study is presented in the next section.

The Effect of the Intensity of the Social Influence Attempt on People's Reactance Striving: A Field Study

A field study by Heilman (1976) investigated the behavioral dynamics of reactance and predicted that people's resistance to an influence attempt (reactance striving) increases with the intensity of the influence attempt. Moreover, the author predicted that under certain conditions, i.e., when the threatening agent has the power to implement retaliation for noncompliance, resistance behavior is reduced. These hypotheses were tested in two experiments in which pedestrians were intercepted in front of a supermarket in New York City. The experimenter explained that she was collecting signatures for a petition advocating price controls for meats and vegetables. She showed pedestrians a clipboard with the petition and an index card which contained the experimental induction. The card contained either a low-pressure influence attempt ("Raymond T. Finster… has spoken out against this resolution and claims that it would endanger the economy"), a high-pressure influence attempt (adding that Mr. Finster "…has said that people absolutely should not be allowed to distribute or sign such petitions"), or an additional retaliation threat added to the high-pressure influence attempt ("He also said that careful note will be taken of all who do sign"). In Experiment 1 ($N = 360$), Mr. Finster was either described as a local official (low-power authority) or a top-level federal official (high-power authority). Thus, Experiment 1 was based on a 3 (low pressure vs. high pressure vs. high pressure and retaliation) × 2 (low power vs. high power) between-subjects design with 60 participants for each of the 6 experimental conditions. Participants were randomly assigned to one condition. Based on reactance theory, the author predicted that an increase in pressure not to sign the petition results in an increased signing. When the agent threatens people by retaliation for signing, signing should increase but only when the agent is presented as possessing low power. When the agent is presented as possessing high power and, thus, is able to implement retaliation, signing should decrease.

In line with the hypotheses, the higher the pressure not to sign the petition, the more participants signed it. However, these results occurred only when participants were reading statements from a low-power authority. When they were reading statements from a high-power authority, more participants signed the petition in the high- than in the low-pressure condition, but fewer participants signed the petition in the retaliation than in the low- or high-pressure condition (Table 6.1).

In Experiment 1, the agent's capability to retaliate was manipulated by presenting him as

Table 6.1 Percentage of people signing the petition in Experiment 1 (also see Heilman, 1976)

	Influence attempt				
	Low pressure	High pressure		High pressure and retaliation	
Power of authority	Percentage	Percentage	*p*	Percentage	*p*
Low power	52	72	<0.05	88	<0.05
High power	57	77	<0.05	18	<0.05

Note: p is the significance indicator for comparing the respective condition with the low-pressure condition

Table 6.2 Percentage of people signing the petition in Experiment 2 (also see Heilman, 1976)

	Influence attempt				
	Low pressure	High pressure		High pressure and retaliation	
Anonymity of participant	Percentage	Percentage	*p*	Percentage	*p*
Nonanonymous	62	84	<0.05	30	<0.05
Anonymous	78	84	>0.05	88	>0.05

Note: p is the significance indicator for comparing the respective condition with the low-pressure condition

possessing high power. In Experiment 2 (N = 300), the author predicted that the agent would be perceived as being capable to retaliate only when the participant's identity was known. Thus, Experiment 2 was based on a 3 (low pressure vs. high pressure vs. high pressure and retaliation) × 2 (non-anonymous vs. anonymous) between-subjects design with 50 participants for each of the 6 experimental conditions. Participants received the index card containing the low-pressure, high-pressure, or high-pressure and retaliation information, but Mr. Finster was always described as a top-level federal official (high power). As a second condition, the author varied whether participants could remain anonymous. One half of the participants was required to sign the petition (non-anonymous; same condition as "high power" in Experiment 1), and the other half was told that their signature was not necessary but that they should vaguely indicate where they lived (anonymous). Participants were randomly assigned to one condition.

The results showed the same pattern as Experiment 1 for the non-anonymous condition – more participants signed the petition when the social influence attempt increased from low to high pressure. When there was a retaliation threat, fewer participants signed. When people could remain anonymous, people's signing rate was high in all three conditions (Table 6.2).

The findings by Heilman (1976) provide support for the hypothesis that reactance striving plays a key role when people are externally pressured to refrain from doing something. They seem to do the opposite of what they are told, which is also known as the boomerang effect. The two experiments are carefully conducted field studies with a well-structured procedure and the measure of actual behavior. Furthermore, in a pilot work, an issue which was important and believable for the population of New York City was selected, and randomizing the materials beforehand made the experimenter blind to the experimental condition. Although field experiments are able to observe real behavior, they often cannot explore the underlying mechanisms for the behavior. Consequently, we do not know whether reactance motivation, i.e., the increased desire to engage in the relevant behavior, is indeed the underlying mechanism leading to the boomerang effect. For testing such mediating variables, a self-report measure assessing, for example, anger and counterarguments (Dillard & Shen, 2005) or experience of reactance (SSR Scale; Sittenthaler, Traut-Mattausch, Steindl et al., 2015) could have been handed to participants after signing the petition.

Summarized, the findings of the study indicate important implications for real-life situations. They underline that social influence attempts and especially the way in which we communicate can lead to the opposite of what we aimed at. This is supported by a number of reactance studies (e.g., Dillard & Shen, 2005; Erceg-Hurn & Steed, 2011; Grandpre et al., 2003; Shoham et al., 2004; Ungar et al., 2015) which also report actual or intended boomerang effects. At the same time, the study points at boundary conditions of reactance. An agent's power to implement retaliation for noncompliance seems to counteract reactance motivation and leads to increased compliance but only when a person cannot remain anonymous.

The Value of Reactance

Finally, why is it important to know that there is a construct named reactance? Reactance is a common and natural reaction to threats present in everyone's life. We need to understand reactance

not just as something undesirable that needs to be prevented or reduced. Rather, building on Brehm's emphasis on the motivational side of reactance, reactance can be beneficial: it plays a key role in forming one's identity. It makes individuals understand their self-containing principles – what they want and what they do not want – and at the same time delivers the energy to fight for those principles.

Summary

- People believe they possess certain freedoms. When these freedoms are threatened, they can experience psychological reactance, a motivational state characterized by the strong desire to restore freedom and actual behavioral attempts to do so.
- Reactance is manifested in reactance motivation and reactance striving.
- Attempts to measure reactance have found that it consists of an experience of threat, an emotional experience, cognitive processes, and changes in physiological arousal and brain activity.
- The emergence of reactance depends on the importance of the threatened freedom, the perceived extent of the freedom threat, and people's experienced ability of restoring the freedom.
- People can also experience reactance on behalf of another person (vicarious reactance).
- Reactance is not negative per se but makes people aware of their self and supports them in fighting for what they want.

Recommended Reading

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Guiding Answers to Questions in the Chapter

1. Q (With Box 6.1): Think about examples in your life where you believed that you are free but then were restricted in this freedom. Did you experience reactance? How did you react? What were your subjective and behavioral reactions?

   A: With subjective reactions, we mean what emotions you felt and whether you liked the restricted freedom more because of the restriction (attractiveness change). With behavioral reactions, we mean what you did in order to restore the threatened freedom.

2. Q (With Box 6.3): Imagine that you are a politician trying to convince people of a new highway regulation that forces drivers to adhere to a speed limit of 80 km/h although it has always been 100 km/h. How would you handle it? What could you do to prevent reactance?

   A: To prevent reactance, research has tested different methods such as perspective taking, forewarning of a threat, or helping people realize that they are free to decide for themselves. Try to use those methods in your attempt to convince people of the new regulation.

3. Q (With Box 6.4): Think of examples where reactance may be something desirable. Did you experience such situations yourself?

   A: With desirable we mean that resisting a freedom threat had a positive outcome for you (as in paradoxical interventions) or reactance made you feel strong and determined or made you feel aware of important priorities in your life.

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The Focus Theory of Normative Conduct

7

F. Marijn Stok and Denise T. D. de Ridder

Contents

Basic Theory

Human beings are social animals. They do not operate in a vacuum, but instead they are continuously influenced by others human beings. As such, an individual's emotions, attitudes, and behaviors cannot be viewed separately from the social groups they belong to. Social groups can be as small as a family or as large as a nation or religious group, and every individual belongs to different social groups. Every social group holds certain standards, expectations, and rules for what is "normal" and "appropriate" to feel, think, and do, which have an effect on all members of the group. These standards, expectations, and rules are referred to as **social norms**. A group's social norms are often unwritten; yet, they tend to be deeply institutionalized in the group and fully internalized by the group's members. That is, the social norms that exist in a given individual's relevant social group will affect that individual not only when there are other group members present (and when there is thus a direct incentive to adhere to the group's norms), but also when there are no other group members nearby.

Definition Box

Social norms: These are the standards, expectations, and rules held by a social group for what is "normal" and "appropri-

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ate" to feel, think, and do. A group's social norms are often unwritten; yet, they tend to be deeply institutionalized in the group and fully internalized by the group's members.

The influence of social norms is ubiquitous and is generally considered in psychology to be one of the essential drivers of human behavior (e.g., Berkowitz, 1972; Birnbaum & Sagarin, 1976; Sherif, 1936), and social norm-based concepts have long been included in models and theories that aim to predict human behavior (e.g., Bandura, 1977; Fishbein & Ajzen, 1975). However, questions were also being raised about the usefulness of the concept of social norms, with several scholars pointing out the vagueness and overgeneralization of the concept, as well as the highly inconsistent predictive value of social norms (e.g., Darley & Latane, 1970; Marini, 1984; Schwartz, 1973). In response to these criticisms, a theoretical refinement of the concept of social norms, and the manner in which they impact human behavior, was introduced by Cialdini and colleagues (Cialdini, Reno, & Kallgren, 1990; Cialdini, Kallgren, & Reno, 1991; Kallgren, Reno, & Cialdini, 2000; Reno, Cialdini, & Kallgren, 1993). This resulted in the **Focus Theory of Normative Conduct** (Fig. 7.1). The Focus Theory of Normative Conduct both refines the definition of social norms by making a clear distinction between two different types of social norms, *descriptive* and *injunctive* social norms, and introduces the concept of *normative focus* to shed light on which type of social norm will affect people's behavior in which type of situation, and why.

Definition Box

Focus Theory of Normative Conduct: This theory stipulates that norms affect human behavior powerfully and systematically. In situations where several social norms are present at the same time, behavior will be dictated by the *focal* norm, that is, the norm that is made salient and that attention is focused on. The theory further distinguishes between two different kinds of social norms: *descriptive* and *injunctive* norms. The theory is described in more detail in this section.

Descriptive and Injunctive Social Norms

Human behavior in social situations stems from two very different motivational sources, as was shown as far back as 1955 by Deutsch and Gerard. People may be influenced by others because they consider these others a source of *informational social influence* – that is, the actual behavior of others provides information about the

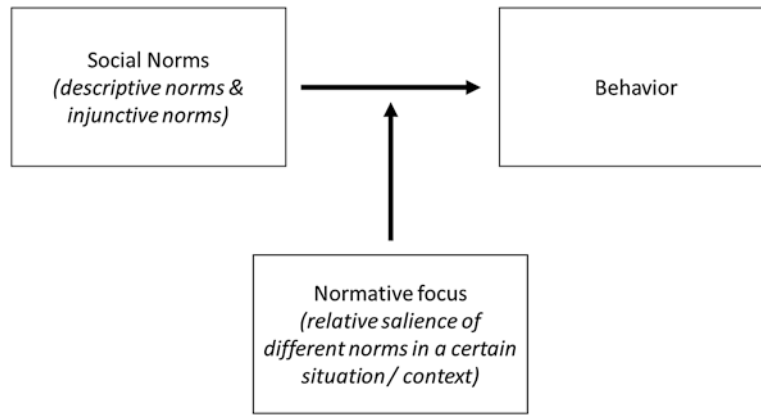

Fig. 7.1 Schematic representation of the Focus Theory of Normative Conduct

normal, usual, or correct way to behave in a certain situation. This influences people's behavior because humans are generally motivated to be accurate (Cialdini & Goldstein, 2004): They want to respond to any given situation in the most efficient way possible, and how others behave provides important cues about what might be the most efficient or adaptive way to behave. Cialdini has argued that looking to others as a source of information offers an information-processing advantage and provides a so-called decisional shortcut (Cialdini, 1988). The Focus Theory of Normative Conduct refers to social norms that describe what is the typical or usual thing to do as **descriptive norms**. Conversely, people may also be influenced by others because they consider these others a source of *normative social influence*. – the expectations of others provide information about the appropriate or desired way to behave in a certain situation. This influences people's behavior because humans are generally motivated to affiliate with others (Cialdini & Goldstein, 2004): They want to build and maintain social relationships with those around them, to be liked and approved by others, and to avoid social exclusion. What other people expect provides important cues about which behaviors will allow one to meet these affiliation goals. The Focus Theory of Normative Conduct refers to social norms that describe what ought to be done as **injunctive norms**.

Definition Box

Descriptive norms: Social norms that describe what is the typical or usual thing to do within a certain social groups.

Injunctive norms: Social norms that describe what other group members think ought to be done.

In many situations, descriptive and injunctive norms will be aligned. In these cases, what a social group believes *ought* to be done is also indeed what is *being* done by the group members (e.g., when library visitors turn silent upon entering the library, Aarts & Dijksterhuis, 2003). However, the underlying motive for being silent in the library may still differ from one person to the other, and the fundamental differences between the two major sources of motivation are highly relevant both theoretically and practically, as we will demonstrate in the following sections. Important to note already here is that the informational source of social influence is more directly related to the behavioral decision at hand: People simply wish to behave in the most adaptive way possible and use other people's behavior as a cue to inform them about that most adaptive way (see also Manning, 2009). The normative source of social influence, conversely, is at best indirectly related to the behavioral decision at hand: People are not so much looking for the best solution to the behavioral decision itself, but rather are looking to attain a more distant goal, namely to gain social approval and avoid social sanctions (even if this may lead to a suboptimal behavioral decision). This is corroborated by results from a priming study (Jacobson, Mortensen, & Cialdini, 2011 Study 1): Priming people with descriptive norm-related words (e.g., "typical," "usual") led to faster responses on target words related to the goal of accuracy (e.g., "accurate," "efficient") compared to comparison non-words, whereas priming people with injunctive norm-related words (e.g., "ought," "duty") led to faster response times on target words related to the goal of social approval (e.g., "approval," "team").

The crucial relevance of this distinction has been very aptly demonstrated in Asch's conformity experiments (1951), in which participants had to perform a very simple task in a group setting – each group member in turn had to publicly provide their solution of the task. Unknowing to the participants, all other members of the group were confederates to the experiment, who would purposely provide a wrong answer to the simple task. Post hoc interviews with the true participants convincingly showed that participants could have very different reasons for going along with people providing a faulty answer on a very simple task. Participants with low self-esteem, for example, were genuinely confused when

others provided a wrong answer and became unsure of their own judgment. These participants reported going along with others' answer simply because they no longer trust their own judgment and considered that multiple others simply could not be wrong – thus using the other people as a source of *informational* social influence (see also Wylie, 1961; Ziller, Hagey, Smith, & Long, 1969). Other participants, however, indicated being very much aware of the fact that the answer that was provided by the other people was wrong, but stated that they simply did not want to be the one to diverge and stand out from the group. For these participants, the others became a source of *normative* social influence. Giving a correct answer was no longer their main priority; rather, maintaining a sense of belonging to the group became the main priority (Cialdini & Goldstein, 2004).

Box 7.1 Zooming In: A Closer Look at Asch's Conformity Experiments

Many variations of the Asch's conformity experiments have been performed. One interesting variation is the inclusion of one "accomplice" (one other person who also diverges from the group opinion). This has dramatic effects on the answers people provide. Interestingly, this is especially true for those motivated by *informational social influence*. Videos of the Asch's conformity experiments, as well as more information on such variations of the experiment, can be found on YouTube by searching for "Asch conformity." Heroic Imagination TV, for example, has created a highly informational video.

Normative Focus

In normal day-to-day situations, multiple social norms are typically present at the same time. While these may be congruent, many times they will also be in conflict with each other. A good social norms theory then, in order to have any practical use, should be able to make some sort of prediction as to which norm will affect behavior under which conditions. The Focus Theory of Normative Conduct aims to do so by introducing the concept of normative focus. Normative focus refers to the idea that any given social norm will only influence behavior when it is activated at the moment of the behavioral decision, that is, when that specific norm is made salient or when an individual's attention is focused on that specific norm while choosing their path of action.

For example, multiple early studies by Cialdini and colleagues showed that a descriptive anti-littering norm (i.e., a clean environment) always led to less littering than a descriptive pro-littering norm (i.e., a littered environment), but that this effect became much more pronounced when the descriptive norm was made *focal* (i.e., when people's attention was specifically drawn toward the norm; Cialdini et al., 1990, Study 1; Reno et al., 1993, Study 1). Similarly, focusing people on an injunctive social norm not to litter led to lower littering than focusing people on a no-norm control message (Cialdini et al., 1990, Study 5). The same study also showed that focusing participants on an injunctive social norm close to an anti-littering norm, namely a recycling norm, led to lower littering than focusing them on an injunctive social norm that is far away from an injunctive anti-littering norm, such as a voting norm – but littering following the voting norm was still lower than following a no-norm control message. This is in line with the idea of spreading activation of neural networks (e.g., Anderson, 1983; Harvey & Enzle, 1981).

What the Focus Theory of Normative Conduct added to the field was a more profound understanding of when and why social norms would affect behavior, and also under which conditions social norms would *not* affect behavior. Indeed, in one article, Cialdini and colleagues concluded that "[o]ur data indicate that under naturally occurring conditions, if there is no salience, behavior will be largely unguided by normative considerations. […] It is misguided to expect that because norms are constantly in place within a person or culture, they are constantly in force" (Kallgren et al., 2000, p. 1010–1011). This

increased insight allowed the field to move forward in terms of systematic hypothesis testing, which in turn opened up possibilities for applying the concept of social norms to public behavior change.

An important limitation of the Focus Theory of Normative Conduct is that the processes through which a norm can become focal are not described sufficiently in the original theory and accompanying early studies of the theory. These studies mainly focused on quite artificial norm shift manipulations in highly specific and oversimplified settings. In real life, however, the contexts in which behavioral decisions are made are hardly ever so simple. Consider the example of eating behavior: Over 200 eating-related decisions are made each day (Wansink & Sobal, 2007), and this is done in an environment filled with multiple eating-related norms, which not only often conflict each other (think of thin, fit people advertising extremely unhealthy food types), but also often are ambiguous, vague, or outdated (De Ridder, De Vet, Stok, Adriaanse, & De Wit, 2013). It is not easy to ascertain how in such complex environments, one social norm becomes focal over many others using the knowledge from the type of studies described earlier. Moreover, the exact procedures employed to make social norms focal in these early studies of the Focus Theory of Normative Conduct have been criticized for not always being empirically and theoretically convincing. While these issues limit the conclusions that can be drawn from these early studies on its own, a large body of subsequent research exists to back up the idea of the importance of normative focus. It is to several of such studies that we now turn our attention.

Box 7.2 Zooming In: Criticism of the Procedures to Make Social Norms Focal

The exact procedures employed to make social norms focal in these early studies of the Focus Theory of Normative Conduct can be criticized (as Cialdini and his colleagues indeed point out themselves, e.g., Kallgren et al., 2000) for not always being empirically and theoretically convincing. As an illustration, consider the example of a norm focus manipulation discussed in this chapter, the case of a confederate walking through a clean area and then either littering or not littering. This manipulation may be interpreted by the average reader in a different manner than by Cialdini and colleagues. Their interpretation is that in a littered environment, a littering confederate makes a descriptive pro-littering norm more salient than a non-littering confederate, but in clean environment, a littering confederate in fact makes a descriptive anti-littering norm more salient (because it so obviously goes against the anti-littering norm stipulated by the clean environment). Theoretical underpinnings for this assumption are weak at best. There is no convincing argumentation as to (a) why the same behavior of one confederate can apparently make opposite norms salient, (b) why littering of one person in a clean environment would underscore anti-littering rather than pro-littering, and (c) why the one-time behavior of one single person would constitute a powerful norm shift manipulation in the first place (generally, social norms are thought to have to stem from a group of people).

Research in an Applied Context

Social norms have been used to promote desired behavior in a large number of applied settings, such as consumer behavior, health behavior (most notably alcohol consumption in college students, but also many other types of health behavior), and sustainable behavior. For example, the so-called social norms approach (Perkins & Berkowitz, 1986) became popular in the 1990s off the back of a seminal study showing that college students highly overestimated their peers' alcohol abuse and acceptance of alcohol abuse,

and that these misperceptions influenced college students' own drinking attitudes and behavior approximate to the perceived norm (Perkins & Berkowitz, 1986). Such misperceptions (labeled as "pluralistic ignorance"; Toch & Klofas, 1984) occur both in relation to problem behaviors (which are usually overestimated) and protective behaviors (which are usually underestimated).

The idea of the social norms approach was that, by presenting more accurate descriptive norms through campaigns, these misperceptions would be corrected and alcohol abuse (or other problematic behaviors) would be reduced. Such interventions are easy to implement and inexpensive, and it is therefore not surprising that the basic concept was quickly adopted in many other policy domains as well. However, the popularity of social norm-based interventions is not supported by a strong and consistent record of efficacy. With regard to college students' alcohol consumption, for example, positive effects (Turner, Perkins, & Bauerle, 2008), no effects (Granfield, 2005), and even counterproductive effects of social norms interventions have been reported (Campo & Cameron, 2006; Clapp, Lange, Russel, Shillington, & Voas, 2003).

One of the reasons for this might be that many of these social norm-based interventions moved away from the original approach of correcting misperceived norms toward the use of manipulated, made-up norms to affect behavior. In any case, the substantial variation in effectivity suggests that social norm interventions are not a "quick-and-dirty" panacea for all who wish to instigate behavior change – rather, attention should be paid to how and when social norms can instigate behavior change, and what are important moderators of the effect of social norms (Burchell, Rettie, & Patel, 2013; Rimal & Real, 2003). We will discuss two important moderators in detail below in the following text.

Box 7.3 Question for Elaboration

You have been assigned to design a strategy for less alcohol consumption on campus. What would you prefer: using a descriptive norm or an injunctive norm?

Self-Regulatory Resources

A first crucial moderator of social norm effects is the extent to which people have access to **self-regulatory resources** when they are exposed to a norm (Jacobson et al., 2011). It has been suggested that the availability of self-regulatory resources when exposed to social norms plays a crucial role in determining whether these social norms become focal, and thus affect one's behavior, or not (Jacobson et al., 2011). As already discussed earlier, descriptive norms provide informational social influence that is directly related to the behavioral decision at hand, whereas injunctive norms provide normative social influence that is directly related to the more distant goal of social affiliation, and only indirectly related to the behavioral decision at hand. It has been shown that self-regulatory capacity interacts very differently with these two underlying motives.

Definition Box

Self-regulatory resources: The capacity that people have to exert effortful control over their inner states and external behaviors (Vohs & Baumeister, 2016; Baumeister, Vohs, & Tice, 2007; see also Gieseler, Loschelder, & Friese, Chap. 1 this volume). This capacity has been shown to be limited, that is, people do not always have ample self-regulatory capacity available at any given moment.

Under conditions of low self-regulatory capacity (or similar "fast" types of processing; cf. Kahneman, 2011), people's decision-making tends to be less well thought-through and more automatic. In such instances, quick heuristics that help make effective, adaptive decisions are highly helpful, and this is exactly what descriptive social norms offer (remember that Cialdini has referred to descriptive social norms as "decisional shortcuts"). When self-regulatory capacity is higher (or when people have the opportunity

and the motivation for "slow" thinking; cf. Kahneman, 2011), people might rely more on other factors, such as their own values and goals, to come to a behavioral decision, and descriptive norms may thus play a less crucial role. These ideas have been corroborated by various studies in multiple domains.

Box 7.4 Zooming In: Human Cognitive Processing

Human cognitive processes are guided by two parallel systems. System 1, the "fast system", provides quick, intuitive, and automatic reactions and guides our decision-making most of the time. System-1 decisions do not require much cognitive effort; they are guided by habits and heuristics. System 2, the "slow system", is activated less often and requires substantial cognitive effort. This system provides deliberate, reasoned reactions.

System 1	System 2
Fast	Slow
Unconcious	Conscious
Automatic	Effortful
Simple decisions	Complex decisions
Error-prone	Reliable
High capacity	Low capacity

For example, it has been shown (Jacobson et al., 2011, Studies 3 and 4) that, under conditions of low self-regulatory capacity, college students were more likely to comply to a time-consuming request when that request was framed as a descriptive norm (along the lines of "most other students in past instances have chosen to comply with this request"). On the other hand, when self-regulatory capacity was high, college students were more likely to comply with the request when it was framed as an injunctive norm (along the lines of "most students felt that people should comply with this request"). Similarly, in the health domain, students who were made cognitively busy (and who thus had limited effortful processing capacity available) were more likely to express intent to join an early-morning physical activity program when this program was advertised as a popular program that many students were signing up for. Conversely, students who were provided more effortful processing capacity were more likely to express intent to join the program when it was advertised as a program that others thought reflected important values and important personal qualities (Kredentser, Fabrigar, Smith, & Fulton, 2012). Salmon, Fennis, De Ridder, Adriaanse, and De Vet (2014) showed that people were more likely to pick a healthy type of food promoted by a descriptive social norm only when these people had low self-regulatory capacity available – when the decision had to be made quite fast (Fig. 7.2).

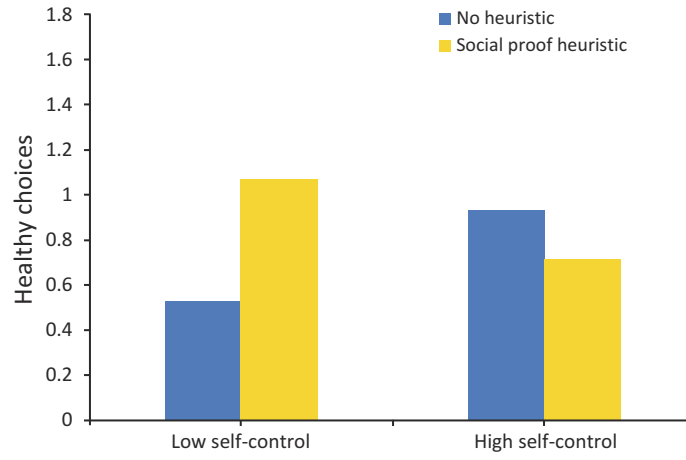

Fig. 7.2 Self-regulatory capacity affects food choice after exposure to a social norm. The choice for healthy products that were advertised by a descriptive social norm (the "social proof heuristic") was affected by available self-regulatory capacity in the study by Salmon et al. (2014, p. 107)

Jacobson, Mortensen, Jacobson, and Cialdini (2015) brilliantly completed this picture by showing that the effectiveness of injunctive norms on people's behavior was moderated by the trait of impulse restraint; that is, less impulsive people were more likely to be affected by injunctive norm messages.

Relationship with the Norm Referent Group

The relationship that an individual has with the social group from which a given social norm stems, the norm referent group, also plays an important role in determining whether a social norm becomes focal and will affect behavioral decisions. Social identity theory and self-categorization theory (e.g., Turner, 1999; Scheepers & Ellemers, Chap. 9 this volume) stipulate that one's self-concept consists of multiple identities, reflecting different roles that people take on in different social groups. Performing the behaviors that are congruent with a given social group validates one's sense of belonging to that group, and in that sense boosts self-identity.

Building upon these premises, the referent informational influence model (Terry & Hogg, 1996) stipulates that a social group's behaviors and expectations will affect an individual only to the extent that an individual identifies with that social group. If this condition is not met, what people stemming from that group do themselves, or expect others to do, should have a much less significant influence on people's behavior. It is important to note that identification with a group is not the same as belonging to the group per se: All people are part of in-groups which they do not feel particularly strongly connected to (e.g., "humankind"; "people with blonde hair"), but it is unlikely that they also identify with these groups extremely strongly, and therefore, it is unlikely that a norm stemming from such groups will affect people's behavior significantly.

The importance of identification with the norm referent group has been established primarily for the effect of descriptive social norms. Recycling intentions (Terry, Hogg, & White, 1999), intentions to use sun protection (Terry & Hogg, 1996), binge drinking (Johnston & White, 2003), and eating behavior (Stok, De Ridder, De Vet, & De Wit, 2012) were all affected by descriptive social norms stemming from an in-group – but only when the participants identified strongly with that in-group. For injunctive social norms, less research is available that investigates the role of identification, but Yun and Silk (2011) showed that the role of identification was less relevant for injunctive social norms than for descriptive social norm effects.

Box 7.5 Question for Elaboration

The railway station wants people to litter less while they are waiting for trains on the platform. In what way, would it help the waiting passengers to identify with a social group?

Using Descriptive or Injunctive Social Norms To Instigate Behavior Change

Cialdini and colleagues posit that of the two types of social norms, *injunctive* social norms are most useful for those wishing to promote behavior change in others (e.g., Cialdini et al., 1991; Reno et al., 1993). Their position is based on the idea that making a descriptive norm salient is only beneficial when the behavior of most other people is in the desired direction. For example, when wishing to promote fruit consumption among the general public, focusing them on the reigning descriptive norm would be useful only if most of the public already consume a lot of fruit. After all, if this is not the case, the descriptive norm would actually be to not eat that much fruit, and this might have detrimental rather than health-promotive effects (that this is indeed possible is shown by, for example, Sieverding, Decker, & Zimmerman, 2010, and Stok et al., 2012). They further stipulate that an injunctive norm, on the other hand, can be put to use in any given situation, because the socially driven motivations that

underlie injunctive norm effects play a role regardless of what others are actually doing. However, recent theorizing and empirical evidence challenge the idea that injunctive norms are by definition more useful in multiple ways.

Box 7.6 Zooming In: Why Descriptive Social Norms Should Be Communicated with Care

Many desired behaviors (such as recycling, being physically active, and adhering to speed limits) are performed less often than we as a society would hope. Similarly, many undesired behaviors (such as aggression, overeating, and crossing red traffic lights) are performed too often. A common, and understandable, response of policy makers is to alert the public to these figures with the intention of instigating behavior change, thus communicating that, for example, cancer screen attendance is too low, or that a large majority of children are consuming too many soft drinks. Unfortunately, however, there are strong indications that such communications do not lead to behavior change in the desired direction. From the perspective of the Focus Theory of Normative Conduct, this is actually understandable: When it is communicated, for example, that only few people wear sunscreen when going outside, the average person may simply conclude that it is thus "normal" not to wear sunscreen and that they can simply continue doing so. Even more detrimental effects might occur in the few people who were initially applying sunscreen correctly: They might actually stop doing so, to conform to the group's standards. Such effects have been shown for intentions to attend cancer screening (Sieverding and colleagues, 2010) as well as for fruit consumption (Stok, De Ridder, De Vet, & De Wit, 2014). When the current behavior is not up to the desired standards, therefore, these "normative facts" should be communicated with great care!

Box 7.7 Question for Elaboration

The Netherlands Nutrition Centre has previously launched a healthy eating campaign with the slogan "80% knows [about healthy food], 20% eats it." Is this a good campaign strategy?

For example, recent insights indicate that when the majority of people are not yet showing the desired behavior, descriptive norms can be formed instead around what most people would like to do (Sunstein, 1996) or around the fact that the number of people performing the desired behavior is increasing (called "trending norms"; Mortensen et al., in press). Moreover, there may be situations where injunctive norms actually lead to less optimal outcomes. Injunctive social norms do have a pushy component, wherein they tell people what they should be doing. The risk with such norms, especially when the socially approved option does not align with what the individual might personally value, is that it creates a feeling of resistance or reactance (Brehm, 1966; see Mühlberger & Jonas, Chap. 6 this volume) in the individual. There is research suggesting that injunctive social norms do hold this risk (e.g., Bosson, Parrott, Swan, Kuchynka, & Schramm, 2015; Stok, De Vet, De Wit, Renner, & De Ridder, 2015) and that this may, under certain circumstances, cause injunctive social norms to be less effective than descriptive social norms or to even be counterproductive (e.g., Stok et al., 2014).

Detailed Discussion of One Study

One of the most-cited articles (well over 1500 citations) that describes effects of social norms on people's behavior is the one in which two studies on towel reuse by hotel guests are described by Goldstein, Cialdini, and Griskevicius (2008). Having hotel guests use their towel more than once saves energy and water, reduces the amount of polluting detergent released into the environment, and as such is important from an

environmental perspective. In addition, it helps hotels save money and portray themselves as environmentally friendly. The two studies conducted by Goldstein et al. (2008) investigate the effectiveness of a descriptive norm-based message, as compared to the more traditional "help save the environment" message that is the standard message used by hotels, to encourage towel reuse by its guests. The second study additionally investigates how the use of different norm referent groups moderates the effect of the descriptive norm message. A strong suit of the two studies is that they were conducted in the field, that is, in a real hotel with regular hotel guests as the (unknowing) participants.

The first study employed a between-subjects design. Over the course of 80 days, one of two messages was displayed on a towel rack hanger placed in the bathrooms of hotel rooms of a "midsized, midpriced hotel in the Southwest that was part of a national chain" (Goldstein et al., 2008, p. 473). The hotel had 190 rooms, which were randomly assigned to a descriptive norm-based message or a standard pro-environmental message (Table 7.1). The towel rack hangers (see Fig. 7.3) also provided detailed instructions for guests about how to indicate their willingness to reuse their towel (i.e., by hanging them on the towel rack or over the shower curtain rod). On the back of the hanger, information was provided on the benefits of towel reuse for the environment (e.g., saving water and preventing the release of detergent into the environment). Hotel room attendants were trained to record hotel guests' towel reuse behavior through repeated instruction and provision of pictures showing the different types of towel placement that should be considered as towel reuse. The behavior of guests staying in the hotel for a minimum of two nights was analyzed. For guests staying for more than two nights, only their towel reuse behavior of the first eligible day was analyzed, so as to ensure that each guest participated in the study only once. Crucially, a higher percentage of hotel guests staying in a room with a descriptive norm message on the towel rack hanger reused at least one towel (44.1%) than of guests in a room where the standard pro-environmental message was displayed (35.1%). The difference between these percentages was statistically significant as proven by a chi-square test.

The second study, which was conducted in the same hotel, dived deeper into the question of whose norms people are most likely to follow. As we have detailed earlier, identification with the norm referent group is an important moderator of the effect of social norms, especially of descriptive social norms. Most often, the extent of identification is based on personal characteristics (age, gender, ethnicity, interests). Goldstein et al. (2008) sought to investigate whether more random, contextual characteristics could also play a role in identification, and whether contextual similarity to the referent group would have a larger or smaller effect than personal similarity to the referent group. To that end, in addition to the two messages used in Study 1, three additional messages were designed, leading to a total of five different experimental conditions (Table 7.1). Contextual similarity was highlighted by using as norm referent group people who stayed in the same hotel room. Two other messages highlighted personal similarity by using as norm referent groups either fellow men and women or fellow citizens. Hotel rooms were, again, assigned to an experimental condition at random. Over 53 days, towel reuse was shown to be higher in all social norm-based message conditions than in the pro-environmental message condition. Furthermore, the norm stemming from the contextual similarity referent group, comprising people who had stayed in the same room, yielded higher towel reuse (49.3%) than the descriptive norms (42.8% on average) (see Fig. 7.4).

The two studies thus showed that a descriptive social norm message increases towel reuse behavior in hotel guests as compared to a standard pro-environmental message. As a point of criticism with regard to Study 2, it should be noted that the two personal similarity conditions were by design less likely to affect behavior than the contextual similarity condition, as they were less tailored to the participant: While in the contextual similarity condition, there was a clear, one-to-one connection between the referent group and the participant, namely, that they all stayed in the same exact room, the two personal similarity conditions did

Table 7.1 The messages used in the towel reuse studies

Messages used in Study 1		Additional messages used in Study 2		
Standard pro-environmental message	*Generic descriptive norm-based message*	*Descriptive norm-based message highlighting contextual similarity to referent group (room number)*	*Descriptive norm-based message highlighting personal similarity to referent group (gender)*	*Descriptive norm-based message highlighting personal similarity to referent group (fellow citizens)*
"HELP SAVE THE ENVIRONMENT. You can show your respect for nature and help save the environment by reusing your towels during your stay."	"JOIN YOUR FELLOW GUESTS IN HELPING TO SAVE THE ENVIRONMENT. Almost 75% of guests who are asked to participate in our new resource savings program do help by using their towels more than once. You can join your fellow guests in this program to help save the environment by reusing your towels during your stay."	"JOIN YOUR FELLOW GUESTS IN HELPING TO SAVE THE ENVIRONMENT. In a study conducted in Fall 2003, 75% of the guests who stayed in this room (# xxx) participated in our new resource savings program by using their towels more than once. You can join your fellow guests in this program to help save the environment by reusing your towels during your stay."[a]	"JOIN THE MEN AND WOMEN WHO ARE HELPING TO SAVE THE ENVIRONMENT. In a study conducted in Fall 2003, 76% of the women and 74% of the men participated in our new resource savings program by using their towels more than once. You can join the other men and women in this program to help save the environment by reusing your towels during your stay."	"JOIN YOUR FELLOW CITIZENS IN HELPING TO SAVE THE ENVIRONMENT. In a study conducted in Fall 2003, 75% of the guests participated in our new resource savings program by using their towels more than once. You can join your fellow citizens in this program to help save the environment by reusing your towels during your stay."

Note: Texts taken from the information on Study 1 and Study 2 of Goldstein et al. (2008 pages 473–476)
[a]The "xxx" was always replaced with the respective hotel room's number

Fig. 7.3 The standard pro-environmental message used in the first towel reuse study. (Note: image replicated from Goldstein et al., 2008, p. 474)

not specify this connection on a one-to-one basis. The citizen-based message was a general message, that is, it was not tailored to the participant's specific city, and the gender-based message reported the behavior of both genders, from which participants then had to "self-select" the relevant norm. The main take-away messages from these two studies are thus (1) the increase in towel reuse after providing hotel guests with a descriptive norm-based message compared to a standard pro-environmental message, and (2) the larger effectivity of a descriptive norm based on a more contextually similar referent group, that of people who previously stayed in the exact same room, compared to a less similar group, that of people who previously stayed in the same hotel. Important to note here is that the comparison condition against which the descriptive norms were compared was not a no-message control condition: The comparison was against an environment-protection message that itself also has a clear intention to influence behavior and that, as such, constitutes a very strict comparison condition.

Goldstein et al.' (2008) towel reuse study has been replicated multiple times, and results were not always consistent. Some studies replicated the enhanced effect of social norm-based messages compared to other types of messages (Reese, Loew, & Steffgen, 2014; Schultz, Khazian, & Zaleski, 2008; Terrier & Marfaing, 2015), whereas others did not (Bohner & Schlüter, 2014; Mair & Bergin-Seers, 2010). Crucially, two different syntheses of the body of literature on this topic have provided evidence for a small but consistent positive effect of descriptive norm-based messages (regardless of level of identification). A Bayesian evidence synthesis (Scheibehenne, Jamil, & Wagenmakers, 2016) showed that the studies, taken together, provide strong support for the effect of social norms on towel reuse. While this evidence synthesis has been criticized for not taking into account random effects (Carlsson, Schimmack, Williams, & Bürkner, 2017, who themselves report smaller, but largely still supportive, effects using Bayesian multilevel framework analyses with varying assumptions about between-study variation), a small but highly consistent effect was also reported in a more traditional meta-analysis that allowed for between-study heterogeneity (Nisa, Varum, & Botelho, 2017). Furthermore, a random-effects meta-analysis of social influence effects on more general resource conservation (including but not limited to towel reuse) also found a small but consistent and significant effect of social norm-based messages compared to control messages (Abrahamse & Steg, 2013). Taking this body of evidence together, it seems fair to conclude that social norm-based messages have been proven to affect towel reuse behavior, although the effect is not overwhelmingly large compared to strict control conditions.

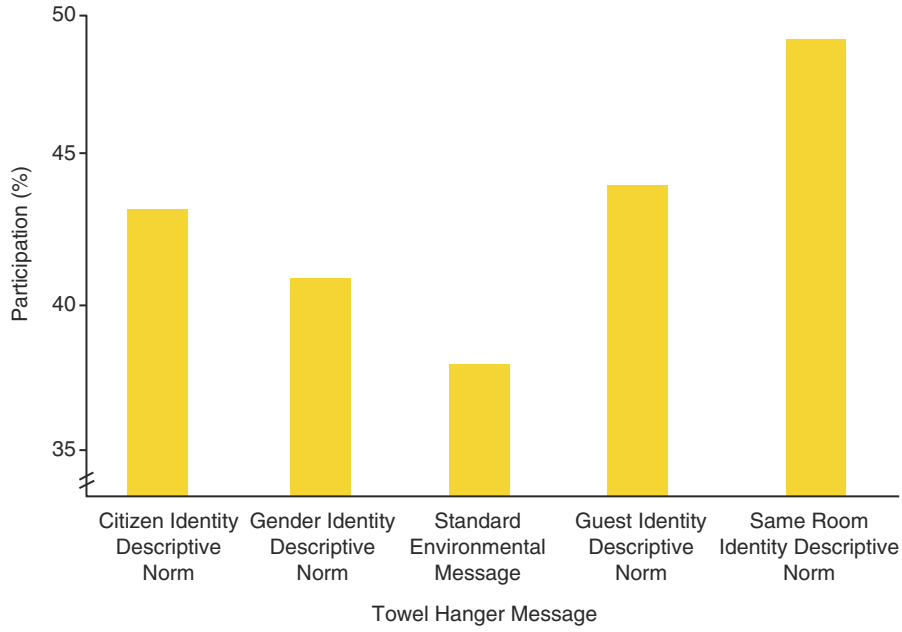

Fig. 7.4 Percentage of people reusing at least one towel per experimental condition in the second towel reuse study. (Note: Image replicated from Goldstein et al., 2008, p. 478)

Summary

- People's behavior is guided by social norms, the often-unwritten rules of conduct that tend to be deeply institutionalized in a social group.
- Social norms that describe what is the typical or usual thing to do within a certain social group are called descriptive norms.
- Social norms that describe what other group members think ought to be done are called injunctive norms.
- Whether people's behavior is guided by social norms depends on their self-regulatory resources, that is, whether they have the capacity to attend to social norms.
- Effectiveness of social norms also depends on the extent that people identify with a social group.
- Both descriptive and injunctive social norms can be employed to design interventions for behavioral change.

Recommended Reading

Cialdini, R.B., Reno, R.R., & Kallgren, CA. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology*, *58*, 1015–1026.

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Guiding Answers to Questions in the Chapter

1. Box 7.3 Q: You have been assigned to design a strategy for less alcohol consumption on campus. What would you prefer: using a descriptive norm or an injunctive norm?

   A: In this case a descriptive norm, informing students about how much students actually drink will probably be more effective. Alcohol intake is not a topic of discussion among students and this will probably lead to false ideas about how much others drink ("pluralistic ignorance"). Correcting these inaccurate ideas by providing a descriptive norm could help reduce alcohol consumption.

2. Box 7.5 Q: The railway station wants people to litter less while they are waiting for trains on the platform. In what way would it help for the waiting passengers to identify with a social group?

   A: People are more inclined to use social norms as a decisional shortcut when they can identify with the group that advocates these norms. Emphasizing that railway passengers are responsible people who do not litter is therefore a good campaign strategy.

3. Box 7.7 Q: The Netherlands Nutrition Centre has previously launched a healthy eating campaign with the slogan "80% knows [about healthy food], 20% eats it." Is this a good campaign strategy?

   A: This campaign rests on the notion that a playful reminder of people not acting on their intentions will encourage them to eat more healthily. In fact, the campaign will probably not be effective because it emphasizes the minority norm that eating more healthily often fails. The Netherlands Nutrition Centre has since discontinued this campaign.

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8 Social Interdependence and the Promotion of Cooperative Learning

Fabrizio Butera and Céline Buchs

Contents

Introduction

We have all observed, at school, in professional settings and in sports, that some groups work in harmony, with members coordinating their actions and helping each other. Other groups, however, experience a great deal of antagonism, with members favoring their own interest and acting against each other. What explains such differences? How can the functioning of a group be predicted and possibly oriented? At an individual level of analysis, group members may have different—sometimes compatible, sometimes conflicting—personal orientations, and be more pro-social or pro-self, thereby favoring joint or self-serving outcomes (De Cremer & Van Lange, 2001). Group members may also hold mixed motives in a given situation, as a function of their focus on the task at hand as well as the social relations in the group (De Dreu, Nijstad, & van Knippenberg, 2008). Classmates, for instance, may be motivated to discover the correct solution to a problem in a physics lab class, and at the same time motivated to show their own competence to the teacher.

An individual level of analysis requires a strong reliance on group composition to predict how groups will behave (Moreland & Levine, 1992). Groups, however, possess particular properties that are likely to influence group members' behavior over and beyond their

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personal orientation. One such property—imposed by the environment or inherited by the group's history—is **goal structure** that is the set of a group's rules, norms, or practices that specify and influence the type of interdependence among individual goals (Johnson & Johnson, 2005). *Social interdependence theory* posits that interdependence may be positive and lead to interactions that facilitate the attainment of all group members' goals, or negative and lead to interactions that favor one's goal attainment by hindering the goal attainment of other group members (Deutsch, 1949). For example, in the famous Robbers Cave study (Sherif, 1958), children in a summer camp discovered that the truck with the day's food was stuck, and could only be rescued if all the children pulled it in synchrony. The situation created a common goal (retrieve the food), superordinate as compared to individual goals, and required coordinated **interaction** of all children to reach that goal (for a discussion of the role of common goals in intergroup contact, see Christ & Kauff, Chap. 10, this volume). In the same study, Sherif observed that other activities, such as tournaments that allowed to win a desired prize, required teams to fight with the understanding that success of one team required hindering the other team.

This chapter will present the tenets of social interdependence theory and the work that this theory has generated over the past 70 years. Then, we will show how this theory has shaped research on cooperative learning, and in particular research on how pupils and students share or not the materials and resources necessary for learning. Finally, we will illustrate how difficult it is to promote positive interdependence and present an intervention study designed to help in this endeavor.

Definition Box

Interaction: Individuals' coordinated actions that have consequences for other individuals' cognitions, affects, and behaviors.

Goal structure: The structure consisting of a group's set of rules, norms, or practices of a group that determines how each group member's opportunities for goal achievement depend on those of other group members, i.e., their social interdependence.

Social Interdependence

Social interdependence theory was born as a theory of cooperation and competition (Deutsch, 1949). Over the years, it has been extremely successful because, instead of describing cooperation and competition as separate phenomena, it allowed to understand their interplay by grounding their emergence in a common mechanism: social interdependence. **Social interdependence** is the mechanism whereby the outcomes of individuals in a group are affected by the actions of the other group members (see also Johnson & Johnson, 1989). Let us imagine two pupils in a classroom, where they are likely to interact and be interdependent. If the teacher has given the two pupils a common assignment, then they find themselves in a position of *positive social interdependence*, as the actions of each of them will jointly contribute to the quality of the assignment. This example illustrates how the positive interdependence introduced by the teacher can contribute to cooperative behaviors and promotive interactions, i.e., working toward the achievement of a common goal. If, on the contrary, the teacher has asked the pupils to write an essay and told them that the best one will be published in the school's newsletter, the two pupils find themselves in a position of *negative social interdependence*, as the actions of each of them will hamper the goal of the other (be the one whose essay is published in the school's newsletter). This example illustrates how the negative interdependence introduced by the teacher might facilitate competitive behaviors and

oppositional interactions, i.e., working toward the achievement of one's own goal to the detriment of the other's (Deutsch, 1949).

It is worth noting at this point that social interdependence is a structural property of the environment, namely, a set of constraints that affect people's behaviors. These constraints can be material: The members of a rowing team are necessarily positively interdependent, as none of them can fulfill the goal of winning without the others (e.g., Dyson, 2001), and the students sitting an entrance exam with numerus clausus for a prestigious curriculum are necessarily negatively interdependent, as the success of one reduces the chances of success of the others (e.g., Kaufman, 1994; Sommet, Pulfrey, & Butera, 2013). The constraints can also be symbolic, for instance, the collectivistic and individualistic culture (Triandis, 1993), or the self-transcendence and self-enhancement values (Schwartz et al., 2012) of a given society. Whatever be the nature of social interdependence, this structural property of the environment exerts a strong influence on people's behaviors and perceptions, resulting either in actual cooperation or competition—characterized by promotive or oppositional interactions (e.g., Johnson & Johnson, 1974)—or in cooperative or competitive climates—characterized by perceived promotive or oppositional relationships (e.g., Elliot, Jury, & Murayama, 2018).

Importantly, the reliance on the concept of social interdependence allows differentiating cooperation and competition from other phenomena that may also be present in social settings. Going back to our two pupils, they may find themselves in a position of independence, if the teacher has asked them to work alone, each with their own materials, and evaluates their work based on predefined criteria. In this case, the actions of one do not affect the outcomes of the other. They may also find themselves in a position in which one is dependent on the other, if the teacher has asked one pupil to help a schoolmate, as in tutoring. In this case, the actions of one affect the outcomes of the other, but not vice versa (Johnson & Johnson, 2005).

Definition Box

Social interdependence: The actions and outcomes of individuals are affected by each other's actions.

Cooperation: Positive social interdependence. The actions of each individual contribute to some common goal; individual goals are positively associated. The success of one supports the likelihood of success of others.

Competition: Negative social interdependence. The actions of one individual hamper the goal of the other; individual goals are negatively associated. The success of one reduces the likelihood of success of others.

Psychological Processes in Social Interdependence

How does social interdependence, either positive or negative, result in the expected outcomes, namely, the emergence of **cooperation** with its promotive behaviors, or **competition** with its oppositional behaviors, respectively? Three important processes appear to be at work in social interdependence (Deutsch, 1962). First, *substitutability* refers to the extent to which a group member's actions can substitute for the actions of another group member. Let us imagine that our two pupils are working together on a joint assignment, say a report on the geography of India: If pupil number one completes a section of the assignment for pupil number two, the latter will be satisfied and will not feel the need to complete that section by him/herself, because in cooperation the partners' actions are substitut-

able. If the two pupils have well understood what positive interdependence is about, pupil number two will reciprocate in a future task. This, of course, provided that actions are effective, that is functional in reaching the goal (in this example, to write a good report): If one partner's actions are not effective, then the other will have to expend more effort to compensate, thereby thwarting cooperation's important role of evenly distributing the effort. However, it is clear from our example that effective actions are not substitutable in the case of competition: If pupil number one completes a section of the assignment more quickly or instead of pupil number two, thereby signaling greater competence to the teacher, pupil number two will not be satisfied and will feel the need to exert extra effort to bridge the gap.

Second, social interdependence involves *cathexis*, a substantial affective investment in the actions and persons involved in an interaction. In cooperation, positive cathexis is attached to effective actions, and negative cathexis is attached to ineffective actions of the partner. Indeed, effective actions are likely to result in reaching the group's common goal, whereas ineffective actions (or "bungling" as Deutsch calls them) are likely to hinder such a goal. In competition, however, negative cathexis is attached to effective actions, and positive cathexis is attached to ineffective actions of the competitor. Indeed, effective actions of the competitor are likely to result in hindering one's individual goal, whereas ineffective actions are likely to favor it. For instance, a study showed that under negative interdependence, participants actively engaged in claiming one's self-superiority in terms of competence as compared to a partner who might have had a good point in a problem-solving task (Butera & Mugny, 1995).

Third, *inducibility* refers to the reciprocal influence that partners exert on each other. This process is particularly important in positive social interdependence. Inducibility leads the partners to engage in effective actions that may be useful for the common goal and refrain from actions that may interfere with such a goal. Under negative social interdependence, competitors will try to resist each other's influence in order to avoid losing some competitive advantage. For example, experts working under negative interdependence have been shown to resist the other's influence, their expertise notwithstanding (Butera & Mugny, 2001; Quiamzade & Mugny, 2009). In sum, social interdependence creates a dense affective and behavioral network within a group, in which group members develop meaningful representations, affects, and actions in relation to others, either positive or negative depending on whether group members are tied by cooperation or competition.

Box 8.1 Question for Elaboration

Imagine a cohesive and cooperative volleyball team. Give an example describing how substitutability, positive cathexis, and inducibility intervene during a match.

Cooperation

Social interdependence theory has been instrumental in the development of a systematic theory of cooperation and competition. Moreover, it has led to the development of a long-lasting and productive area of research that has investigated the mechanisms that make cooperation more effective—in terms of effort to achieve positive relationships, psychological adjustment, and social competence—than competition or individual work (Johnson & Johnson, 1989). This area of research has also uncovered the mechanisms that, as a result, lead cooperation to Promote higher productivity and achievement, better interpersonal relationships, psychological health, and self-esteem (Johnson & Johnson, 2015). In particular, the work by Johnson and Johnson (see 2009 for a review) has uncovered five principles that contribute to the effectiveness of cooperation (see Fig. 8.1).

1. *Positive interdependence*. As mentioned earlier, it is crucial for group members to pursue common goals or to consider that individual

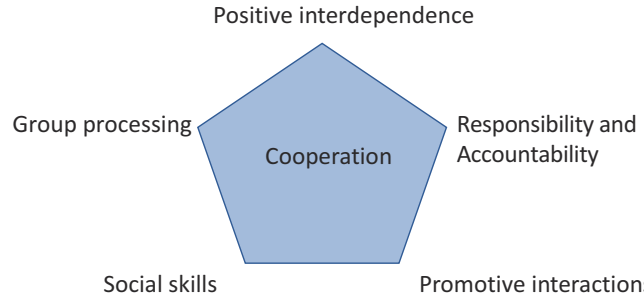

Fig. 8.1 Five principles that contribute to the effectiveness of cooperation. Why are responsibility and accountability important to cooperation? What do they add to positive goal interdependence?

goals are positively linked in order to work cooperatively (see also Sherif, 1966). Beyond this theoretical statement, it was demonstrated that, indeed, positive interdependence yielded stronger positive effects on achievement than mere group membership (Hwong, Caswell, Johnson, & Johnson, 1993) or mere interaction (Lew, Mesch, Johnson, & Johnson, 1986).

2. *Responsibility and accountability*. If group members strive for the same goal, then they are responsible for one another, namely for doing their share of work and for helping the others. Even if the importance of such personal responsibility seems obvious, classic research on the phenomenon of "**social loafing**" has shown that people may actually work less in groups (e.g., Latané, Williams, & Harkins, 1979). More specifically, if the contribution of single group members is difficult to assess, especially in larger groups, people tend to free ride and let the others do all the work, which results in reduced group performance (Karau & Williams, 1993). Hence, it is important that personal responsibility be accompanied by group or individual accountability: If group or individual work is visible and easy to assess, it is also easy to assess all group members' contributions to the group

Box 8.2 Zooming In: Sources of Interdependence

When we mentioned interdependence, we referred to goal interdependence, as this was part of Deutsch's original formulation and is necessary for cooperative learning. It is important, however to consider other sources of interdependence, as they may all be used in a group to create effective cooperation. Johnson and Johnson (1989, 2009) distinguish three categories of interdependence: *outcome*, *means,* and *boundary* interdependence. Outcome interdependence refers to desired states and includes *goal* interdependence as well as *reward* interdependence: Indeed, a group of pupils may be interdependent because they pursue the same goal—handing in a project or ensuring that all teammates learn—but also because they expect that all the pupils who worked on the same project will receive the same reward—a common grade or the same bonus points. Group members may also be interdependent because they need to share the means involved in their work: They may have to share complementary *resources* (like in the *jigsaw classroom*, cf., Aronson & Patnoe, 1997), take turns in complementary *roles*, or each be responsible for a different *task* in the same assignment. Finally, *boundaries* specify who is interdependent with whom, typically by specifying who is in a group (interdependence) and who is in another group (independence—unless the other group is an ally or a rival).

Definition Box

Social loafing: The reduced effort of people in groups, as compared to individual effort. Group members who feel unidentifiable contribute less to the group.

goals, which increases effort and commitment of each member. It is important to note that each group member should genuinely endorse personal responsibility for supporting the team's goals, to avoid that accountability merely functions as extrinsic, controlled motivation, bound to become inactive as soon as assessment and control are no longer implemented (Ryan & Deci, 2000).

3. *Promotive interactions*. Working cooperatively does not mean merely working together. Actual cooperation requires teammates to cater not only to their work but also to that of their partners. In particular, cooperative teammates trust each other and exchange needed resources (e.g., Toma & Butera, 2009), use language to construct some common knowledge (Wegerif, Mercer, & Dawes, 1999), decenter from one's own point of view to consider or even question the partner's point of view (Butera & Buchs, 2005), use argumentation (Muller Mirza & Perret-Clermont, 2009), encourage others' commitment and accept mutual influence (Johnson & Johnson, 2015), and rely on explanations and cognitive elaboration, peer modeling, peer practice, peer assessment, and correction (Slavin, 2011).
4. *Social skills*. Group locomotion toward a common goal requires, as we have seen, a great deal of coordination. To facilitate such a complex endeavor, group members must be trained and acquire a set of social skills (e.g., Bennett, Rolheiser, & Stevahn, 1991; Johnson, Johnson, & Holubec, 1993), such as the ability to trust other group members, to communicate in a precise and unequivocal manner, and to tolerate and support other members (Johnson, 2009). Most importantly, as discussion and confrontation of points of view may result in the emergence of conflict, group members must learn how to regulate conflict in a constructive manner, that is by focusing on the task at hand and knowledge, rather than their relative status (Buchs, Butera, Mugny, & Darnon, 2004; Johnson & Johnson, 2007; Smith, Johnson, & Johnson, 1981).
5. *Group processing*. Group performance is promoted when groups engage in group processing, that is, take the time, after task completion, to reflect upon their actions, communications, decisions, and performance (Yager, Johnson, Johnson, & Snider, 1986). Such metacognitive processes allow groups to reconsider decisions and avoid concurrence-seeking phenomena such as social loafing, as noted earlier, and "groupthink" (Janis, 1972), the mindset of highly homogeneous groups that fail to question their decisions and decision-making processes (see also Esser, 1998). Group processing is also instrumental in developing group efficacy, cohesion, and social identity (Johnson & Johnson, 2009).

These five principles have been shown to be crucial, but the list is not exhaustive. For instance, based on these elements, Topping, Buchs, Duran, and Van Keer (2017) proposed to place promotive interaction (called constructive interactions by these authors, i.e., interactions that support learning) at the heart of cooperative methods, and list several other elements that contribute to the emergence of these constructive interactions in group work.

Cooperative Learning Methods

The principles of social interdependence theory have been applied to many domains, in particular education, business, and politics. In this chapter, we focus on cooperative learning methods in educational settings, and will leave business and politics aside. Interested readers may refer to Tjosvold and Tjosvold (2015) and Johnson (2015), respectively.

The term "cooperative learning" includes a class of educational practices and pedagogical methods that aim at structuring group work by implementing the aforementioned principles of effective cooperation (e.g., Johnson, Johnson, & Holubec, 1998). For this reason, we will use the term "cooperative methods" hereafter, for greater clarity. In fact, this class of educational practices is not homogenous and includes a great variety of

structures and methods (Johnson, Johnson, & Stanne, 2000; Topping et al., 2017), which may be used formally or informally, for one session or for one semester, at the classroom or at the school level (Johnson & Johnson, 2005). This diversity notwithstanding, several authors recommend that cooperative groups be structured through positive interdependence, making sure that learners feel responsible and accountable, that they are committed to promoting each other and to communicating efficiently, in a trusting atmosphere, and in groups that reflect upon their functioning (e.g., Topping et al., 2017). In other words, positive goal interdependence represents both the structure of the cooperation (ensuring that students actually work together) and the spirit of the classroom (stimulating students to take care of both their own learning and the learning of their classmates; Topping et al., 2017; see also Abrami, 1995).

The success of cooperative learning has produced an impressive number of studies and applications, which have made it possible to quantify the effect of cooperative methods as compared to other methods, mainly competitive and individualistic. Indeed, several meta-analyses have performed an overall assessment of the effects of cooperative methods (Johnson & Johnson, 1989; Slavin, 1983), some with a focus on university learning (Johnson & Johnson, 2002), some with a focus on adolescents (Roseth, Johnson, & Johnson, 2008) or elementary school pupils (Slavin, 2015). Hattie (2008) has combined several meta-analyses, and concluded that cooperative methods has an advantage in terms of performance over comparable competitive methods with an effect size of $d = 0.54$ (with 7 meta-analyses and 1024 studies), as well as over individualistic methods with an effect size of $d = 0.59$ (with 4 meta-analyses and 774 studies). Thus, cooperative methods appear to be effective in promoting learning, more effective than competitive and individualistic methods. Cooperative methods have been shown to promote all sorts of learning outcomes—from short-term and long-term recall of information to reasoning and creativity—in a vast array of subjects (mathematics, history, arts, etc.) and competences (computing, reading, comprehension, etc.).

Box 8.3 Zooming In: Positive Effects of Cooperative Methods

It is important to note that, in addition to the positive effects on learning outcomes, cooperative learning yields positive effects on self-esteem and interpersonal relations (e.g., Johnson & Johnson, 1989). The effects on self-esteem derive from the perception of being helpful and accepted typical of positive interdependence, which has also been shown to lead to better coping with stress and overall psychological and physical health (Johnson & Johnson, 2006). The positive effects on interpersonal relations cover a wide range of behaviors, from perspective taking to listening, from greater group cohesion to lower absenteeism and fewer dropouts (Johnson & Johnson, 2006). They also include greater acceptance of diversity (Sharan, 2010), from students of different ethnic backgrounds (Aronson & Patnoe, 1997) and language (Buchs, Margas, Cazin, Ramirez, & Fratianni, 2018) to students with disability (Johnson, Johnson, & Maruyama, 1983).

Positive Interdependence and Social Comparison

The abovementioned discussion and the results from the meta-analyses reveal that cooperative methods can be instrumental in favoring learning, self-esteem, and interpersonal relations, but also that it is no magic wand: Success rate is not 100%. Even when positive goal interdependence is implemented, and group members know that they should strive for a common purpose, social comparison is at work and occupies a great deal of the group members' attention (cf. Butera & Darnon, 2017). Social comparison is a basic phenomenon that assesses one's competence in relation to that of similar others (Festinger, 1954; for

a detailed discussion of social comparison theory see Utz, Chap. 14, this volume). Importantly for the present discussion, social comparison can be either inspiring or threatening for self-competence: It is inspiring when the partner may be considered as a source of help or information, or a model, and it is threatening when the partner may be considered as a source of humiliation or inferiority, or a competitor (Muller & Fayant, 2010). It is important to note that social comparison can be either inspiring or threatening whatever the direction of the comparison, be it upward (comparing with a superior partner) or downward (comparing with an inferior partner), as noted by Butera and Darnon (2017; see also Buunk, Collins, Taylor, VanYperen, & Dakof, 1990). Even in a cooperative setting, inspiring and threatening comparisons may coexist, as demonstrated by Buchs, Butera, and Mugny (2004); Buchs, Pulfrey, Gabarrot, and Butera (2010); and more recently by Roseth, Lee, and Saltarelli (2019). We will develop this work in a following section.

Box 8.4 Questions for Elaboration

Teachers often call one of the pupils in front of the class to read a particularly well-written essay. In which circumstances will this pupil be inspiring? In which will the pupil be threatening?

The question then arises of how to ensure that cooperative method, which is designed to promote positive interpersonal relationships, does not end up rendering partners threatening to each other. Buchs and Butera (2001) addressed this question by proposing that, besides positive goal interdependence, it is important to efficiently implement other positive interdependences in cooperative learning, in particular resource interdependence (see also Darnon, Buchs, & Butera, 2002). They devised an experimental paradigm with, among others, two conditions: positive resource interdependence and resource independence. In all conditions two partners were given two texts they were asked to learn (and help their partner to learn), and were informed that a learning test would take place—on the two texts—at the end of the learning session, and again later in a delayed test (positive goal interdependence). Each partner was in charge of presenting one text, while the other facilitated the presentation with questions, one text at a time (positive role interdependence). In the *positive resource interdependence* condition, the two partners each received a different text; the two texts were complementary (they were both necessary for the learning test), but each student learned one text by reading it and the other by listening to the partner. In the *resource independence* condition, the two partners received

Table 8.1 Observed dynamics elicited by information distribution

	Identical information (resource independence)	Complementary information (positive resource interdependence)
Relevance and utility of relationship	Weak	Strong
Climate	Individual/competitive	Cooperative
Student involvement	Average	Strong
Type of interactions	Discussion/confrontations	Summary/questions/explanations
Individual accountability	Average	Strong
Reciprocal interdependence	Weak	Strong
Focus on social comparison of competences	Strong	Weak
Partner's competence	Threatening and detrimental	Welcomed and beneficial
Relevant mechanism	Competence threat: competitive relational activities as mediator	Informational dependence: quality of informational input as moderator

From Buchs and Butera (2004)

both texts; the two partners then possessed identical information, and each student presented one of them to the partner, in turn. As noted by Buchs and Butera (2015), in positive resource interdependence, as compared to resource independence, "knowing that the other is dependent on oneself for accessing some information and that oneself is also dependent on the partner to access some other information would direct students to be more involved in information exchange" (p. 205). This is also supposed to elicit a series of other positive dynamics, summarized in Table 8.1.

Inspiring and Threatening Partners

The distinction between positive resource interdependence and resource independence is important and has been shown to influence not only partner perception and interpersonal relations, but also learning. In a study based on the general paradigm outlined earlier and conducted with university students, Buchs, Butera, and Mugny (2004), Study 2) measured the participants' perception of the partner's competence on two important aspects of their interaction, namely, perceived competence to understand information and perceived competence to summarize information. Learning outcomes were measured through a multiple-choice test with questions related to the texts students had to read and present. The questions required from the students a thorough comprehension of the study matter, not just recall or recognition, and the questionnaire was administered 1 month after the experimental sessions. Results revealed that when dyads worked with complementary texts (positive resource interdependence), perceived partner competence was positively related to a delayed measure of learning, as it should be in a genuine cooperative learning setting. In other words, the more competent the partner was perceived, the higher the learning outcomes score. Indeed, partners who are considered as more competent are more inspiring and more instrumental toward better learning. On the contrary, when dyads worked with identical texts (resource independence), perceived partner competence was negatively related to learning. In this case, a competent partner represented a threatening comparison target and reduced learning. Importantly, these results were replicated in a study conducted with primary school children (see Buchs & Butera, 2015). In this work, actual performance of the partner was measured (number of correct pieces of information and explanations provided), instead of perceived partner competence, but the results of the two studies followed the same pattern as the results of Buchs and colleagues (2004).

Buchs and Butera (2009) also provided experimental evidence of this phenomenon in a study that manipulated the partner's competence. A confederate entered the laboratory with the participant and was assigned the role of summarizer for the first text, whereas the participant was to play the role of facilitator. The roles were reversed for the second text, but the measure of interest is the learning test for the first text. Indeed, the confederate had been instructed to deliver a summary that was either brilliant or average, depending on the condition. Even though the content was identical in all conditions, in the brilliant condition the confederate came with a very well-organized summary, with headings and well-defined technical terms. The confederate's notes started with an introduction, elaborated on all the important notions, and concluded on the most important information. In the average condition, the confederate came with quite a disorganized summary, often went back to a previous matter because of omissions, and used approximate terms. The results confirmed those of Buchs and colleagues (2004): When the dyad worked with complementary texts (positive resource interdependence), a brilliant partner induced better learning than an average partner, whereas when the dyad worked with identical texts (resource independence), a brilliant partner induced worse learning than an average partner. Thus, a competent partner, who should have represented an informational support in all conditions, appeared to promote learning outcomes only in the positive interdependence condition (for similar findings, see Neugebauer, Ray, & Sassenberg, 2016).

Competence Threat

In the studies by Buchs and colleagues (2004) and Buchs and Butera (2009), the interpretation of results is based on the idea that, notwithstanding the positive goal interdependence of a cooperative setting, a threatening social comparison may take place under resource independence, which would explain the detrimental effects that were found. A further study directly addressed the question of competence threat (Buchs et al., 2010). The main experiment in this article manipulated, as before, the way resources were distributed, as well as focus on social comparison, by allowing or not allowing students to take notes. The rationale for the latter manipulation was that notes allow direct comparison and confrontation of responses, which was confirmed by a pilot study. Results showed that a focus on social comparison did reduce learning, but in the resource independence condition and not in the positive resource interdependence condition. Moreover, and most importantly for the present contention, this effect was mediated by competence threat, namely, an aggregate measure that referred to the participants' concerns regarding the social comparison of competences with the partner. Thus, it appears that resource independence, as opposed to positive resource interdependence, leads partners to make sense of social comparison in terms of potential threat—a comparison that might be problematic for one's competence—which results in reduced learning.

These results are consistent with those of Ray, Neugebauer, Sassenberg, Buder, and Hesse (2013, Study 3), where participants who were not concerned by evaluative pressure (either positive or negative) achieved better learning outcomes when they were made aware of the possible positive resource interdependence with the partner (awareness of the partner's knowledge), than when they were not. To summarize, the results of Buchs et al. (2010) suggest that the benefits of cooperative learning require a carefully designed classroom setting to emerge: Distributing identical information to partners (resource independence) resulted in competence threat and reduced learning outcomes even in a cooperative setting with positive goal interdependence that should promote learning.

Box 8.5 Question for Elaboration

In professional settings, it often happens that employees are required to work in teams and are given a background training on the whole of the task at hand, which corresponds to possessing identical information. How can a supervisor prevent that the inevitable issues of relative status of team members interfere with the work to be completed?

The Promotion of Cooperative Methods

According to Deutsch (1985), it is much easier to move from cooperation to competition than to revert from competition to cooperation. Indeed, in Western industrial countries, competition is pervasive, not only from an economic point of view but also when considering the dominant values of these countries. Accordingly, Schwartz (2007) has shown that self-enhancement values (wealth, power, achievement) are typical of countries with a capitalistic economy, especially those with more deregulated forms of capitalism (see also, Pulfrey & Butera, 2013). Western industrialized countries are also more likely to display a population with independent selves, as compared to Eastern countries where people's selves tend to be more interdependent (Markus & Kitayama, 1991). Moreover, the functioning of educational institutions, from school to university, is based on practices that induce competition among students (e.g., grading; cf. Black & Wiliam, 1998; Pulfrey, Buchs, & Butera, 2011), and students have learned that setting competitive achievement goals for themselves may be useful to succeed (e.g., Darnon, Dompnier, Delmas, Pulfrey, & Butera, 2009; Dompnier, Darnon, Delmas, & Butera, 2008).

In such a competitive environment, it is possible that implementing cooperative learning might seem at loggerheads with the values and practices of a given educational institution,

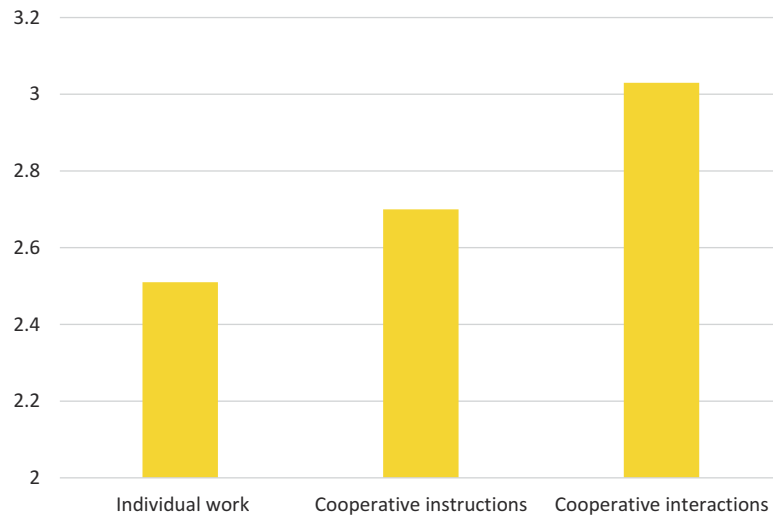

Fig. 8.2 Learning outcomes as a function of work condition. (Adapted from Buchs et al., 2016). Note. The learning measure ranges from 0 to 6

which might reduce acceptance of this method or lead to its failure. Thus, cooperative methods cannot be merely proposed or implemented; it must be promoted. In this respect, Buchs (2017) has highlighted an important distinction within the elements that constitute cooperative learning. She explained that elements such as positive interdependence or accountability are important because they structure the way cooperative learning is actually organized in groups, while some others such as social skills, group processing, and climate are important because they prepare the group members to interact cooperatively. In other words, a rigorous cooperative structure should be accompanied by some training, in order to allow students to move from an otherwise competitive environment to a cooperative setting (see also Webb, 2009).

With this in mind, Buchs, Gilles, Antonietti, and Butera (2016) devised an experimental intervention intended to promote cooperative learning in an area in which students experience great difficulties: statistics (Tomasetto, Matteucci, Carugati, & Selleri, 2009). The intervention was carried out during a statistics course, where it was presented as a study on how students process information about statistics. During a 90-minute workshop, students reviewed the materials from the previous week (set theory), worked on two exercises related to the theory—allegedly as a training for the individual learning test— and finally sat the learning test, which was then used as the main dependent variable. The learning test included two types of questions: (a) a replication of the exercises completed in the previous steps of the study, but using new data (data not discussed during the statistics lecture); and (b) completely new exercises that required the generalization of the mathematical principles of set theory to a real-life situation.

The independent variable was manipulated during the exercise phase. The *individual work condition* (independence) was a control condition in which students worked alone on their study materials and exercises and was intended as a baseline that corresponds to the most common study strategy at university. The other two conditions involved working cooperatively in dyads. In both conditions, the experimental instructions introduced positive goal interdependence, individual responsibility/accountability, and encouragement of promotive interactions (Fig. 8.2). The *cooperative instructions condition* only included these instructions and corresponded to the basic structure implemented in cooperative learning. Finally, the *cooperative interactions condition* included the same three elements, but also introduced a "cooperative nudge," which consisted of two components. (1) The first component was introduced by a short text explaining the value of cooperation and the virtues of active listening and discussion. As

Table 8.2 Cooperative skills introduced in the cooperative interactions condition

How to translate cooperative skills into action	How to translate cooperative skills into words
I explain how I process problems	
• I'm involved in the discussion. • I try my best to be as clear as possible.	• I explain the different steps ("I start by …, then I …"). • I explain my rationale ("I do it because..."). • I explain my strategies. • I explain how I concretely do something.
I check that I understand the way my partner processes problems	
• I encourage my partner to develop his/her ideas. • I let my partner explain without stopping him/her. • I listen to my partner's proposition even when I don't agree.	• I express my understanding ("All right, I understand"). • I express my difficulties ("I do not understand; could you please explain again?"). • I reformulate what my partner says in order to be sure I understand. • I ask questions to invite my partner to be more explicit. • I check for potential problems.
I suggest alternative ways to process the problems	
• I'm involved in the discussion.	• I suggest some alternatives ("and what if we started by… I would rather do …") • I propose different alternatives.

From Buchs et al. (2016), reproduced with permission

mentioned earlier, cooperative values are not the default culture of university students in Western countries. (2) The second component was a series of recommendations inviting students to display three cooperative skills: "(a) explain how one processes problems, (b) be sure to understand the way the partner processes problems, and (c) suggest alternative ways to process problems" (Buchs et al., 2016, p. 965; Table 8.2). As mentioned earlier, active cooperation is not the default behavior among students.

The results revealed a linear trend in the pattern of learning outcomes across the three conditions, with the individual work condition scoring the lowest, followed by the cooperative instructions condition, and then by the cooperative interactions condition (Fig. 8.2). Interestingly, competence perception was also measured, through three items ("I realized that I had understood some things," "I felt I was able to master the work," and "I felt I was competent"). The results revealed that competence perception progressed in the same direction as learning outcomes, and that it mediated the effect of the experimental conditions on learning.

To conclude, this study shows that instructors may be well advised to prepare students to cooperate, before implementing cooperative learning, as cooperation is neither a value nor a common practice in education. This conclusion illustrates one of the main pitfalls in the use of cooperation in education, namely, the difference between structured and unstructured cooperation. The work on cooperative learning has long shown that "spontaneous" cooperation—simply relying on the encouragement to cooperate—does not hap-

Summary

- The nature of goal structure in groups affects group members' perceptions and behaviors, which in turn influence their learning outcomes.
- People interact cooperatively in groups when they perceive positive goal interdependence, or competitively when they perceive negative goal interdependence. With independent goals, they work individually.
- Cooperation requires positive goal interdependence, but also group members' responsibility and accountability, interactions directed toward the promotion of the partners, the use of social skills, and critical reflection upon group processes.

- Cooperative methods favor learning outcomes, psychological as well as social adjustment, and positive relationships, as compared to competitive and individualistic methods.
- Cooperation is vulnerable to threatening social comparison: Interactions among group members that focus on relative status instead of the task may reduce the beneficial effects of cooperation.
- Cooperation is not socially and culturally valued in Western countries, and therefore cooperative learning requires training and promotion.

pen in most educational and work settings: Cooperative methods have been developed precisely to provide a structured environment that facilitates cooperative communication, information sharing, and relationships (e.g., Johnson & Johnson, 1999; Tjosvold, 1984). The research reported in this section contributed to this endeavor by highlighting the importance of preparing students and workers to cooperate in order to counter, to some extent, the prevalently competitive routines they have acquired. The results presented here show that a brief intervention may be effective, but Buchs et al. (2016) also noted that the effect size they observed is rather small. This implies that longer or more frequent interventions may be needed.

Recommended Reading

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Guiding Answers to Questions in the Chapter

1. Q (with Box 8.1): Imagine a cohesive and cooperative volleyball team. Give an example describing how substitutability, positive cathexis and inducibility intervene during a match.

   A: During a smash from the other team, player X's effective dive to catch the ball reduces player Y's need to intervene (substitutability); this results in Y trusting X during the following action (positive cathexis) and avoiding to dive at the same time as X (inducibility).

2. Q (with Fig. 8.1): Why are responsibility and accountability important to cooperation? What do they add to positive goal interdependence?

   A: Because, even in a group that pursues a common goal, some members may be tempted to free ride and benefit from the group's work without investing some effort.

3. Q (with Box 8.3): Could cooperative learning be used to integrate migrant children in the host country's regular classes?

   A: Cooperative learning has been shown to be helpful in improving the learning and interper-

sonal relations in groups with ethnic diversity, and in groups with differences in ability.

4. Q (with Box 8.4): Teachers often call one of the pupils in front of the class to read a particularly well written essay. In which circumstances will this pupil be inspiring? Which will be threatening?

   A: If this pupil is a possible companion (e.g., a future partner for an assignment), s/he will be perceived as a source of inspiration. If the pupil is a possible rival (e.g., the teacher's pet), s/he will be perceived as a source of threat.

5. Q (with Box 8.5): In professional settings, it often happens that employees are required to work in teams and are given a background training on the whole of the task at hand, which corresponds to possessing identical information. How can a supervisor prevent that the inevitable issues of relative status of team members interfere with the work to be completed?

   A: Divide the task and the resources in complementary chunks and distribute them to different employees with complementary roles.

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Social Identity Theory

9

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The Groups in You

Think for a moment about the different groups you belong to. Which groups come to mind? Maybe a sports team, your gender, the community in which you grew-up, a group of study-friends, an online community where you play games, or the political party you voted for during the last elections. Or maybe you even think about a very abstract category, like left-handers. When reflecting on these groups, what do you think about? And what do you feel?

When reflecting on the groups you belong to, you likely discover that you are not only a part of these groups but that these groups are also a part of you. That is, group membership (partly) defines your identity: Groups tell us who we are (and who we are not). Relatedly, groups also partly determine our feelings. We can have a mild, warm feeling when thinking about our fellow group members but can also feel anger when our group is mistreated or guilt when in-group members mistreat others.

The thoughts and feelings that arise when you think about the groups you belong to form your **social identity**. More precisely defined, social identity is "that part of an individual's self-concept which derives from knowledge of membership in a social group (or groups) together with the value or emotional significance attached to that membership" (Tajfel, 1978, p. 63).

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Definition Box

Social Identity: "That part of an individual's self-concept which derives from his knowledge of his membership in a social group (or groups) together with the value or emotional significance attached to that membership" (Tajfel, 1978, p. 63)

The current chapter provides an overview of the main theoretical perspective on social identity, namely, social identity theory (SIT; Tajfel & Turner, 1979). SIT is a rich theoretical perspective integrating group psychology with psychology about the self. The theory also has substantial practical value and has been used to analyze important issues in organizations and society at large and to design interventions. In the current chapter, we focus in particular on applications in the context of health and organizational psychology. We conclude by describing a social identity-based intervention for improving intergroup relations in an educational setting. Before describing these fields of application in more detail, in the next section, we first outline the principles of SIT.

The Principles of Social Identity Theory

Social identity theory roughly consists of two parts. The first, more basic psychological part, describes the cognitive processes underlying social identity definition and the motivational assumption that people strive for a positive social identity. The second, socio-structural part describes how people cope with a negative social identity. Before discussing these two parts, we first provide a short historical background, by describing the "minimal group experiments" that stimulated the development of SIT.

Groups, Just in Their Minds

In the early 1970s, Henri Tajfel, a cognitive psychologist at the University of Bristol, England, who would become the founding father of SIT, conducted research on the minimal criteria for group formation and the minimal conditions for in-group favoritism to occur. To this end he designed a clever experimental setup where groups were stripped-down to their basic cognitive essence. Students who participated in the experiments were allocated to one of two groups, ostensibly on the basis of their preference for either the painter "Klee" or "Kandinsky." This was actually the only information that participants had: That there were two groups, and they were a member of one of them. There was no interaction within or between the groups; the groups thus only existed in the participants' minds, and in that sense they were truly "minimal." After being assigned to one of the groups, participants allocated small amounts of money between anonymous members of the "Klee" and "Kandinsky" group (excluding themselves). The results of these resource allocations indicated that participants favored people of their own group above those who had been assigned to the other group (Tajfel, 1970).

Definition Box

Minimal Group: Membership of a minimal group is based on a relatively arbitrary criterion, like being an "overestimater" or an "underestimator" on an estimation task or simply resulting from a flip of a coin (Heads, "group A"; Tails, "Group B"). Moreover, in the classic minimal group paradigm, group members are anonymous, and there is no interaction within or between the groups. As a result, minimal groups are purely cognitive, i.e., they only exist in the minds of the group members. This means that minimal groups are socially meaningless outside the direct experimental context: they do not have a past nor a future.

The findings of the **minimal group** studies were surprising because they conflicted with the main perspective on intergroup relations by the time: realistic conflict theory (Sherif & Sherif, 1969). According to that perspective, real conflict over scarce material resources (money, housing, food) was necessary for intergroup conflict to arise. Although the participants in the minimal group studies allocated more money to their own group than to the other group, there was no way in which the person himself or herself could directly profit from this. Later studies also showed that such in-group bias in the minimal group paradigm emerges along more symbolic dimensions, for example, when rating the in-group and out-group on traits or when rating artistic products made by in-group and out-group members (Scheepers, Spears, Doosje, & Manstead, 2006). This all suggested that real conflict over material resources is not necessary for in-group favoritism to emerge. But what could then account for it?

Box 9.1 Questions for Elaboration: Your Money or Your Identity?

Social identity theory and realistic conflict theory stress different primary factors underlying intergroup attitudes: social identity stresses identity, whereas realistic conflict theory stresses material resources. Think for a moment about negative attitudes toward migrants. Which arguments related to identity or instrumental factors are typically put forward? Then think about the striding European integration. Which instrumental or identity factors play a role in attitudes toward the European Union?

From Category to Identity

To explain the results of the minimal group experiments, Tajfel proposed that the persons had categorized themselves as a member of the minimal category they had been assigned to, the Klee or Kandinsky group. That is, the group had become part of the person's identity. But how could this explain in-group favoritism? Tajfel argued that people strive for a *positive* social identity, just as they strive for a positive personal identity (the part of identity that makes you a relatively "unique" individual). In the absence of further information about the value of the group, showing in-group favoritism was the only way in which people in the minimal intergroup situation could positively differentiate the in-group from the out-group. Thus, striving for positive group distinctiveness, and thus a positive social identity, explains in-group favoritism in the minimal group paradigm.

The more general and basic psychological processes underlying social identity definition and striving for a positive social identity, which form the heart of SIT, are displayed in Fig. 9.1. The theory starts with the notion that social categorization, i.e., dividing the social world into groups, is by definition *self-relevant*: You always belong to one of the two social categories or a third (e.g., outsider) category. For example, when seeing two crowds of football fans, this may make salient your identification with one of these teams, a third team, or even with the category of people "not interested in football." For each of these possibilities, the basic cognitive social categorization process implies a part of your identity. This self-categorization in combination with the motivation for a positive social identity elicits social comparison with relevant out-groups aimed at positively differentiating the in-group from these out-groups (Tajfel & Turner, 1979).

Box 9.2 Zooming In: Preventing Discrimination by Expanding "We"

Social identity theory describes how identity motives can form the basis of in-group favoritism. Can the same identity principles also be applied for intervening intergroup conflict? The common in-group identity model (Gaertner & Dovidio, 2000) does

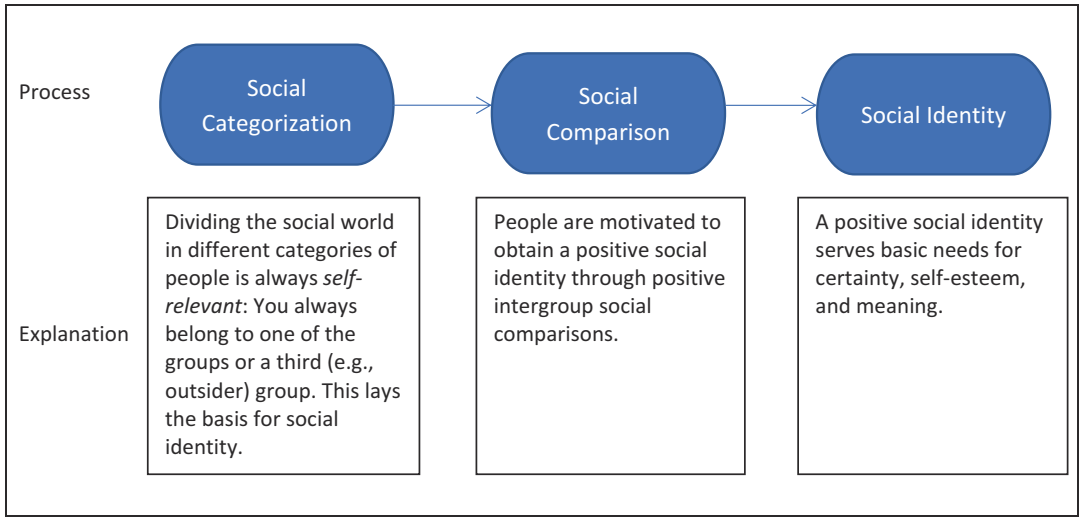

Fig. 9.1 Social identity definition

indeed suggest they can. More specifically, the model shows that bias by members of one group (e.g., psychology students) toward members of another group (e.g., physics students) can be decreased by making a common identity salient (e.g., "Tübingen university students"). Thus, by expanding the inclusiveness of the in-group by means of a higher level of social categorization, in-group bias can be decreased. Recent work has shown that creating a common in-group identity is particularly effective in reducing bias when it is combined with simultaneously stressing the ties with the subgroup and the overarching common identity (e.g., "Tübingen psychology students"). Such "dual identities" work particularly well because they secure subgroup distinctiveness while at the same time creating common ground with the out-group (Dovidio, Gaertner, & Saguy, 2007).

When successfully differentiating the in-group in a positive way from out-groups, this contributes to a positive social identity. Such a positive sense of self does in turn serve basic human needs like the need for certainty and the need for self-esteem. Moreover, by partly defining the place of the individual in the social world, creating positive group distinctiveness also serves the search for meaning: it tells us who we are (and who we are not), where we belong, and how we should behave (Abrams & Hogg, 1988; Scheepers et al., 2006).

Thus, the basis of SIT is formed by cognitive processes (categorization, social comparison) in combination with the motivation to obtain a positive social identity. However, as illustrated with our opening examples, there are also important affective aspects to social identity. Indeed, more modern conceptualizations of social identity distinguish among different components of social identity, like cognitive components (self-categorization or self-stereotyping), affective components (self-esteem or satisfaction), and behavioral components (group commitment or solidarity) (Ellemers, Kortekaas, & Ouwerkerk, 1999; Leach, Ellemers, & Barreto, 2007; Ouwerkerk, Ellemers, & De Gilder, 1999). These different components are also reflected in the different items and scales that are typically used to measure identification (see Table 9.1).

At this point you may wonder "what's then so social about social identity theory"? Indeed, these intrapersonal cognitive processes and motives for certainty, esteem, and meaning might

Table 9.1 Different dimensions of social identification with typical items

Dimension	Example item
Solidarity	I feel committed to [in-group].
Satisfaction	I am glad to be [in-group].
Centrality	I often think about the fact that I am [in-group].
Individual self-stereotyping	I have a lot in common with the average [in-group] person.
In-group homogeneity	[In-group] people have a lot in common with each other.

From Leach et al. (2008)

seem more or less individualistic in nature. However, social identity theory is truly a social psychological theory, because, according to the theory, the social context (partly) determines which part of (social) identity is salient at a given moment. For example, your identity as member of a sports team is more likely to be salient during a close game against a rival team, while your personal identity is more likely to be salient when socializing with your teammates after the game (Tajfel & Turner, 1979). Thus, the social context is key to SIT in explaining which part of one's (social) identity becomes salient at a given moment.

When a Social Identity Is Negative

The social character of the theory is also echoed in the second part of social identity theory, the social-structural part. This part basically deals with the issue of how people respond to having a negative social identity.

One aspect in which minimal groups are minimal is that they are neutral in terms of their valence. Natural groups, by contrast, do typically have evaluative connotations. That is, some groups are generally respected and enjoy a high social status (e.g., physicians), whereas other groups have low status, sometimes even to the extent that they can be regarded "stigmatized groups" (e.g., the unemployed). Because SIT predicts that people are generally motivated to achieve a positive social identity, members of low status groups should be motivated to improve the social standing of their group. By contrast, members of high status groups should be particularly motivated to protect the social standing of their group (Scheepers, 2009; Turner & Brown, 1978).

For example, imagine that you are a player in a hockey team that, for the third year in a row, finds itself at the bottom of the league. How would you feel, and what would you do? The group's bad performance likely has a negative impact on the team members' social identity. How can they cope with this threat? Social identity theory describes three options. The first one, *individual mobility*, involves trying as an individual to seek entrance to a higher status group like another hockey team, or even club. The second option, *collective action*, involves working as a group for status improvement. Your team may engage in team-building activities to increase cohesion, or schedule more training sessions. As a result, the team may be able to do better and increase its status in the next season. The third option is to be *socially creative* and to change the comparison group ("although we ended at the bottom of the second league, we are definitively better than those in the third league") or the dimension of comparison ("although we are not brilliant at hockey, we are definitively the most fun team in the league, and hey, in the end, what is amateur sports all about?").

In addition to the distinction between the different ways to cope with a negative social identity, SIT also specifies the factors determining which strategy is likely to be used. Classic SIT describes three socio-structural variables that determine which coping response is chosen: the *permeability* of group differences (is moving to another group possible?) and the *legitimacy* and *stability* of the status differences (are the status differences fair, and is change possible?; Ellemers, 1993; Tajfel & Turner, 1979).

When do people engage in collective action, and when do they engage in individual mobility? (see Fig. 9.2). For individual mobility to be possible in the first place, the group must be permeable, which is the case for sports teams but less so for social categories like gender and ethnicity. When boundaries are closed, the stability and legitimacy of the status differences play an important role in whether one opts for collective

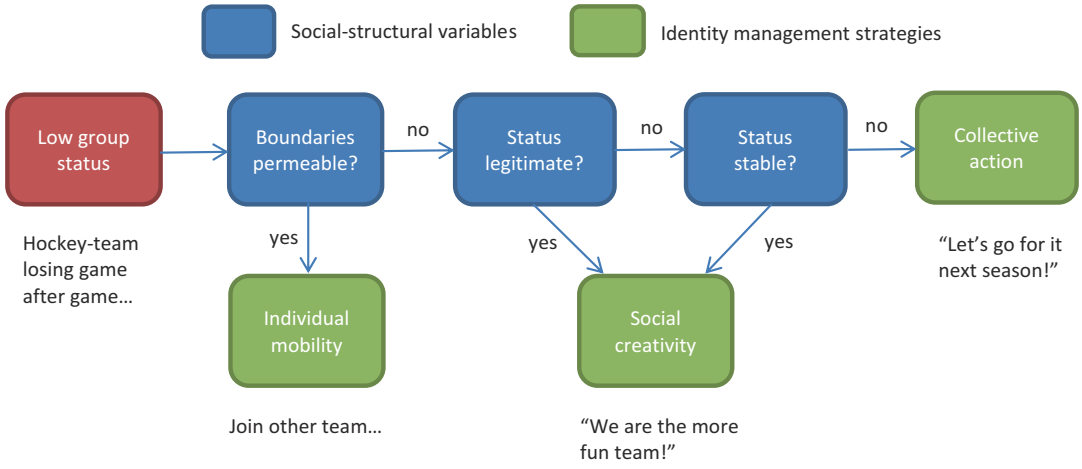

Fig 9.2 Social-structural variables and identity management strategies

action or social creativity. When status differences are illegitimate ("the referees have been consistently biased against our team") and unstable ("we attracted a couple of good young players"), collective action will become more likely; when low status is legitimate and stable, however, social creativity becomes more likely ("we are the more fun team"). Thus, social identity threat is an important motivational principle determining, for example, whether one *flees* from the group individually or *fights* the status quo as a group (Ellemers, 1993; Tajfel & Turner, 1979).

This concludes our description of the basic principles of social identity theory. In the next sections, we describe two important domains of application of the theory: health and organizations.

Applications to Health

Social identification has important implications for (improving) mental and physical health (Haslam, Jetten, Postmes, & Haslam, 2009). In this section we briefly describe two ways in which social identity shapes health outcomes: the influence of group identification on health behavior and the influence of group identification on stress reduction.

Members of the lower social classes or ethnic minority groups suffer from more negative health outcomes compared to members of the middle-class or ethnic majority groups (e.g., Braveman, Egerter, & Williams, 2011). Part of this relationship is explained by social identification. For example, research has indicated that members of racial minority groups in the USA were particularly likely to associate health behaviors like exercising, eating healthy, and getting enough sleep, with the white middle class. As a tragic consequence of this, after making their ethnic identity salient, ethnic minority group members showed a greater "health fatalism," i.e., a belief that it will be of no use to engage in a more healthy lifestyle (Oyserman, Fryberg, & Yoder, 2007).

Social identity can also be used to stimulate positive health behaviors, however. A study on anti-smoking advertisements demonstrated that their effectiveness partly depends on the extent to which a message is framed in terms of the target's social identity (Moran & Sussman, 2014). Participants in this online questionnaire study were adolescents, who first indicated on scales how much they identified with 11 possible peer groups (e.g., "emo," "hip-hop-er," "skater"). In turn they viewed an advert that displayed two anti-smoking beliefs (e.g., "Tobacco company executives have called younger adult smokers 'replacement smokers'"). A graphic designer had created 11 different versions of the adverts to fit each of the peer groups. Specifically, next to the

statement, two persons (an adolescent boy and girl) were displayed who had the prototypical features of a particular peer group (e.g., two typical skaters). Then, one week later the participants indicated their agreement with the two anti-smoking belief statements. Results indicated that a stronger identification with a certain peer group led to more endorsement with the statements. Thus, "customizing" a health message to fit a target's social identity increases the effectiveness of the message.

A second way in which social identification influences health outcomes is through its stress-attenuating function. For example, Haslam, O'Brien, Jetten, Vormedal, and Penna (2005) examined stress in Norwegian heart patients who were recovering from heart surgery in a clinic. Participants filled in a questionnaire measuring their identification with family and friends (e.g., "I identify with my family/friends"), received social support (e.g., "Do you feel you get the emotional support you need"?), and stress (e.g., "Are you stressed?"). Results indicated that identification with family and friends was inversely related to stress. Importantly, social identification was positively related to social support, and the negative relation between identification and stress was mediated by social support.

Identification may also have a positive effect on well-being when the group itself forms the basis of stress. According to the rejection identification model (Branscombe, Schmitt, & Harvey, 1999), group-based rejection initially threatens one's self-esteem, but through a strengthened identification with the group, the person can in turn cope with the stress, eventually leading to restored self-esteem. In line with the model, Branscombe and colleagues showed that when Black Americans thought about discrimination against their racial group, this initially led to depressed self-esteem. However, this social identity threat led in turn to a strengthened ethnic identification, which then led to higher self-esteem (see Schmitt, Branscombe, Kobrynowicz, & Owen, 2002, for similar effects regarding gender groups).

Thus, the above research suggests that a social identity perspective is not only useful for making health campaigns more effective but also for designing interventions to reduce stress. An obvious context for applying these insights is the work context, where people may experience considerable amounts of stress. Indeed, the work by Haslam et al. (2005) suggests that by raising support and social identification, teams can become more resilient against stress. In addition to such interventions for work stress, the social identity perspective has offered considerable insights in other themes in organizational psychology. These themes are discussed in the next section.

Applications to Organizational Psychology

Most people spend a large part of their time interacting with each other in groups, when they are at work in organizations. Accordingly, it has been argued that the insights offered by social identity theory can help understand the thoughts, feelings, and behaviors of individuals working in teams and organizations (e.g., Ashforth & Mael, 1989; Haslam & Ellemers, 2005; Haslam, Van Knippenberg, Platow, & Ellemers, 2003; Hogg & Terry, 2000). In this section, we demonstrate the added value of considering employees in terms of their group-based identities – instead of treating them as separate individuals – in addressing a number of problems faced by many work organizations.

Box 9.3 Questions for Elaboration: What Do you Identify with at Work?

When you think about finding an organization to work in as a professional, what would be most important criterion for you? Does this differ from what you seek in your current (side-)job? How happy are you with your employment conditions and with the way you are treated by your manager? Which is more important for your motivation to perform as best you can?

Table 9.2 Organizational topics, applications, and implications of insights from social identity theory

Organizational topic	Identity relevance	Main concern	Behavioral implication	Representative publication
Leadership in organizations	Cognitive categorization	Defining a shared identity	Common goal pursuit	Haslam, Reicher, and Platow (2011)
Organizational protest	Cognitive categorization	Dealing with inequality	Individual mobility vs collective action	Veenstra and Haslam (2000)
Employee attraction	Evaluative judgment	Material vs identity benefits	Recruitment and retention	Ashforth and Kreiner (1999)
Customer loyalty	Evaluative judgment	Being a valued supplier	External image protection	Malone and Fiske (2013)
Motivation and performance	Emotional commitment	Individual vs team incentives	Exploiting the organization vs going the extra mile	Ellemers, De Gilder, and Van den Heuvel (1998)
Communication and decision-making	Emotional commitment	(virtual) Team building	Displays of (over-) commitment, group think	Postmes, Tanis, and De Wit (2001)
Diversity and inclusion	Identity change	Dealing with a negative identity	Discrimination and exclusion	Danaher and Branscombe (2010)
Organizational mergers	Identity change	Lack of respect and belonging	Competition and compliance failure	Terry, Carey, and Callan (2001)

The added value of applying insights from social identity theory has been demonstrated for a range of common challenges faced by organizations (see Table 9.2), for which we will give some examples below. These relate to:

(a) Cognitive *categorization* of the self as a member of the organization (How can leadership connect individual employees to work toward common goals? When will differentiation in employee rewards enhance individual ambitions or invite protest?)
(b) *Evaluative* judgments of the organization (Which organizational features are important to recruit and retain employees? Which help secure customer loyalty?)
(c) *Emotional* commitment to the organization (How to motivate workers to go the extra mile? How to create a sense of belonging when employees only communicate online?)
(d) Identity *change* (How to accommodate minority employees? How to secure cooperation through an organizational merger?)

Leaders Can Define a Shared Identity

Many companies use performance evaluations and incentives that compare workers against each other, for instance, to determine who receives a bonus or qualifies for promotion. This is generally seen as a legitimate and effective system to motivate employees to work hard. However, the downside of such practices is that they foster competition between individuals and emphasize their *personal identity*, inviting people to think of themselves as individual workers, instead of as parts of a larger team or organization. If you work in a call center, for instance, where employee performance is rated by the speed at which you are able to take new calls, would you invest in providing the best possible service to each caller, so that they are satisfied and perhaps purchase additional services from the organization, or would you focus on completing each call as quickly as you can?

An important challenge for leadership in cases such as this is to help individual employees build and retain a sense of identification with the team or organization. This can enhance their willingness to work toward shared goals – such as maintaining long-term relations with satisfied customers (Ellemers, De Gilder, & Haslam, 2004). Indeed, employees are more inclined to follow the guidance of leaders if they clearly support the preferences of their own team members (e.g., making sure they have enough information to provide satisfactory answers to questions they receive) and protect them against claims of other teams or organizational members (e.g., that the people at the call center work too slowly).

Leaders who are able to do this well allow workers to self-categorize at the group level instead of the individual level (Haslam & Platow, 2001).

This also implies that those with formal positions of power are not necessarily the ones who are most influential in guiding the organization and its members. The possibility they have to decide about business strategies, enforce requests, or afford resources gives them control over the outcomes of employees. However, it is the ability of leaders to connect, engage, and inspire others that causes employees to follow their guidance. More often than not, this is enhanced by their willingness to acknowledge and transform important concerns of individual employees (e.g., their frustration of having to mind the time when answering customer requests) and to define how shared team or organizational goals contribute to fulfilling the goals and ambitions of individual workers (see also Haslam et al., 2011).

Box 9.4 Zooming In: The Costs of Competing Against Each Other

Organizations where workers are encouraged to compete with each other for customers and resources hope to optimize the profits and efficiency of the company in this way (Victor & Cullen, 1988). Studies with many different professional groups and companies across the world have revealed the drawbacks of this motivational strategy, which is typically associated with reduced work satisfaction and **organizational commitment** among workers. Further, rewarding workers for the individual performance they show, without taking into account how they achieved this performance, has been found to elicit a range of unethical work behaviors. These include lying, stealing, misreporting results, falsifying reports, accepting bribes, and bullying in the company (Martin & Cullen, 2006; Simha & Cullen, 2012).

What Makes for an Attractive Workplace?

Unfortunately, many organizations have a limited view on what determines the value people attach to their place of work. Human resources and recruiting officers tend to emphasize material gains, such as personal career opportunities, compensation packages, or other employee benefits when recruiting new employees. However, different studies have found that these are not the only things that matter. Instead, the main thing people want to know before they apply for a job is whether this can make them proud of their organizational identity. Organizations with high prestige reflect positively on the self-conceptions of employees and enhance their identification with the organization (Smidts, Pruyn, & van Riel, 2001).

Organizational prestige and feelings of pride in belonging to the organization do not necessarily depend on its financial successes or business reputation. Instead, those who consider working for the organization mainly have an interest in knowing whether the organization supports important values. For instance, it has been established that workers are more satisfied and committed to the organization when they perceive organizational management to be truthful in communicating with employees and stakeholders and to engage in socially responsible business practices (Ellemers, Kingma, Van der Burgt & Barreto, 2011; Van Prooijen & Ellemers, 2015). As a result, even individuals who work in sectors that are often seen as having low prestige (such as garbage collectors, undertakers, or sex workers) can take pride in their profession and identify with the organization that employs them, by focusing on important societal functions they fulfill, for instance, by averting public health threats, or by offering emotional support to lonely people (Ashforth & Kreiner, 1999).

Definition Box

Organizational identification and commitment: Although the term "organizational identification" is often used in the

management literature, this is often defined and measured differently than in social identity theory. Importantly, management studies often separate cognitive self-categorization (which they consider to capture the "organizational identity" of employees) from emotional involvement with the organization (which they indicate as "organizational commitment") and conclude that identity is less relevant than commitment to predict behavior in organizations. This is different from the notion of the "group-based-self" in social identity theory, which incorporates self-categorization *as well as* commitment as essential components of a social identity

Going the Extra Mile

The importance of a common social identity for motivation and performance at work has been demonstrated in many studies. Again, selfish concerns, such as the fact that workers depend on each other to achieve valued outcomes, appear less important than a sense of emotional involvement and subjective feelings of commitment to one's team and the organization (see also Butera & Buchs, Chap. 8 this volume). This was observed, for instance, among Dutch soldiers on a UN peacekeeping mission. Here it was found that the more soldiers in military teams felt that they were respected and included, the more likely it was that their commanders considered the team ready for combat (Ellemers, Sleebos, Stam, & De Gilder, 2013). The power of noninstrumental factors in connecting and motivating people at work is further demonstrated in studies among volunteers. Their sense of identification and commitment to the volunteer organization and its mission motivates them to work even without pay (e.g., Boezeman & Ellemers, 2008). This also means that it can be very costly for organizations to prevent employees from developing such a sense of emotional involvement, for instance, by failing to acknowledge and include them as valued members of the organization. This can happen in sectors where it is common practice to offer flexible, part-time, or limited duration work contracts only (see also Ho, 2009). Even if this may seem a good way to optimize employment efficiency, such organizations cannot expect workers to develop a sense of common identity or to "go the extra mile" to achieve outcomes that are important for the organization. Surely you would not be willing to work overtime to meet a deadline or help instruct new co-workers, after having been told your contract is not extended because someone with your level of experience is considered "too expensive" to retain.

Box 9.5 Zooming In: The Dangers of Overcommitment

In itself, a strong team or organizational identity is no guarantee for an optimal performance at work (see also Ellemers et al., 2004). In fact, a strong shared identity may tempt workers to cover up each other's mistakes or encourage each other to take it easy. At the other end of the spectrum, people who overcommit to their work identity may be quite productive for a while but are unlikely to be able to keep this up indefinitely. In the long run, the social and personal sacrifices people make when they focus on their work identity alone can prevent them from investing in other important identities, for instance, relating to family, friends, sports, or cultural activities (Faniko, Ellemers, Derks, & Lorenzi-Cioldi, 2017).

Managing Diversity

Even in organizations that are aware of the importance of connecting people and encouraging them to develop a shared identity, there may be additional difficulties to overcome. An important challenge in this sense is offered by changing

workplace realities, which are characterized by increasing diversity among workers. Being able to recruit the inputs from people with different cultural backgrounds, types of training, or life experiences can be a valuable asset to many companies. However, if not managed well, such differences in the type of knowledge and experience people bring to work, as well as more immediately visible differences in their gender or skin color, can easily become a source of misunderstanding and divisiveness. These features that separate workers or cut across common team or organizational memberships can induce (implicit) discrimination and make those who differ from the majority feel excluded (for a discussion of implicit prejudice and discrimination, see Wittenbrink, Correll, & Ma, Chap. 11 this volume). The challenge for leadership is to make sure that such alternative identities are acknowledged and recruited into a common overarching identity. This can be achieved, for instance, by clarifying how such differences can form a resource for greater flexibility and creativity (e.g., "we need workers who know how to digitalize our services") or allow the organization to connect to a broader population of clients (e.g., "we need workers who know how to communicate with non-native speakers"; Ellemers & Rink, 2016). Thus, attempts to build a common organizational identity should not ignore such differences. Instead identity-building initiatives do well to emphasize and enhance the different types of contribution workers can make to the organization and what it stands for, instead of letting such differences become a source of disagreement and conflict.

In sum, there is considerable evidence that social identities are important in organizational contexts. At the same time, strengthening a common identity, for instance, through "team-building" activities, is no easy or foolproof solution to make workers feel connected and perform well. To be able to build and benefit from the willingness of individuals to identify with their place of work, organizational leaders do well to reconsider standard business practices that can undermine shared goals and common identities. Making people feel respected and included as valued organizational members – regardless of their differences – making sure that organization and its activities can make workers proud, and taking care not to be too greedy in requesting that workers sacrifice other identities to fit in, all are important challenges that need to be met to be able to connect workers into a happy, healthy, and productive organization.

Intervening to Improve Intergroup Contact and Collaboration

An important theme within social identity research is how SIT principles can be used to improve intergroup relations in a variety of contexts. One of the most influential ideas in this context is that creating a common in-group identity that comprises both in-group and out-group reduces bias toward (former) out-group members (Dovidio et al., 2007; Gaertner & Dovidio, 2000; see Box 9.2). For example, this idea has been used to understand corporate mergers, where a common challenge is often to unify companies that were previously competing against each other, and might have different identities, cultures, and statuses. Understanding the social identity dynamics of such mergers is key for making the merger a success (Terry et al., 2001). Another context where SIT principles have been used to stimulate intergroup helping and cooperation is the educational context. We conclude this chapter by describing a social identity intervention to improve intergroup relations at schools and universities.

One challenge that many schools and universities currently face is the increasing diversity in their student populations. This diversity can take different forms, for example, increasing numbers of students with a migration background or increasing gender diversity in areas that were traditionally male-dominated (e.g., math). How can you stimulate a positive school climate and collaboration in such contexts?

Vezzali et al. (2015) tested a common in-group identity intervention in two educational settings: an elementary school setting (Study 1) and a university setting (Study 2). Participants in

the first study were native-Italian elementary school children. Within different classes participants were randomly assigned to one of three conditions. In the "common in-group condition," participants imagined working together with an immigrant child on a competitive task against another dyad. This condition was compared to two (control) conditions: In the "imagined contact condition," participants had to simply imagine contact with an immigrant child, without working together; In the "control condition," the instructions were as in the common in-group identity condition, but the migration background of the interaction partner was not mentioned. Participants engaged in the imagining task once a week over a 4-week period. The context that participants had to imagine differed from week to week (e.g., sports, theater play). Each time, participants were instructed to close their eyes and take a third-person perspective while imagining the situation. One week after the final intervention task, intergroup helping intentions were measured using a questionnaire (e.g., "Think about an immigrant child who may have problems with writing an essay. Would you help him/her?"). Then, again 1 week after this assessment, the experimenter met individually with each of the participants and further interviewed him/her about helping intentions. More specifically, the participant was informed that a new pupil with an immigrant background would arrive soon at their school, and the participant was asked whether (s)he would be willing to help the new child with integrating at school. Participants were asked about the number of afternoons (between 0 and 4) they would be willing to help out their new classmate.

Results on both helping measures indicated that participants in the common in-group identity condition were more likely to help an immigrant classmate than participants in the control condition. Helping intentions in the imagined contact condition fell in between the common in-group condition and the control condition (for a discussion of imagined contact as a way to ameliorate intergroup relations, see Christ & Kauff, Chap. 10).

These results were replicated in a second study in a university context. This study used basically the same setup as the school study but also comprised a questionnaire measuring common in-group identity (e.g., "Do you perceive Italians and immigrants as members of a common group [residents of Italy]?"). Results indicated, as would be expected, that the common in-group identity measure indeed mediated the positive effects of the common in-group identity intervention on the willingness to engage in future intergroup contact.

Together these two studies illustrate the fruitfulness of a common identity intervention to improve intergroup contact and cooperation in an educational setting. It should be noted that although the intervention itself was relatively simple to implement, its effects were sustainable in that it predicted out-group helping 2 weeks later.

Summary

- Human beings are advanced social animals: People not only form groups; groups also form people. People derive part of their identity from the groups to which they belong, which is called their "social identity." Social identity theory describes how – through social categorization and comparison – people define their social identity and how they strive for a *positive* social identity. The need for a positive and meaningful social identity is served by positive group distinctiveness which contributes to feelings of certainty and positive self-esteem.
- A negative social identity, for example, stemming from membership in a group with a relatively low status, is threatening. People cope with a negative social identity in various ways, like trying to improve the status of the group or seeking entrance in a higher status group.
- Social identity has important implications for health psychology, for example, for customizing health interventions. Moreover, group identification can

buffer against stress and positively contribute to well-being. Social identity has also important implications for how people behave, feel, and cooperate in organizational contexts. For example, social identity plays a key role in motivation, leadership effectiveness, and managing diversity. The creation of a common in-group identity comprising the in-group and a (former) out-group is a widely applied intervention to improve intergroup relations in a variety of settings.

Recommended Reading

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Guiding Answers to Questions in This Chapter

1. Q (Box 9.1): Your Money or Your Identity?

   A: Migrants can be seen as threat to the material resources of the host society, like housing, healthcare, and the sustainability of social security programs. By bringing their cultural habits and religion, migrants are often also seen as a threat to the identity and culture of the host society. The European integration can be seen as a threat to the material resources of the inhabitants of certain rich countries, when they feel having to compensate countries with less well-functioning economies. Moreover, by seemingly blending the unique cultural features of member states, the European Union is also often seen as a threat to national identities.

2. Q (Box 9.3): What Do You Identify with at Work?

   A: People can focus on different aspects of their work as providing them with a source of identification and commitment. Many academics, for instance, primarily identify with their academic discipline or profession (being a physicist, being a historian) and may attach less value to the university or academic institution that employs them. Workers in large corporations may identify with their career development goals (being a management trainee), with their work team (IT department), or with the organization (K-Mart). What people adopt as the primary focus for their professional identity is guided also by the way the organization treats them, the development opportunities, and career prospects they receive. For instance, an organization that only offers flexible or temporary contracts will have more difficulty having its workers develop a sense of identification with the organization. Likewise, leadership communications and incentive programs can lead workers to categorize themselves differently, for instance, as part of a group of experts, work team, or organization.

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Intergroup Contact Theory

10

Oliver Christ and Mathias Kauff

Contents

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Introduction

> It has sometimes been held that merely by assembling people without regard for race, color, religion, or national origin, we can thereby destroy stereotypes and develop friendly attitudes. The case is not so simple. (Allport 1954, p. 261)

The question of how **prejudice** and intergroup conflict can be reduced has been at the forefront of the research agendas in social sciences for many years (see Paluck & Green, 2009; Tropp & Mallett, 2011; see also Wittenbrink, Correll, & Ma, Chap. 11). Not least due to the ever-increasing migration, and as a consequence more ethnically and culturally diverse societies (World Migration Report, 2017), the reduction of (ethnic) prejudice and intergroup conflict is a major challenge for public policy (Hewstone, 2009; Wagner, Christ, & Heitmeyer, 2010). Starting in the 1930s, social scientists proposed that **intergroup contact** – contact between members of different groups – provides a way to overcome intergroup tensions and conflict (for recent overviews, see Pettigrew & Tropp, 2011; Al Ramiah & Hewstone, 2013; Wagner & Hewstone, 2012; for a short historical overview of intergroup contact research, see Pettigrew & Tropp, 2005, Pettigrew, 2016). However, mutual contact between members of different groups is not a panacea for prejudice as already pointed out by

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Gordon Allport (1954, see the starting quote). Allport can be considered as the originator of the intergroup contact theory – in his famous and influential book *The Nature of Prejudice,* he summarized early research on intergroup contact.

The present chapter will introduce intergroup contact theory as one of the most prominent approaches to prejudice reduction within psychology (e.g., Brown & Hewstone, 2005; Pettigrew & Tropp, 2011). In the first part, we will answer the question whether intergroup contact indeed helps to overcome prejudice and, as a consequence, intergroup tensions. Moreover, we will also focus on different forms of intergroup contact (face-to-face contact versus indirect forms of contact). In the second part, we will discuss when and how intergroup contact works. We also focus on undesirable, unintended effects of intergroup contact. Finally, we will summarize research demonstrating how intergroup contact theory can be used to develop systematic interventions aiming to reduce prejudice and, as a consequence, improve intergroup relations, ending the chapter with two examples of such interventions that has been implemented in the context of conflictual intergroup relations (i.e., in Israel and Rwanda).

Definition Box

Intergroup contact: Actual face-to-face interaction between members of different and clearly defined groups.

Prejudice: An attitude toward a group and its members that, like other attitudes, has a cognitive component (e.g., beliefs about a target group), an affective component (e.g., dislike), and a conative component (e.g., a behavioral predisposition to behave negatively toward the target group).

Box 10.1 Zooming In: Measuring Intergroup Contact and Prejudice

Intergroup contact can be assessed with questionnaire items measuring the quantity (e.g., "How much contact do you have with [outgroup] at your college?") and quality of contact (e.g., "To what extend did you experience the contact with [outgroup] as equal?") in different life domains (Islam & Hewstone, 1993; for a general overview of contact measures, see Lolliot et al., 2014). *Prejudice* can be measured with questionnaire items directly asking for a rather general affective evaluation of an outgroup (e.g., "Please describe how you feel about [outgroup] on a scale from negative to positive."; Wright, Aron, McLaughlin-Volpe, & Ropp, 1997), items asking for more specific aspects of a cognitive stereotype of the outgroup (e.g., "How competent are [outgroup]?"; Fiske, Cuddy, Glick, & Xu, 2002), or items focusing on behavioral intentions toward outgroups (e.g., "I would not be willing to have a sexual relationship with a [outgroup]."; Pettigrew & Meertens, 1995).

Does Intergroup Contact Work?

In 1954, Gordon Allport reviewed early work on the effects of intergroup contact. As the starting quote of this chapter indicates, Allport was well aware that intergroup contact not always reduces prejudice; on the contrary, it sometimes even might strengthen stereotypical views of outgroups and increases negative sentiments. He therefore proposed in his famous formulation of the intergroup contact hypothesis that intergroup contact only reduces prejudice in situations that meet four optimal conditions: equal group status within the contact situation, common goals, intergroup cooperation (i.e., cooperation in working toward

common goals), and the support of authorities, law, or custom (for a more elaborated discussion of these conditions, see Pettigrew, 1998).

Box 10.2 Question for Elaboration

Imagine you are asked to design an intervention aiming at reducing prejudice between students belonging to different ethnic groups at a school.

Based on Allport's (1954) optimal conditions, what could an intergroup contact intervention look like?

Allport's intergroup contact hypothesis inspired a vast amount of research with a marked increase in more recent years (Pettigrew, Tropp, Wagner, & Christ, 2011; Vezzali & Stathi, 2017). Based on their extensive meta-analytic synthesis of intergroup contact research, Pettigrew and Tropp (2006, p. 768) concluded that "there is little need to demonstrate further contact's general ability to lessen prejudice." Results of the meta-analysis revealed a mean negative relationship of $r = -.21$ between intergroup contact and prejudice corresponding to a small to medium effect size (Cohen, 1988), although the effect was smaller for minority group members compared to majority group members (Tropp & Pettigrew, 2005).

Moreover, the effect of intergroup contact was larger in samples where contact was structured to meet Allport's optimal contact conditions. This finding is important when it comes to developing intergroup contact interventions. However, even when the optimal conditions were not explicitly incorporated, contact still had a prejudice-reducing effect indicating that these conditions are not essential in order that intergroup contact shows positive effects but generally enhance the positive effects. This facilitating effect of Allport's conditions is also reflected in findings that show that especially intimate intergroup contact in form of intergroup friendships is able to improve intergroup attitudes (for a meta-analytical review, see Davies, Tropp, Aron, Pettigrew, & Wright, 2011).

Box 10.3 Zooming In: Meta-analytic Test of the Intergroup Contact Theory

In 2006, Thomas F. Pettigrew and Linda R. Tropp published a monumental meta-analysis on intergroup contact. In general, meta-analyses statistically integrate the results of multiple studies. In this case, Pettigrew and Tropp included studies on intergroup contact up to December 2000 and analyzed the results of 515 studies with 713 independent samples leading to an overall sample size of more than 250,000 individuals. The selection of studies comprised research conducted in 38 different nations, across a variety of target groups using different methodological approaches. Not surprisingly, the study is one of the most important publications in the field and was cited more than 5000 times so far (Google Scholar, 2018). Results indicate that "contact effects typically generalize to the entire outgroup, and [that] they emerge across a broad range of outgroup targets and contact settings" (Pettigrew & Tropp, 2006, p. 751).

Besides providing evidence for a robust effect of intergroup contact, Pettigrew and Tropp's meta-analysis also revealed that most studies are based on cross-sectional data. Cross-sectional designs, however, limit the causal interpretability of the relation between intergroup contact and prejudice. Thus, one cannot exclude the possibility that the negative correlations between contact and prejudice found in most cross-sectional research are due to a selection bias: highly prejudiced individuals avoid intergroup contact, and unprejudiced individuals seek out contact. However, both experimental (for an overview,

see Paluck, Green, & Green, 2018) and longitudinal studies (e.g., Binder, Zagefka, Brown, & Leyens, 2009; Levin, van Laar, & Sidanius, 2003; Swart, Hewstone, Christ, & Voci, 2011) confirm the meta-analytical results showing that intergroup contact indeed affects attitudes.

Intergroup contact not only reduces prejudice but influences a wide range of outcome measures including more conflict-relevant outcomes (Hewstone et al., 2014) such as outgroup trust (e.g., Tam, Hewstone, Kenworthy, & Cairns, 2009) and forgiveness (e.g., Hewstone, Cairns, Voci, Hamberger, & Niens, 2006; for a detailed discussion see Dinnick & Noor, Chap. 15). Research also demonstrated that intergroup contact is especially effective for those individuals in need (i.e., highly prejudiced individuals; Hodson, Turner, & Choma, 2017).

The prejudice-reducing effect of intergroup contact not only generalizes beyond the members involved in the original contact setting to the whole group (**Primary Transfer Effect**; see Pettigrew & Tropp, 2006). Importantly, intergroup contact effects also generalize to attitudes toward other, *secondary*, outgroups not involved in the contact situation which is labeled as the **Secondary Transfer Effect** of intergroup contact (e.g., Pettigrew, 2009; Tausch et al., 2010).

To conclude, it is now well-established that (positive) face-to-face contact with members of other groups reduces prejudicial attitudes toward these outgroups and even generalizes toward other groups.

Definition Box

Primary Transfer Effect of intergroup contact: Generalization of positive attitudes from the encountered outgroup member to the outgroup as a whole.

Secondary Transfer Effect: Generalization of positive attitudes from one outgroup to other outgroups not involved in the intergroup encounter.

Different Forms of Intergroup Contact

Although the evidence on the effectiveness of face-to-face (direct) intergroup contact is promising, sometimes contact between group members is difficult, if not impossible (e.g., due to segregation or intense phases of intergroup conflict). Moreover, intergroup encounters are sometimes found to exacerbate intergroup bias, producing heightened stress, anxiety, or outgroup avoidance (Shelton, Dovidio, Hebl, & Richeson, 2009; Trawalter, Richeson, & Shelton, 2009). Recent work therefore suggested that even indirect forms of intergroup contact (e.g., knowledge of or perceiving contact among others or imagined contact; see Fig. 10.1) may also have a beneficial effect, but avoid the aforementioned limitations of direct intergroup contact.

The research by Wright et al. (1997) on *extended contact* is pioneering in this regard. Wright and colleagues provided first empirical evidence that mere knowledge that an ingroup member has a close relationship with an outgroup member can improve intergroup attitudes. Moreover, even simply observing or being made aware of interactions between ingroup and outgroup members (*vicarious intergroup contact*) reduces prejudice (Vezzali, Hewstone, Capozza, Giovannini, & Wölfer, 2014). A recent meta-analysis by Zhou, Page-Gould, Aron, and Hewstone (2018) strongly supported the effectiveness of extended and vicarious contact for improving outgroup attitudes. Based on 115 studies, results demonstrated a small-to-medium effect size for extended and vicarious contact ($r = .25$) and that these effects are over and above direct contact experiences. Research also showed that extended contact is especially effective for people with few direct contact experiences or who live in segregated rather than mixed communities (Christ et al., 2010).

Based on the extended contact hypothesis, Christ et al. (2014) demonstrated a *contextual effect* of intergroup contact (see Blalock, 1984). They showed that living in a place in which other ingroup members interact positively with members of the outgroup reduces prejudice over and above

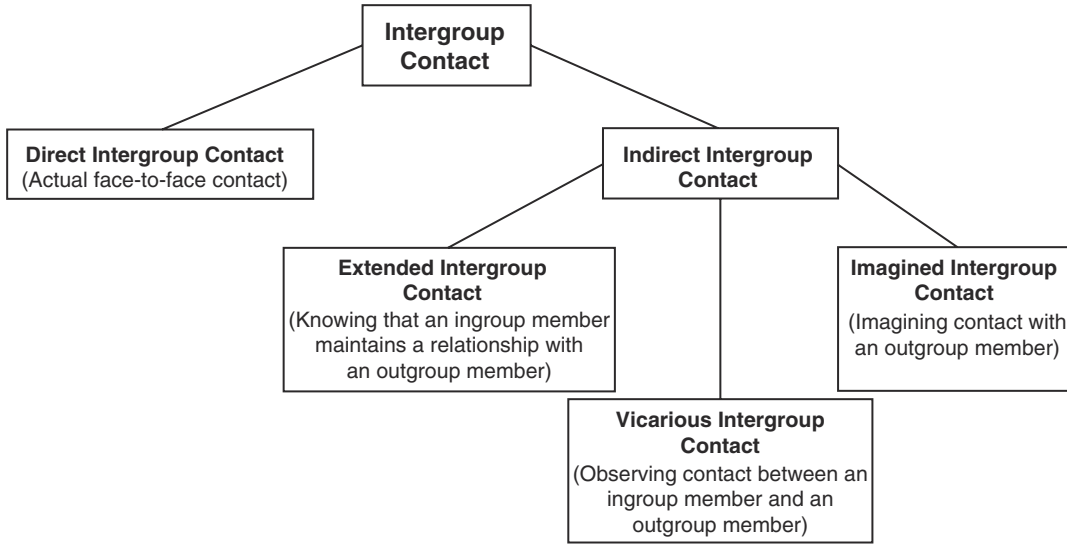

Fig. 10.1 Overview of different forms of intergroup contact

one's own contact experiences and irrespective of whether one knows the ingroup members experiencing intergroup contact. In other words, even individuals who have no direct contact experience can benefit from living in mixed settings, in which other group members have positive intergroup contact. This research also underlines the importance and scope of social norms in influencing intergroup relations as we will also see later when we introduce an indirect contact intervention by Paluck (2009).

Box 10.4 Zooming In: Contextual Effects of Intergroup Contact (Christ et al., 2014)

Responding to calls for more attention for the social context of intergroup contact effects (e.g., Pettigrew, 2008), Christ et al. (2014) applied multilevel modelling to test a contextual effect of intergroup contact. Multilevel modelling allows for the simultaneous consideration and analysis of different levels of analysis in hierarchically structured data (e.g., survey respondents living in different neighborhoods/districts). A contextual effect of intergroup contact is defined as the difference between the effect of intergroup contact on prejudice between social contexts such as neighborhoods (the *between-level effect*) and the effect of individual-level contact within contexts (the *within-level effect*; see Raudenbush & Bryk, 2002). Evidence for this contextual effect of positive contact would indicate that living in a place in which other ingroup members interact positively with members of the outgroup reduces prejudice over and above one's own contact experiences and irrespective of whether one knows the ingroup members experiencing intergroup contact. Indeed, Christ et al. (2014) found support for this assumption in five cross-sectional and two longitudinal studies. Moreover, the contextual effect of intergroup contact was partly explained by (positive) social norms (i.e., the shared beliefs about the value of ethnic and cultural diversity).

Crisp and Turner (2009) showed that even just *imagining* intergroup contact helps to reduce prejudice and prepares individuals for face-to-face intergroup contact. What is striking is the simplicity of the instruction participants receive

in imagined contact studies. The standard instruction (Crisp et al., 2009) is as follows, although variants and extensions have been used: "We would like you to take a minute to imagine yourself meeting [an outgroup] stranger for the first time. Imagine that the interaction is positive, relaxed and comfortable." The key elements that proofed to be necessary are the simulation of an interaction (first sentence of the instruction) and the positive tone of the interaction (second sentence of the instruction).

Box 10.5 Zooming In: Validity of Imagined Intergroup Contact Effects

The imagined contact hypothesis has inspired numerous studies, not least because of its simplicity. The empirical evidence seems to support the imagined contact hypothesis. A meta-analysis of 70 studies by Miles and Crisp (2014) found that imagined contact had a small to medium effect ($d_+ = 0.35$) on a number of outcomes (e.g., explicit and implicit intergroup attitudes, behavioral intentions). However, the imagined contact hypothesis is not left without critique (Bigler & Hughes, 2010; Lee & Jussim, 2010). Moreover, in a recent large-scale replication attempt, the effects have not been supported (Klein et al., 2014). Furthermore, it is still not clear how long-lasting the effects are. There are only few longitudinal studies that tested the longevity of effects, and only among younger participants (Vezzali et al., 2015; Vezzali, Crisp, Stathi, & Giovannini, 2015). It is up to future research to get a better idea of the boundary conditions of imagined contact and to answer the question whether imagined intergroup contact is a valid means for sustainable prejudice reduction.

Box 10.6 Question for Elaboration

Think about situations and contexts in which imagined intergroup contact could be especially useful.

Demonstrating that even with indirect intergroup contact (knowing or perceiving intergroup contact of others or simply imagining an intergroup interaction) negative attitudes can be improved offers a number of practical applications in form of contact interventions (Brown & Paterson, 2016). For instance, portraying (positive) interactions between members of different groups provides a promising avenue to improve intergroup relations on a large scale as has been demonstrated by the work of Paluck (2009) which we will summarize in more detail at the end of this chapter. Moreover, research shows that indirect contact prepares for direct contact (e.g., Turner & West, 2012; Wölfer et al., 2019), thus helping to connect groups in conflict.

When and Why Does Intergroup Contact Work?

The effectiveness of direct and indirect intergroup contact in reducing prejudice and improving intergroup relations has received convincing empirical support. But research has not only focused on the question whether intergroup contact helps to reduce prejudice and therefore improves intergroup relations. There are also numerous studies that focused on the questions when and why intergroup contact works. These questions concern the moderation and mediation of intergroup contact effects, respectively (see Kenworthy, Turner, Hewstone, & Voci, 2005).

Moderators of Contact Effects

Starting in the 1980s, scholar debated on the question when contact is most likely to reduce prejudice. Unlike Allport (1954) who focused on optimal conditions that facilitate intergroup contact effects, this line of research tried to identify the conditions for the primary transfer of intergroup contact effects. Different models have been proposed with differing assumptions about the cognitive representation of groups that should be salient during the intergroup encounter. While the *decategorization model* (Brewer & Miller, 1984) proposes that the intergroup interaction

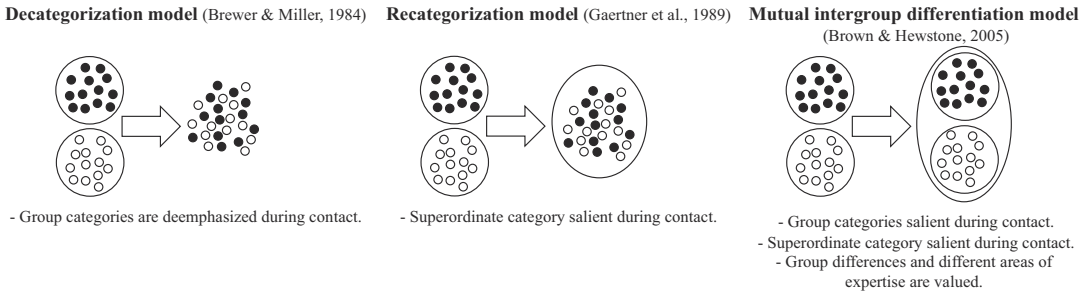

Fig. 10.2 Overview of models of cognitive group presentation during intergroup contact

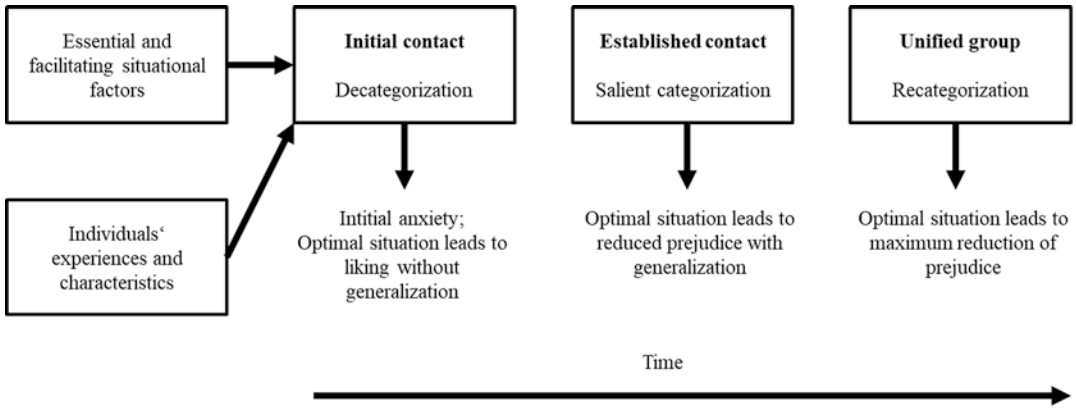

Fig. 10.3 The three-stage model of intergroup contact (Pettigrew, 1998)

should be based on an individual level by deemphasizing the group categories, the *recategorization model* (e.g., Gaertner, Mann, Murrell, & Dovidio, 1989) suggested to make a superordinate "we" category salient. The evidence so far, however, speaks for the *mutual intergroup differentiation model* of Hewstone and Brown (Brown & Hewstone, 2005; Hewstone & Brown, 1986) that proposes that respective group memberships should be salient in the contact situation. A conceptual overview of the different models is depicted in Fig. 10.2.

Pettigrew (1998; see also Gaertner et al., 2000) in his formulation of an intergroup contact theory integrated these different models by suggesting a three-stage model in which an optimal contact experience is developed gradually (see Fig. 10.3). In the initial contact situation, decategorization and individuation (Brewer & Miller, 1984) should occur to reduce intergroup anxiety. In the next stage, the group categories should be made salient in order to allow a generalization of the individuals' positive contact experiences to the outgroup as a whole (Hewstone & Brown, 1986). In the last and most optimal stage with regard to intergroup relations, recategorization (Gaertner & Dovidio, 2000) should occur during which a perception of a common ingroup is achieved (see also Scheepers & Ellemers, Chap. 9).

Box 10.7 Question for Elaboration

Imagine a new group of immigrants, the Ondereans, came to your country. You are planning to have several meetings with an Onderean. Applying Pettigrew's three-stage model, how would you try to behave during the meetings to facilitate mutual liking?

Mediators of Contact Effects

Numerous studies examined potential mediators of intergroup contact effects (Brown & Hewstone, 2005). Pettigrew and Tropp (2008) meta-analytically examined a subset of the studies of their meta-analysis on intergroup contact effects (Pettigrew & Tropp, 2006). The results show that contact exerts its effect on prejudice mainly by reducing negative affect (e.g., intergroup anxiety) and by inducing positive affective processes (e.g., empathy and perspective taking), a result that was recently confirmed in a longitudinal study (Swart et al., 2011). Cognitive mediators (e.g., intergroup knowledge) seem to play a less important role.

Undesirable and Unintended Effects of Intergroup Contact

Research on intergroup contact has not been left without critiques (e.g., Dixon, 2017). For instance, research on intergroup contact has been criticized for neglecting the outcomes of negative encounters between members of different groups (e.g., Dixon, Durrheim, & Tredoux, 2005). Encounters in which a member of one group is offended, threatened, or physically harmed by a member of a different group can be regarded as examples of negative intergroup contact (for more examples, see Hayward, Tropp, Hornsey, & Barlow, 2017). Although this critique is certainly justified, a discussion of the effects of negative contact is beyond the scope of this chapter in which we focus on the more common positive courses of intergroup encounters (Pettigrew & Tropp, 2011). However, research on the effects of both positive and negative intergroup contact is increasing in recent years (Graf & Paolini, 2017).

Moreover, Dixon, Tropp, Durrheim, and Tredoux (2010) criticize that most scientific work on intergroup contact focuses disproportionally on the majority group perspective, thereby neglecting potential negative effects that contact can have for members of low-status minority groups. A number of scholars have argued that for disadvantaged groups, positive intergroup contact might actually evoke the so-called demobilizing effects: positive intergroup contact might lead low-status minority group members to dissociate themselves from the needs of their group, thereby decreasing support for social change that would improve the situation for their group as a whole (e.g., Dixon, Durrheim, & Tredoux, 2007; Reicher, 2007; Wright & Lubensky, 2009; for a recent overview of this critical position, see Durrheim & Dixon, 2018). Indeed, Saguy, Tausch, Dovidio, and Pratto (2009) demonstrated that, for low-status groups, positive contact with high-status group members increased perceptions of outgroup fairness and, as a consequence, decreased support for social change. Likewise, Dixon et al. (2007) found that Black South Africans who had White outgroup friends showed less support for anti-racism policies than Black South Africans who had no White friends (see also Tropp, Hawi, Van Laar, & Levin, 2012).

Research just started to examine conditions that lead to more positive intergroup relations without diminishing legitimate protest aimed at reducing inequality (e.g., Kauff, Green, Schmid, Hewstone, & Christ, 2016; Vezzali, Andrighetto, & Saguy, 2016). For instance, Becker, Wright, Lubensky, and Zhou (2013) demonstrated that the sedative effect of intergroup contact (i.e., reducing collective action intentions) for minority group members did not occur when the high-status individual addressed the illegitimacy of unequal intergroup relations during the contact.

However, more research is needed to identify conditions that lead to an implementation of intergroup harmony without inhibiting social chance. One promising strategy seems to be to emphasize both commonalities and differences in the intergroup encounters (Saguy, Shchori-Eyal, Hasan-Aslih, Sobol, & Dovidio, 2017), a strategy that has been implemented in some variants of intergroup contact interventions as is illustrated in the direct contact intervention that Shani and Boehnke (2017) have evaluated and that we will introduce in more detail below.

Intergroup Contact Interventions

Intergroup contact theory provides a clear and concise guideline for interventions: individuals from different groups have to be brought in direct

or indirect contact (Lemmer & Wagner, 2015). It is therefore not surprising that many interventions for reducing prejudice are based on the intergroup contact theory (see Wagner, Christ, & van Dick, 2002). A recent meta-analysis by Lemmer and Wagner (2015) summarized the results of intergroup contact interventions aimed at reducing ethnic prejudice. In this meta-analysis contact interventions were included that (a) have been implemented under naturalistic conditions outside the lab (e.g., in school settings) and that (b) had the aim to establish direct or indirect contact between members of different groups. Moreover, since the goal of the meta-analysis was to include only those studies that provide sufficient evidence for the causal effect of intergroup contact (i.e., studies with sufficient internal validity; see also Paluck & Green, 2009), only studies were included that used a randomized posttest only with control, a pretest-posttest with control, or a pretest-posttest single group design. It is important to note that the majority of studies (i.e., 85%) included in this meta-analysis were not considered in Pettigrew and Tropp's meta-analysis (2006).

Based on the inclusion criteria, 73 studies with 129 independent comparisons have been included in the meta-analysis. Overall, intergroup contact interventions generally resulted in improved intergroup attitudes (i.e., reduction in ethnic prejudice), both immediately and up to one year later, demonstrating the effectiveness of the implementation of either direct or indirect contact forms. The estimated effect sizes can be classified as small to medium ($\hat{\mu}_\theta$ between 0.23 and 0.39; Cohen, 1988). Moreover, results show that contact interventions are also effective in the context of protracted intergroup conflicts (e.g., conflict between Jewish and Palestinian Israelis, Protestants and Catholics in Northern Ireland). Although the effect of contact interventions was stronger for ethnic majorities, interventions were still effective for ethnic minorities.

The meta-analytic results clearly confirm that contact interventions are an effective means to reduce prejudice and, thus, intergroup tensions. Both direct and indirect contact interventions seem to be comparably effective in improving intergroup attitudes. Importantly, contact interventions seem to be more effective than other prejudice interventions (see meta-analysis by Beelmann & Heinemann, 2014).

In the following, we will describe two contact interventions in more detail. In the first example, Shani and Boehnke (2017) examined the effects of a direct contact intervention in the context of the Israeli-Palestinian conflict. In the second example, Paluck (2009) tested the effects of a radio program in which positive intergroup contact was portrayed, thus providing an example for a contact intervention that implemented indirect intergroup contact.

An Example of a Direct Contact Intervention

Intergroup contact theory has inspired a number of planned encounters between members of groups in conflict to contribute to reconciliation. For instance, intergroup encounter interventions between Jewish and Palestinian citizens have a long history in Israel (Maoz, 2004). The conflict between Israeli Jews and Palestinians is often considered as a prototype of an intractable conflict (Bar-Tal, 2013). Intractable conflicts are prolonged, chronic, and violent and are perceived by society members as existential, irresolvable, and of zero-sum nature (Bar-Tal, 2007, 2013). Different models of planned intergroup encounters have been applied in this context (Maoz, 2004, 2011). The *coexistence model* seeks to promote positive intergroup attitudes by emphasizing commonalties and similarities between the two groups. Political issues in disagreement between the two parties are avoided. In contrast, in the *confrontational model*, group membership is made salient, and it is aimed to increase awareness among (mainly) majority members of structural barriers for equality and to empower the minority members. Programs based on the confrontational model intend to change the construction of identity of minority and majority members, making Israeli Jews more aware of their dominant role while empowering Palestinian Arabs through their direct confrontation with Israeli Jews (Halabi & Sonnenschein, 2004).

For both models, a number of limitations have been identified (Maoz, 2011). For the coexistence model, critiques question the focus on interpersonal interaction and on personal identities, while important issues such as the conflict between Israeli Jews and Palestinians and the discrimination of the Palestinian citizens of Israel are ignored. Recent research on the sedative effect of intergroup contact, as summarized above, supports this critical view. The confrontational model has been criticized since the direct confrontation can distress and alienate Israeli Jewish participants and cause negative attitudes and distrust toward Palestinians and toward the practice of encounters (Maoz, Bar-On, & Yikya, 2007).

The "face-to-face" program – a mixed-model encounter program – integrates elements of the coexistence model as well as the confrontational model. Both, interpersonal and political intergroup dynamics, are addressed within this 2-day structured encounter. The program is endorsed by the Israeli Ministry of Education and is conducted as an official educational activity in cooperation with Hebrew and Arabic high schools across the country. Mixed groups of about eight to ten participants meet at neutral places and are guided by trained Jewish and Palestinian facilitators (for a detailed description, see Shani, 2015).

The encounter has two main phases aiming to gradually change from coexistence-focused to confrontational activities. On the first day, activities are implemented that aim to help participants to become acquainted with each other and to establish social relationships (e.g., talking about hobbies, their likes and dislikes). Later, the focus switches to the group level. Participants learn about similarities and differences between their cultural groups. Moreover, they discuss and confront mutual stereotypical perceptions. Thus, the activities in the first day resemble the first two stages of the three-stage model of Pettigrew (1998; see Fig. 10.3). Although most activities are preplanned, the program allows for free interactions and non-structured discussion between group members in public areas. One of the aims of the first day is the development of affective ties and mutual trust between the members of both groups.

On the second day, "the competing national and political identities" (Shani, 2015, p. 101) are discussed. That is the groups discuss topics like national identity, security, discrimination, democracy, and power differences between the groups. In other words, the activities and discussions focus on the core conflicts between the groups. Because these kinds of dialogues can be intense and evoke conflicting and complex emotional reactions among the participants, the program trainers try to reestablish a harmonious atmosphere at the end of the encounter. In fact, the encounters usually end on a positive note. That is, participants usually exchange their contact details and express a willingness to maintain a friendship with outgroup members.

Shani and Boehnke (2017) tested the effectiveness of the "face-to-face" program. Using a quasi-experimental design with two measurement points and comparing Jewish and Palestinian pupils who participated in the program with comparable pupils who did not, the authors found a significant intervention effect for the Israeli Jewish participants on measures such as readiness for outgroup contact and support for equals rights (see Fig. 10.4). Palestinian participants reported higher levels of support for inclusion after the encounter. Importantly, the intervention did not undermine the perception of intergroup disparities among both majority and minority members. In line with aforementioned findings (Pettigrew & Tropp, 2008), tests of mediators mainly identified affective processes as important. That is after the encounter empathy increased and hatred decreased for Jewish participants, while for Palestinian participants an increase in empathy and hope was observed.

Overall, the results demonstrate the effectiveness of mixed-model encounters, although it was more effective for Israeli Jewish than for Palestinian participants. To conclude, the "face-to-face" illustrates that direct intergroup contact interventions are able to improve intergroup relations – even in intractable conflicts. However, as Shani and Boehnke (2017) point out, it is important to develop interventions in a way that "takes into consideration the different preferences and

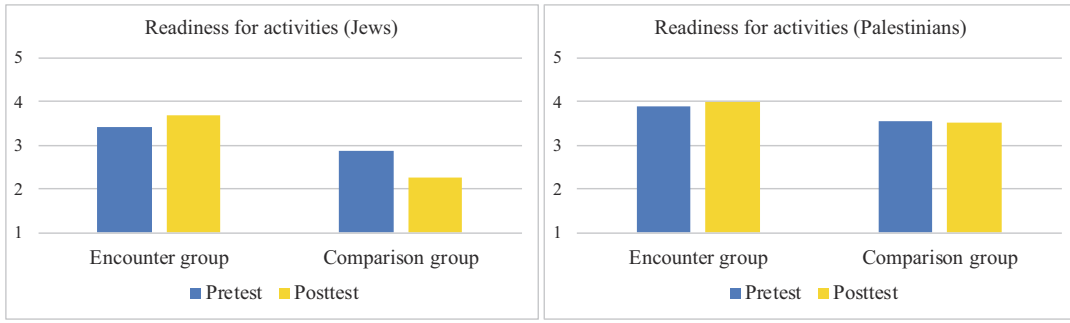

Fig. 10.4 Effects of the "face-to-face" program on readiness for activities with outgroup members for Jewish (left) and Palestinian participants (right) (Shani & Boehnke, 2017). Note: Readiness for activities was measured with three items (e.g., "Indicate your interest to participate in a Jewish-Arab workshop.") on a scale from 1 to 5. For Jews a significant interaction effect between intervention condition (encounter vs. comparison group) and time (pretest vs. posttest) emerged ($F(1, 158) = 33.09$, $p < .001$, $\eta^2 = 0.17$). Jewish participants were more willing to engage in intergroup activities after the encounter than before the encounter ($d = 0.32$). For Palestinians no significant interaction effect emerged ($F(1, 255) = 0.79$, $p = .28$)

needs of each group, and which does not shy away from dealing with the problems that shape the relations between the groups" (p. 8).

An Example of an Indirect Contact Intervention

As outlined before, indirect contact interventions are also promising since they can be implemented with fewer resources and are therefore less costly. In addition, they can be implemented even in highly segregated contexts or contexts in which it is difficult to bring members from opposing groups together. Most importantly, when vicarious contact interventions are used, more individuals can be reached, and since social norms might be changed, the effect might be more sustainable.

Paluck (2009) conducted a study in Rwanda aiming at testing the influence of mass media (here radio) on prejudice, norms, and intergroup behavior. In 1994, during the Rwandan Civil War, members of the main majority group, the Hutu, mass slaughtered between 500,000 and 1,000,000 members of the main minority group, the Tutsi. Naturally, Rwanda is still struggling with the consequences of this genocide. Perpetrators and victims are living side by side, and, not surprisingly, the climate is dominated by distrust and mutual devaluation. Accordingly, there are numerous attempts to improve the relation between the Hutu and the Tutsi. One of them is "New Dawn," a reconciliation radio soap opera involving the fictional story of two Rwandan ethnic groups that can be associated with the Hutu and Tutsi communities. Characters of the radio show are portrayed as typical Rwandans wrestling with problems familiar to most of the listeners. Hence, listeners can easily connect with the characters depicted in the radio show. In Rwanda, radio is the most important form of media. As a consequence, it is likely that the program is capable of changing social norms. Although in her study Paluck (2009) didn't approach "New Dawn" from an intergroup contact perspective, the intervention contains elements of vicarious contact. Within the soap, characters belonging to the two rival groups band together and confront leaders who support the use of violence. They cooperate across community lines and promote positive norms about intermarriage.

Paluck (2009) studied the effects of "New Dawn" within a 1-year field experiment. She sampled 12 communities from four different regions in Rwanda. Each community was randomly assigned to a treatment or a control condition. For each community, 40 participants were either exposed to "New Dawn" (treatment) or a radio health program (control). Because

Rwandans typically listen to the radio in groups, research assistants visited each community once a month and played four episodes of the respective radio program on a portable cassette player. The health program participants were asked to refrain from listening to "New Dawn." They were promised a cassette player and tapes with all "New Dawn" episodes at the end of the study.

After 1 year, researchers went to the communities to gather different types of data – among them data from individual and group interviews as well as from behavioral observations. Results of the analyses of these data indicated that participants who listened to the reconciliation soap opera displayed more cooperative intergroup behavior, compared with participants in a control condition listening to a soap opera on health issues. Moreover, participants in the experimental group believed that current social norms were more supportive of intergroup integration and were also more trusting of the outgroup and more willing to cooperate with them, even though the participants did not show a change in their personal beliefs with regard to the program's message about prejudice and violence.

Box 10.8 Zooming In: Measuring Behavior in Paluck (2009)

In her study on the effects of the radio program "New Dawn" in Rwanda, Elizabeth Levy Paluck did not only obtain data from self-report questionnaires or group discussions. Aiming at getting a broad picture of the effects of the intervention, she also gathered behavioral data. Research assistants documented group discussions in communities about how batteries and tapes for a cassette player should be shared among community members. Paluck (2009) argued that this measure "also captured spontaneous behavior that participants believed to be 'off the record'" (p. 579).

Interestingly, in the control group, community members typically decided to hand the items over to the village's local authority. In the experimental reconciliation groups, however, group members often claimed that the whole group is responsible for the items or that they should vote for a member responsible of managing the items. In the experimental groups, more comments were made about the groups' ability to cooperate and interact in the future (e.g., to continue to listen to the program together). Thus, also these behavioral data hint to the effectiveness of the intervention.

Paluck's (2009) study illustrates that social norms regarding inclusion can be affected by observation of others' behavior (vicarious intergroup contact). Moreover, this research also demonstrates how insights from research on intergroup contact can be translated in a relatively simple intervention that has the potential to affect a large number of individuals.

Summary

- Intergroup contact, that is, contact between members of different groups, is an effective means to reduce mutual prejudice and increase trust and forgiveness.
- Besides direct (i.e., face-to-face) intergroup contact, other more indirect forms of intergroup contact such as extended, vicarious, and imagined contact have been shown to be effective.
- Different types of in- and outgroup categorization are proposed as moderators of intergroup contact effects.
- Reduced intergroup anxiety and increased empathy have been shown to mediate intergroup contact effects.
- Intergroup contact interventions have been shown to improve intergroup attitudes.

Recommended Reading

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Guiding Answers to Questions in the Chapter

1. Q (With Box 10.2): Imagine you are asked to design an intervention aiming at reducing prejudice between students belonging to different ethnic groups at schools.

   Based on Allport's (1954) optimal conditions, what could an intergroup contact intervention look like?

   A:

   1. Students from different ethnic groups could work together on a certain task (e.g., developing a strategy to refurbish the school building).
   2. It should be made explicit that they have a common goal.
   3. When working together, students must be on a par with each other, that is, they need to have the same rights and privileges.
   4. Teachers and principals support them and ensure that they jointly work on the assigned task.

2. Q (With Box 10.6): Think about situations and contexts in which imagined intergroup contact is especially useful.

   A:

   - When opportunities for contact with outgroup members are rare (e.g., in highly segregated or conflict areas), when the number of outgroup members is small (e.g., North Korean immigrants in the USA), or when outgroup members do not participate in everyday life (e.g., inmates)
   - When ingroup members are unwilling to engage in direct contact with outgroup members – either because they are strongly biased against outgroup members or because they are afraid of meeting outgroup members
   - When the outcome of a direct intergroup contact situation is unclear (e.g., when a language barrier exists and challenges a functional interaction between members of different groups)

3. Q (With Box 10.7): Imagine a new group of immigrants, the Ondereans, came to your country. You are planning to have several meetings with an Onderean. According to Pettigrew's three-stage model, how should you try to behave during the meetings to facilitate mutual liking?

   A:

   - At first, try to encounter the Onderean on an individual level. Try to avoid thinking too much about his/her group membership. Do not refer to your group membership.
   - Once primary contact has been established, acknowledge your different backgrounds

and talk about differences between your groups.
- Finally, focus on commonalities between your groups. Try to think about the Ondereans as being part of a common group (e.g., people living in your country or humans).

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Implicit Prejudice

11

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Introduction

Soccer spectators taunt black players with monkey calls and bananas.[1] Women on corporate boards are ridiculed by their male colleagues for allegedly being too chatty.[2] And politicians in high office refer to immigrants as criminals and rapists.[3] These examples of prejudice are contemporary, but the issue itself is a fundamental and all too common aspect of human interaction. As in these examples, prejudice can lead to deliberate acts of discrimination. People choose to derogate outgroups to elevate their ingroup's status and their personal self-esteem (Hogg & Abrams, 1990; see Scheepers & Ellemers, Chap. 9); people intentionally denigrate an outgroup to preserve their ingroup power (Sidanius & Pratto, 1999) or in a calculated political move use an outgroup as a scapegoat for societal ills (Glick, 2002). However, beyond such deliberate acts, where prejudice serves as a means to a particular end, group attitudes and stereotypes may influence judgment and behavior without any intent to discriminate or treat members of one group

[1] https://www.bbc.com/sport/football/27363859

[2] https://www.nytimes.com/2017/06/13/technology/uber-sexual-harassment-huffington-bonderman.html

[3] https://www.washingtonpost.com/news/post-politics/wp/2015/06/16/full-text-donald-trump-announces-a-presidential-bid

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different from those of another group. For example, white observers perceive black faces as angrier than white faces with the same expression (Hugenberg & Bodenhausen, 2003); and they more readily identify an ambiguous object as a gun when it is in the hands of a black rather than a white man (Correll, Wittenbrink, Crawford, & Sadler, 2015). They do so even when motivated to be accurate, at times not even knowing that the target person's group membership influences the outcome. This kind of *implicit* bias is usually subtle. It pales in comparison to the deliberate bigotry we cited at the beginning of this paragraph. But implicit forms of prejudice can nevertheless have significant consequences, such as when law enforcement officers must decide whether an encounter is potentially hostile and requires the use of deadly force.

In this chapter, we provide an introduction to implicit forms of prejudice. We begin by defining prejudice and its related constructs, stereotypes, and discrimination. Next, we explain how prejudice may implicitly influence behavior and under what circumstances such influences are most likely. We conclude with a description of a research project that applies these theoretical insights to a consequential real-world problem, the influence of race on police officers' use of lethal force.

What Is Prejudice?

In social psychology, **prejudice** is broadly considered a negative attitude toward a social group and its members (Dovidio, Hewstone, Glick, & Esses, 2010). However, to differentiate it more effectively from related constructs, a narrower definition is usually adopted where prejudice represents the affective (or emotional) component of group attitudes. It captures the negative evaluative predisposition toward a social category and its members, the dislike felt toward the group (see Correll, Judd, Park, & Wittenbrink, 2010). **Stereotypes**, by contrast, encompass the cognitive (or belief) component of group attitudes. They consist of generalizations that associate category members with typical and distinctive attributes. The stereotype for academics, for instance, might hold that they are smart but possess limited social skills or that they tend to be forgetful. Lastly, **discrimination** makes up the behavioral component of group attitudes. It is commonly defined as behavior toward members of a social category where the behavior occurs solely because of the target's category membership. For example, a job applicant is rejected because of her gender, despite having all the necessary credentials.

Naturally, prejudice, stereotypes, and discrimination are closely interrelated. For example, while stereotypes in and of themselves can be negative, neutral, or positive in valence, the stereotypes associated with disliked groups typically contain negatively valenced attributes. Likewise, the negative evaluation of a group may give rise to discriminatory behavior (see Christ & Kauff, Chap. 10).

Definition Box

Prejudice: A negative evaluative predisposition toward a social category and its members.

Stereotypes: Generalizations that associate category members with typical and/or distinctive attributes.

Discrimination: Behavior toward category members that is directed toward them solely because they happen to be members of that category.

How Does Prejudice Shape Judgment and Behavior?

The characterization of prejudice as an evaluative predisposition emphasizes the distinction between prejudice and behavior. Like attitudes in general, prejudice represents an individual's inclination to act in a particular way, not the act itself. So how and when does the inclination to act turn into actual behavior? Contemporary

accounts of how attitudes shape behavior generally distinguish between three processing stages: (1) an initial spontaneous activation phase, (2) a deliberation phase, and (3) a response phase (e.g., Bassili & Brown, 2005, Fazio, 1990; Gawronski & Bodenhausen, 2011; Krosnick, Judd, & Wittenbrink, 2005; Petty & Cacioppo, 1986; Strack & Deutsch, 2004; Wilson, Lindsey, & Schooler, 2000).

Spontaneous Activation Phase

For well-established, overlearned attitudes, evaluations may be triggered automatically, without intent, effort, or conscious awareness. Such evaluations are fast. They occur within a few hundred milliseconds. They do not require any intentional search for relevant information, but instead are the result of a passive process that is set in motion automatically by the attitude object (e.g., a group member). They may even occur without awareness. Many empirical demonstrations of such spontaneous evaluations exist for social categories that are pervasive in social interaction, categories like gender (e.g., Rudman & Goodwin, 2004), race (e.g., Wittenbrink, Judd & Park, 1997), ethnicity (e.g., Greenwald, McGhee, & Schwartz, 1998), or the elderly (Perdue & Gurtman, 1990).

Deliberation Phase

The second stage of evaluative processing consists of a controlled memory search for relevant information. This could include prior evaluations stored in memory ("I like the English") as well as any other related associations ("polite," "Brexit"). What information comes to mind at this point depends on its accessibility in memory, as well as contextual factors that may highlight certain information. Importantly, deliberation requires both motivation and opportunity, the motivation to explore one's true feelings about the issue, and to form an accurate judgment, and an opportunity to do so, to attend to the issue and be able to take the time necessary to deliberate. Otherwise any initial spontaneous evaluation will directly impact the final evaluative response.

Response Phase

The input from phases 1 and 2 may then shape any actual behavior. Often, these influences are explicit. That is, the response is chosen based on a deliberate consideration of the evaluative input, combined with other relevant information. For example, having concluded that I like the English, I decide to take up the invitation to visit my acquaintance in London. Or, alternatively, I might conclude that although I quite like the English and would like to visit, a visit is too expensive, or it might get me in trouble with my family which has been planning another trip instead. In either case, a response is chosen with deliberate consideration of the evaluative input.

In contrast, evaluative influences can also occur implicitly, with the person remaining unaware of the connection between evaluation and response, or at least without any intention for the evaluation to influence a response. As noted, spontaneous evaluations triggered during phase 1 may remain outside of conscious awareness. Hence, any effect such evaluations might have on a subsequent response will remain outside of awareness. In addition, the opportunity to modify spontaneous evaluations through deliberation may not be available. For example, in circumstances where responses have to be made under time pressure, deliberation may not be feasible. We will discuss these circumstances and other factors that facilitate implicit influences of prejudice in greater detail in the next section.

Box 11.1 Zooming In: Measures of Implicit Prejudice

Various attitude measures exist that aim to capture spontaneously activated attitudes, free of processes that take place during the deliberation and response phases of

evaluative processing. The measures generally ask respondents to make speeded, split-second judgments, and they capture response latencies and/or response errors as estimates of spontaneous evaluations (for an overview of available measures, see Wittenbrink & Schwarz, 2007). Prejudice has been one of the main domains of application for these measures – in part because the measures are meant to circumvent deliberation and therefore limit respondents' opportunities to intentionally misrepresent prejudiced attitudes when they are deemed socially undesirable.

The IAT (Implicit Association Test; Greenwald et al., 1998) is by far the most popular implicit measure of attitudes. In this task, participants classify as quickly as possible two sets of target items along two dimensions of judgment. For example, as an implicit measure of racial prejudice, the first set of items might consist of faces that have to be classified according to their race by pressing one of two response keys, labeled *black* and *white*, respectively. A second set of items then consists of clearly valenced positive and negative targets (e.g., poison, love). The task for this second set is to classify the items according to their valence, using response keys labeled *pleasant* and *unpleasant*.

During a set of critical trials, both judgment tasks are combined, and the faces and valence items appear in random order. Important for the measurement, both judgment tasks are performed using the same two response keys. Two separate blocks of trials vary the mapping of the racial categories on the response keys, so that each group label is paired once with the positive response key and once with the negative key (e.g., *black-pleasant* and *white-unpleasant* versus *black-unpleasant* and *white-pleasant*). The critical measure compares the response latencies for these two assessment blocks. Faster responses are used as an indicator of relative evaluative preference. For example, relatively faster responses for trials that pair *white* with *pleasant* and *black* with *unpleasant* are considered to reflect racial prejudice (for a detailed review of experimental procedure and data analysis, see Greenwald, Nosek, & Banaji, 2003).

Implicit measures of attitudes, and the IAT in particular, have been criticized for their limited success in predicting actual behavior (cf., Oswald, Mitchell, Blanton, Jaccard, & Tetlock, 2013). Meta-analyses of studies linking IAT prejudice measures with discriminatory behavior indeed show the IAT to have only modest predictive validity ($r = 0.24$; Greenwald, Poehlman, Uhlmann, & Banaji, 2009). However, these findings have to be seen in context. First, explicit measures of prejudice don't fare any better in predicting discrimination. In direct comparisons, they actually fare worse ($r = 0.17$; Greenwald et al., 2009). Second, as we noted before, prejudice reflects merely an inclination to act. Its link with actual behavior is conditional on a variety of factors. At the individual level, overall correlations between a person's prejudice and specific behavioral choices are therefore expected to be modest. In contrast, when aggregating across many individuals, the correlations between implicit measures of prejudice and overall patterns of behavior strengthen. For example, US cities with overall higher levels of implicit racial prejudice (as measured by an IAT) show greater racial bias in police-involved shootings (Hehman, Flake, & Calanchini, 2018). Likewise, a community's overall implicit racial prejudice on the IAT predicts adverse health outcomes for its black residents (Leitner, Hehman, Ayduk, & Mendoza-Denton, 2016).

Factors that Facilitate Implicit Prejudice

Our discussion of how attitudes influence behavior, and how such influences may occur implicitly, makes it clear that the title of this chapter, *Implicit Prejudice*, is a bit of a misnomer. Often, it is not the prejudice – the evaluative predisposition – that is implicit. It is the effect that prejudicial attitudes can have on judgment and behavior that is potentially implicit (see Moors & De Houwer, 2006). Nevertheless, **Implicit Prejudice** has become a commonly used term to describe the phenomenon, and we follow this convention here.

Definition Box

Implicit Prejudice: A negative evaluative predisposition toward a social category that impacts judgment and behavior without awareness and/or intent.

Box 11.2 Question for Elaboration

What distinguishes implicitly operating prejudice from prejudice more generally?

The potential for prejudiced attitudes to operate implicitly has important theoretical and practical implications, not the least of which is that it bears the risk of discriminatory behavior in the absence of intent or possibly awareness. Even in circumstances where people want to be fair and unbiased, they may end up with bigoted judgments and discriminatory behavior. There are a variety of factors that may promote this dissociation between intentions and actions (for additional detail, see Krosnick, et al., 2005).

Time Pressure

We already mentioned one of these factors: when making quick, perhaps even split-second, decisions, limited opportunity exists to deliberate over one's true feelings and the correct course of actions they imply. Therefore, under time pressure the response is disproportionately influenced by information that comes to mind quickly (Bargh, 1997; Sanbonmatsu & Fazio, 1990). That is, spontaneous evaluations are more likely to shape one's actions, even though one would reject them as being irrelevant, inadmissible, or otherwise inapplicable for the decision at hand, if given the opportunity to reflect. Hence, quick responses are more likely to be implicitly prejudiced.

Limited Cognitive Resources

Deliberation is effortful. It requires us to maintain focus, to integrate possibly disparate pieces of information, and to separate relevant from irrelevant information. People's capacity to perform these cognitive operations is limited. Thus, doing multiple things at once interferes with people's ability to perform these operations adequately, and the response they execute may not be the one intended (Govorun & Payne, 2006; Macrae, Milne, & Bodenhausen, 1994). Likewise, fatigue and periods during the daily circadian rhythm where arousal is lowered are associated with reduced cognitive processing capacity (Bodenhausen, 1990; Ma et al., 2013). With fewer processing resources available to deliberate one's evaluation and response, the resulting behavior is more likely to be implicitly prejudiced.

Ambiguity

Some choices are straightforward. They involve clear and unambiguous input with each piece of information pointing to the same conclusion. Other choices are more complex with conflicting and possibly incomplete information. Resolving the ambiguity as to what the proper evaluation and response should be takes additional time and effort. Moreover, spontaneous evaluations which become available early in the process may shape the interpretation of subsequent information. As a result, in situations that are high in ambiguity,

responses are more likely to be implicitly prejudiced (Bodenhausen & Lichtenstein, 1987; Correll et al., 2015).

Lack of Motivation

People are not always motivated to deliberate their options. Mindless actions may bypass deliberation and rely solely on spontaneous evaluations (e.g., Chen, Shechter, & Chaiken, 1996; Kruglanski & Freund, 1983). In circumstances where people are less curious, or care less about the accuracy of their judgments, responses are more likely to be implicitly prejudiced as well.

Box 11.3 Question for Elaboration

What kinds of situations can you think of that might be especially prone to implicit influences from prejudice?

Implicit Prejudice in Practice

We began this chapter noting that prejudice and discrimination are an all too common aspect of human interaction. In the United States, for example, a significant wage gap continues to exist between similarly educated men and women working full time in the same occupation (Goldin, 2014). Likewise minority groups in the United States face considerable discrimination in the labor market, at levels that have remained virtually unchanged for the past 25 years (Quillian, Pager, Hexel, Midtbøen, 2017). In fact, the majority of blacks living in the United States report having personally experienced unfair treatment because of their race or ethnicity (71%; Pew Research Center, 2016a).

One of the focal issues of the public debate on racial discrimination in recent years has been biased treatment in law enforcement and in particular the use of deadly force by police officers. Although the US government maintains only an incomplete database on the issue, estimates by public advocacy groups and journalists are that 1093 civilians were killed by police in 2016 (1146 in 2015).[4] For comparison, the total number of civilians shot and killed in Germany with a quarter of the US population was 11 in 2016 (10 in 2015).[5] While the US numbers are disproportionately high overall, they also show significant racial bias. Over 24% of the shooting victims in 2016 were black civilians who make up just

Box 11.4 Zooming In: How to Measure Bias in Police Use of Lethal Force

Earlier, we defined discrimination as any behavior toward category members that is directed toward them solely because they happen to be members of that category. In other words, discrimination consists of behavior that treats members of a group differently than anyone who doesn't belong to that group. Hence, discriminatory behavior is generally defined in relation to a benchmark alternative: similar behavior directed toward people from other groups.

In determining whether officers' use of lethal force is racially biased, identifying a proper comparison benchmark proves difficult. One possibility is to compare incident rates for different groups, relative to their proportion in the population. Based on this metric, black civilians face a significantly greater risk of being shot by police than any other group in the United States. For every million black people in the United States, about six to seven are shot every year. This rate is substantially higher than the corresponding rate for whites (less than three per million) or Asians (close to one per million; The Guardian, 2016).

[4]Based on estimates by the British newspaper *The Guardian* which published a database for the years 2015 and 2016 of all cases of police-involved shooting deaths recorded in police records and/or public sources (The Guardian, 2016)

[5]Report of the German Interior Ministry Conference (Innenministerkonferenz)

One problem with this metric is that it assumes that all of these groups are equally likely to interact with police officers in ways that could eventually lead to the use of lethal force. This may not be a valid assumption. For example, relative to their proportion in the population, blacks are more likely than whites to be convicted of violent crime. They therefore may face higher base rates for situations where the use of force is at least a possibility. When benchmarking police-involved shooting incidents against estimates of the likelihood to be involved in serious violent offenses, Cesario and colleagues no longer observed racial disparities (Cesario, Johnson, & Terrill, 2018).

However, a challenge in benchmarking against race-specific base rates for criminal behavior is that estimates of such behavior themselves are potentially biased. For example, if police use race to profile potential suspects, arrest and conviction rates no longer provide accurate estimates of actual criminal activity (see Goff, Lloyd, Geller, Raphael, & Glaser, 2016). In fact, when benchmarking against area-specific estimates of criminal activity (i.e., county-specific crime rates), racial disparities in police-involved shooting deaths continue to show significant racial bias (Ross, 2015). These analyses show the risk for black civilians in some counties to be up to 20 times higher than that for white civilians, controlling for the county's crime rates.

13% of the US population (27% black victims in 2015).

The claim that police officers are prejudiced in their use of lethal force is especially disturbing, not solely because of the grave consequences to the victims but also because it has potentially corrosive effects for the perceived legitimacy of law enforcement institutions. Shootings of a minority suspect lead to mistrust among community members and give rise to conflict between the community and police. In fact, blacks in the United States are much less likely as whites to hold positive views of local police. In a representative nationwide sample, only 14% of black respondents express having a great deal of confidence in their police department, compared to 42% among whites. Only a third of blacks believe police are using the right amount of force, less than half of the response rate for whites (Pew Research Center, 2016b; see also Weitzer & Tuch, 2004). One conceivable risk is that, in response to their mistrust, black people may alter their own behavior in interactions with police officers, becoming more belligerent, and thereby creating a vicious cycle where this belligerence leads to more severe use of force by police (Reisig, McCluskey, Mastrofski, & Terrill, 2004).

No doubt, the notion that officers sworn to uphold the law would deliberately prejudice their decisions to shoot a civilian threatens the basic foundations of a democratic society. However, it is helpful to consider the circumstances under which officers have to face decisions about the use of force: in all likelihood, these are situations of significant stress to the officer, who are facing a potential threat to their own life, in uncertain circumstances that can rapidly escalate, requiring an immediate split-second decision, without much opportunity for deliberation. In other words, these are circumstances where the officers' cognitive resources are taxed, the situation is likely to be ambiguous, and decisions have to be made under serious time pressure – all factors that facilitate implicit prejudice. While we should expect officers to be motivated to be fair and accurate in their decision, the situation may indeed bias them to make choices the officers do not necessarily intend.

First-Person-Shooter Task

Over the past 15 years, social psychological research has examined the effect of race on shooting decisions using videogame-like simulations. One frequently employed paradigm is the First-Person-Shooter Task (FPST; Correll, Park, Judd, & Wittenbrink, 2002). The paradigm presents participants with a series of male targets, either

black or white, holding weapons (i.e., handguns) or innocuous objects (i.e., wallets, cellphones). The task for participants is to shoot armed targets but avoid shooting unarmed targets. Participants are incentivized to make accurate decisions, but they have to do so under time pressure with limited opportunity to deliberate whether the target is indeed holding a weapon or something else. The task is designed to capture any implicit influences on participants' decisions.

Specifically, the FPST presents a series of background scenes and target images over the course of many trials (commonly 80 to 100 trials). On each trial, a random number of background scenes (0–3) appear in rapid succession, each scene for a random duration (500–800 milliseconds). Next, a final background appears. This background is then replaced by a target image – an image of a man embedded in the same background (e.g., an armed white man standing in the scene; see Fig. 11.1, right panel). The resulting effect for participants is that the target seems to "pop up" in the scene. Participants are instructed to respond as quickly as possible whenever a target appears via pressing one of two keys on a computer keyboard. If the target is armed, the task is to press the key labeled *shoot*, and if the target is unarmed, to press the key labeled *don't shoot*. Importantly, across trials, the nature of the target image varies systematically. Half of the targets are armed with a handgun, and half are unarmed and instead carry an innocuous object, like a cellphone or wallet. Within each type of target (armed and unarmed), half of the images depict a black man and half a white man. To introduce time pressure and encourage fast responding, the task imposes a response window, during which the response has to be recorded (between 630 and 850 ms). Similar to popular videogames, correct responses earn points, and errors or timeouts result in penalties.

The results of some 20 FPST studies consistently show racial bias in both the speed and accuracy with which participants can make their decisions. Participants are faster and more accurate when shooting an armed black man rather than an armed white man, and faster and more accurate in their decisions to an unarmed white man rather than an unarmed black man (Correll et al., 2002; Correll, Park, Judd, & Wittenbrink, 2007; Correll, Park, Judd, Wittenbrink, Sadler, et al., 2007; Correll et al., 2015; see Fig. 11.2). Conceptually similar effects have been obtained in other labs with varying procedures and for varying ethnicities (Amodio et al., 2004; Greenwald, Oakes, & Hoffman, 2003; Payne, 2001; Plant, Peruche, & Butz, 2005; Unkelbach, Forgas, & Denson, 2008). Much of this research has been conducted with college students, but the effect has been replicated with community samples of white and black participants, as well as with police officers (Correll, Park, Judd, Wittenbrink, Sadler, et al., 2007).

The crucial point of these findings of course is that with just a few additional seconds of time, decisions are made with perfect accuracy. It is the limited time available to fully appreciate and resolve the complexity of the stimulus input and then execute the respective response that gives

Fig. 11.1 Example target images for the First-Person-Shooter Task (Correll et al., 2002)

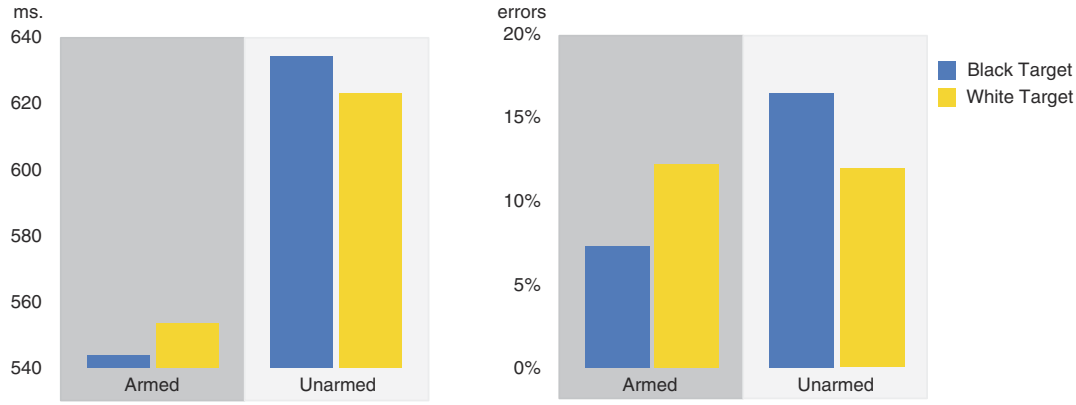

Fig. 11.2 Response latencies (left panel) and error rates (right panel) for armed and unarmed targets by target race in the First-Person-Shooter Task; Correll et al. (2002)

rise to erroneous responses. Hence, the effects reflect implicit influences from the early spontaneous activation phase, where information related to the race of the target comes online. To make a correct decision, only the correct detection of the object held by the target matters. Any target-related information is in and of itself irrelevant to the decision. But it is difficult to correct for or detect this spontaneous input that is associated with the race of the target.

Several studies from our lab have explored in greater detail the exact nature of this implicit influence. We have found that it is cultural stereotypes associating black people with the concepts of danger and threat that are activated spontaneously. Temporarily increasing (lowering) the accessibility of these stereotypes exacerbates (reduces) racial bias in the FPST (Correll, Park, Judd, & Wittenbrink, 2007).

Moreover, the spontaneous danger stereotypes activated early in the decision process influence what participants conclude to see in the hands of the target. They are more likely to see a gun in the hands of a black target, while they see something

Box 11.5 Question for Elaboration

Given the research on racial bias in the FPST, what would you advise police departments do to limit the negative consequences of implicit prejudice?

Box 11.6 Zooming In: Perception or Response Execution?

Spontaneously activated danger stereotypes can influence subsequent responses in two principled ways. (1) They can shape the perceiver's perceptions; and (2) they can interfere with a proper execution of the response.

The latter mechanism suggests that the stereotype has a direct influence on the decision, without impacting perception of the critical object. That is, stereotypic associations with threat and danger operate as a separate input that favor a *shoot* response, even in circumstances where the object is correctly identified as a non-weapon. In this scenario, object information and stereotype are in conflict and compete with one another for influence on the response. As the stereotype comes online rapidly, it may win out when decisions have to be made under time pressure. With additional time, it is possible to reconcile the conflicting input and to recognize that the stereotype is irrelevant to the decision (Payne, Shimizu, & Jacoby, 2005). Additional time to reach a decision will only improve decision accuracy if it can be used to improve object perception. For example, if the object is visible for only a brief moment, additional time to reflect on the decision may not reduce bias (Correll et al., 2015).

innocuous in the hands of a white target (Correll et al., 2015).

Practical Implications

These findings on racial bias in shooting decisions help us better understand why police officers may be prejudiced in their use of lethal force. Importantly, they point to the possibility that such bias can result from implicit, unintended influences. This form of bias reflects larger societal ills that produce and perpetuate cultural stereotypes of black people as dangerous and threatening. Police officers are exposed to and influenced by these stereotypes much like everyone else. While definitely requiring intervention to eliminate the bias, the explanation contrasts starkly with the alternative scenario where police officers willingly target civilians because of their prejudice against people of color.

In the United States, following a series of police-involved shootings, community unrest, and the emergence of the *Black Lives Matter* advocacy group, police departments and government agencies across the country are pressured to take action. They have taken notice that racial bias may occur implicitly and are now spending considerable resources on possible fixes. The State of California and the US Department of Justice both independently launched mandatory antibias training programs for officers and for federal agents.

The concern is no doubt real, and interventions are sorely needed. However, whether antibias training programs, which aim to increase awareness of implicit sources of bias, are effective is entirely unknown. To date, there is no credible research available on the long-term consequences of such training interventions. In fact, they may be counterproductive in several ways.

First, deliberate efforts to avoid racial bias in decisions about the use of force may actually endanger rather than save the lives of black suspects. Several studies have shown that conscious efforts to avoid bias, for example, intentionally trying to respond in an egalitarian fashion, can actually backfire, leading to *more* bias rather than less (Liberman & Förster, 2000; Macrae, Bodenhausen, Milne, & Jetten, 1994; Payne, Lambert, & Jacoby, 2002).

Second, interventions that alter the way officers approach a potentially dangerous situation may endanger the lives of the officers. In a potentially hostile confrontation, officers often experience fear. Fear can be a useful cue in as much as it sensitizes to real threats in the environment. But officers who have been taught about implicit bias and prejudice may attempt to ignore their fear response. As a result, they may end up underestimating real threats in an effort to avoid the appearance of bias.

Third, antibias training may have no effect at all. Compared with the other risks, we just noted this liability may seem trivial. But in actuality it may prove to be quite harmful as antibias training ties up significant policy and material resources. For decades, the public has remained largely uninterested in the issue of racial bias in law enforcement. This has finally changed, and government agencies face pressures to intervene and address the problems. But if antibias training has no effect, the political capital and the money spent will be wasted.

Hence, the most practical implication of existing research on implicit prejudice in shooting decisions ought to be that we need further research on possible intervention strategies and their formal evaluation.

Important Caveats

We have illustrated how implicit prejudice can be a useful construct to better understand why police officers are biased in their use of lethal force. However, it is important to recognize that not all bias is implicit, nor is all bias necessarily psychological in origin. Implicit prejudice is only one of possibly many factors that help explain this complex issue.

First, not all officer actions necessarily reflect implicit influences. To the contrary, several of the recent shootings that received public attention

appeared to follow from deliberate acts on the side of the officer. In the case of Walter Scott, for example, who was killed in 2015 in North Charleston, SC, officer Michael Slager fired several shots from behind the victim. Scott was not threatening the officer, nor was he armed. Indeed, Slager must have known the victim was unarmed because, immediately after the fateful shots, video footage shows the officer walking over to Scott and planting a weapon in an apparent effort to justify his own actions.[6]

Second, although officers make individual choices and are held accountable for those choices, their actions are also influenced by institutional, structural factors that have little to do with the individual officer and his or her preferences and attitudes. For example, municipalities rely to a good extent on revenues from citations for traffic violations and similar minor legal transgressions. The effectiveness of police work is measured by statistics that capture crime and arrest rates. A city's revenue needs and arrest rates ultimately impact officer incentives – either implicitly through informal directives or patrol assignments or explicitly through formal quotas. These incentives, in turn, influence what kinds of interactions officers have with the community. Aggressive ticketing and arrest quotas are unlikely to foster an environment of trust between officers and the community. In the absence of trust, otherwise innocuous interactions may more readily escalate into a hostile confrontation.

Summary

- Prejudice is a negative predisposition toward a social group and its members. It represents an attitude, evaluation, and inclination to act in a particular way. Those acts can reflect deliberate choices to discriminate.
- However, for well-established, overlearned attitudes, evaluations and related group stereotypes may be triggered automatically, without intent, effort, or conscious awareness. They may influence judgment and behavior implicitly, without any intent to discriminate or treat members of one group different from those of another group.
- Factors that promote implicit influences are:
  - Inadequate time to deliberate one's actions
  - Limited cognitive resources because of fatigue or distraction
  - The ambiguity of the situation
  - Lack of motivation to act in a careful and accurate manner
- Police officers sometimes have to make important decisions about the use of lethal force under circumstances that increase the risk of implicit influences: these decisions can be split-second decisions, made in a highly stressful situation with considerable uncertainty.
- Laboratory simulations of such decisions show clear evidence of implicit bias from negative racial stereotypes that associate black people with danger: participants are faster and more accurate when shooting an armed black man rather than an armed white man, and faster and more accurate in their decisions to an unarmed white man rather than an unarmed black man.

Recommended Reading

Amodio, D. M., & Mendoza, S. A. (2010). Implicit Intergroup Bias: Cognitive, Affective, and Motivational Underpinnings. In B. Gawronski & B. K. Payne (Eds.), *Handbook of Implicit Social Cognition* (pp. 353–274). New York, NY: Guilford Press.

[6] https://www.theguardian.com/us-news/2015/apr/07/south-carolina-police-officer-murder-charge

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Payne, K. B., Vuletich, H. A., & Lundberg, K. B. (2017) The Bias of Crowds: How Implicit Bias Bridges Personal and Systemic Prejudice. *Psychological Inquiry, 28,* 233–248.

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Guiding Answers to Questions in the Chapter

1. Q1 (with Box 11.2): What distinguishes *implicitly operating prejudice* from *prejudice* more generally?

   A1: Implicit prejudice refers to influences of prejudiced group attitudes on judgment and behavior that are unintended. Our judgment of another person may be shaped by her/his gender, without us trying to take gender into account or even knowing that gender played any role in our decision. By contrast, prejudice can have entirely explicit effects, for example, judgments that we make with deliberate consideration of our group attitudes.

2. Q2 (with Box 11.3): What kinds of situations can you think of that might be especially prone to implicit influences from prejudice?

   A2: Any situation where people have limited motivation and/or opportunity to reflect upon their reactions. Many aspects of human interaction happen mindlessly where people don't spend much effort to reflect on or regulate their behavior – like the quick exchange with the clerk at the coffee shop. In other situations, people may be motivated to make correct judgments and act in a proper fashion. Yet, the situation is such that the opportunity for reflection and deliberation is missing. For example, people may lack awareness of aspects of their nonverbal communication, precluding them to reflect and possibly correct what is being communicated. Likewise, the circumstances of the situation itself may curtail people's opportunity to deliberate their judgments and actions. When they are busy, stressed, and make decisions under time pressure, people are more prone to show implicit bias. An overworked physician at a nightshift at the ER will face greater risk in this regard than the doctor who provides written consultation on the case, following a detailed review.

3. Q3 (with Box 11.5)**:** Given the research on racial bias in the FPST, what would you advise police departments do to limit the negative consequences of implicit prejudice?

   A3: This is a trick question. To date, existing research on the effect of race on shooting decisions does not speak to the issue of intervention. The research does make the case that implicit influences can possibly impact officer decision-making. It identifies a *potential* source for bias, one that is quite different from the alternative, where officers are deliberately prejudiced. As such, the research suggests additional opportunities for intervention. But what those interventions are, and whether they are effective relative to alternative options available in the field cannot be answered by the research to date. In fact, few studies have explicitly investigated strategies to mitigate shooter bias. It is unknown how any such effects in the laboratory might transfer to the real world.

   This is an important lesson for how to properly apply scientific theory and laboratory research findings to real-world problems. The laboratory helps us to more fully understand the real world. But to fix a problem and change the world, additional research is generally required that translates predictions and findings to the specifics of a real situation. For this reason, medical interventions undergo elaborate field tests before they receive certification.

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Mindset Theory

12

Katharina Bernecker and Veronika Job

Contents

Introduction

When Roger Federer says "I believe that I can still improve my game" (Hudson, 2014), this feels impressive but also somewhat odd; how can somebody with his achievements (at the time, aged 33, he had already won 17 Grand Slam tournaments, more than any other male player in the world) still believe that he can improve? Could such an extraordinary confidence in his ability to learn and to improve himself be part of his unmatched success as Grand Slam winner? Rodger Federer's quote illustrates what Carol S. Dweck called a **growth mindset**.[1] It involves the passion for learning, growth, and constant self-improvement and makes people capable of overcoming challenges and setbacks through endurance and the investment of effort. It's counterpart, the so-called **fixed mindset**, is characterized by the belief that one's competencies and talents (like intelligence or creativity) are carved in stone and basically unchangeable. According to Mindset Theory, people with a fixed mindset, as compared to a growth mindset, are more interested in proving and validating themselves than in actual improvement and, hence, more vulnerable to get discouraged by mistakes and setbacks.

[1]The use of the term "mindset" here is different from that used in the Mindset Theory of Action Phases (cf. Keller, Bieleke, & Gollwitzer, Chap. 2).

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Definition Box

Mindsets (or implicit theories) are people's lay beliefs about the nature of human attributes, such as intelligence or personality.

Fixed mindset (or entity theory) is the belief that human attributes, such as intelligence or personality, are fixed and cannot be changed.

Growth mindset (or incremental theory) is the belief that human attributes, such as intelligence or personality, are malleable and can be changed substantially.

The development of Mindset Theory originally began in the 1970s when Carol S. Dweck in her studies observed that children reacted very differently to challenges and setbacks (Dweck, 2012a). While some children were easily unsettled by difficulties and desperately tried to avoid them, others liked challenges and were even actively seeking them. Being intrigued by this observation and searching for an explanation, the idea of "implicit theories" was born when she and her colleague Mary Bandura figured that the meaning of failure was dependent on children's view of ability as something deep-seated and permanent or something they can develop. This insight built the starting point of an extensive research program in which Dweck, together with her colleagues and students, explored the origins and consequences of people's **implicit theories** in a variety of domains, such as academic and occupational achievement, health, or interpersonal relationships (Burnette, 2010; Dweck, 1999, 2012a, 2012b; Molden & Dweck, 2006; Yeager & Walton, 2011; for meta-analyses see Burnette, O'Boyle, VanEpps, Pollack, & Finkel, 2013; Sisk, Burgoyne, Sun, Butler, & Macnamara, 2019). In this chapter, we will first describe Mindset Theory and its underlying mechanisms in the intellectual-achievement domain and interpersonal domain before we turn to an application of Mindset Theory in the context of interpersonal aggression.

Incremental Versus Entity Theories

People hold implicit theories about different personal attributes such as intelligence, personality, moral character, willpower, or body weight (Burnette, 2010; Chiu, Dweck, Tong, & Fu, 1997; Dweck, Chiu, & Hong, 1995; Hong, Chiu, Dweck, Lin, & Wan, 1999). In any case, an **entity theory** is marked by the idea that the attribute in question cannot willingly be changed, whereas an **incremental theory** is marked by the idea that it can be changed with effort (for an exception see Box 12.1). Importantly, these beliefs are about the *potential* to change not about the actual likelihood of change to occur (Yeager, Trzesniewski, & Dweck, 2013). That is, people can believe that personality can be changed, while they do not necessarily think that many people do change. It is further important to note that people's implicit theories are not necessarily the same for different attributes. The same person might believe that people can grow their intelligence quite substantially but that personality is a relatively fixed entity. This example implies another important feature of implicit theories, namely, that the agreement with an entity versus incremental theory is continuous. Research suggests that about 40% of people clearly endorse either a fixed or a growth mindset. But about 20% of people cannot be categorized into either group (Dweck, 2012a). So keep in mind that when we talk of people holding an entity or incremental theory, this is a simplification, which we use to explain findings in a comprehensible way.

Box 12.1 Zooming In: Implicit Theories About Willpower

While most implicit theories deal with the question of *malleability* of human attributes, implicit theories about willpower deal with the question whether people believe that willpower is *limited* versus *nonlimited* (Job, Dweck, & Walton, 2010). Willpower or self-control describes people's

capacity to alter their behavior, thoughts, and emotions in order to bring them into line with their own long-term goals or some external standard such as social expectations (e.g., Baumeister, 2002; Carver & Scheier, 1982; Metcalfe & Mischel, 1999; see also Gieseler, Loschelder, & Friese, Chap. 1). Some people believe that this capacity resembles a limited resource that gets depleted whenever used (limited-resource theory). Other people, however, reject this view and rather believe that using their willpower can even activate their mental stamina and prepare them for upcoming challenges (nonlimited-resource theory). In multiple laboratory studies, Job et al. (2010) found that only people with a limited-resource theory show declines in self-control performance given a previous self-control task (also known as ego-depletion effect), while people with a nonlimited-resource theory remained a high level of self-control performance. Field studies also linked willpower theories to self-control in everyday life. During the final examination period, when self-control is most important, students with a limited-resource theory procrastinate more, eat less healthy, and even earn lower grades compared to their fellow students with a nonlimited-resource theory (Job, Bernecker, Walton, & Dweck, 2015; Job et al., 2010).

Measurement of Implicit Theories

Usually, people are unaware of the beliefs they hold, which is why these beliefs are referred to as "implicit." Still, when being asked about what they think, whether human attributes can change or not, people can easily respond to this question. Therefore, implicit theories are measured via self-report (rather than with implicit measures such as reaction time paradigms). In accordance with their field of interest, researchers have developed scales to assess implicit theories with regard to different personal attributes. Table 12.1 shows example items for an entity and an incremental theory regarding four attributes, namely, intelligence, personality, moral character, and groups. These are by far not the only attributes implicit theories have been studied of, but all of them deal with the question of malleability (see Box 12.1 for an exception).

Table 12.1 Example items for measuring implicit theories

Attribute	Example items
Intelligence	You have a certain amount of intelligence, and you can't really do much to change it. No matter how much intelligence you have, you can always change it quite a bit. (Reversed coded)
Personality	Everyone is a certain kind of person, and there is not much they can do to really change that. All people can change their most basic qualities. (Reversed coded)
Moral character	A person's moral character is something very basic about them, and it can't be changed much.
Groups	Groups can't really change their basic characteristics.

Note. Participants usually rate their agreement with each statement on a 6-point Likert-type scale (1 = strongly agree, 6 = strongly disagree; e.g., Dweck et al., 1995)

Box 12.2 Question for Elaboration

Can you think of other attributes that people might have implicit theories about?

Stability of Implicit Theories

You might wonder whether people's agreement with an entity versus incremental theory changes over time or can even be changed intentionally as part of an intervention. The answer is twofold. On the one hand, longitudinal studies usually find implicit theories to be relatively stable over time, almost similar to a personality trait (e.g., Robins & Pals, 2002). On the other hand, experimental

studies demonstrate that there are ways to change implicit theories for shorter and longer periods of time, depending on the intensity of the methods used. For instance, a mindset can be shortly induced by providing people with "scientific information" that supports one of the theories or they can be changed over periods of several weeks by means of an extensive workshop (Blackwell, Trzesniewski, & Dweck, 2007; Good, Aronson, & Inzlicht, 2003; Yeager, Trzesniewski, et al., 2013). We will introduce one example of a successful long-term intervention later in this chapter when we talk about the application of Mindset Theory.

Origins of Implicit Theories

So far, only a limited amount of research has addressed the question where implicit theories come from. Some studies examined the influence of parenting practices on children's implicit theories about intelligence. Early research found that praising children for their abilities rather than for their effort leads children to adopt an entity theory (e.g., Mueller & Dweck, 1998). More recent research extended these findings and found that parents' view of failures affect their children's implicit theories via different parenting practices (Haimovitz & Dweck, 2016). Parents who believe failure is enhancing (instead of debilitating) are more likely to raise children who believe that intelligence can be changed.

This research suggests that implicit theories are developed early in life (e.g., Haimovitz & Dweck, 2016 studied fourth to fifth graders). However, recent research suggests that they can also change later in life. For instance, research focusing on implicit theories about willpower (see Box 12.1) examined change in willpower theories in college students over the course of one semester. Two studies showed that when students pursued personal goals for intrinsic reasons (e.g., out of personal interest) rather than for extrinsic reasons (e.g., to please others), their belief in nonlimited willpower increased (Sieber, Flückiger, Mata, Bernecker, & Job, 2019). The bottom line of this research is that implicit theories are at least to some extend "construed" from the experiences people make—a process that probably continues over the course of one's life.

Mechanisms: Implicit Theories Work in Meaning Systems

A considerable amount of research has been dedicated to the mechanisms underlying the effects of implicit theories. This work has shown that implicit theories work in so-called meaning systems (Hong et al., 1999; Molden & Dweck, 2006). That is, people formulate theory-consistent goals, and interpret the effort experienced and outcomes of their actions in line with their implicit theories. Further, based on their theories, they pursue different strategies to overcome difficulties. Together people's goals, effort beliefs, attributions, and strategies build a coherent system that allows a person to make sense of the world and make predictions based on this understanding. In the following, we are going to introduce the four mechanisms that underlie the effects of implicit theories within the achievement and interpersonal domain (i.e., goals, effort beliefs, attributions, and strategies).

Learning and Performance Goals

Implicit theories determine what kind of goals people set in achievement situations. People who believe that their attributes are malleable and open to change set so-called **learning goals** that are directed at the development of their abilities. People who believe that their attributes are fixed are on the other hand concerned with validating their level of ability. Accordingly, they tend to pursue so-called **performance goals**[2] (e.g., Robins &

[2]Performance goals are sometimes defined as competitive goals (wanting to outdo others) or as simply seeking successful outcomes (such as high grades). However, research shows that these other goals do not create the same vulnerabilities as the goal of validating ability (e.g., Grant & Dweck, 2003). Throughout this chapter we use the term performance goals to refer to the goal of validating ability.

Pals, 2002). The goals individuals strive for in turn shape their cognitions, affect, and behavior and can thereby lead to different learning outcomes (e.g., Dweck & Leggett, 1988; Elliott & Dweck, 1988). For instance, one study used electroencephalography (EEG) to monitor brain activity associated with students' attention to feedback while taking a challenging test (Mangels, Butterfield, Lamb, Good, & Dweck, 2006). Results showed that both entity and incremental theorists eagerly attended ability-relevant feedback about whether their answer to an item was correct or incorrect. However, compared to incremental theorists, entity theorists were less interested in learning-relevant information about what the correct answer was (Mangels et al., 2006, see also Dweck, Good, & Mangels, 2004). Once their performance goals had been met by processing the ability-relevant feedback about whether their answer was correct or not, entity theorists felt no need to attent to the learning-relevant information (Mangels et al., 2006). Other studies have suggested that learning goals are related to the use of more effective strategies in the face of difficulties (e.g., Elliott & Dweck, 1988), "deep" learning strategies to approach difficult course material (e.g., Grant & Dweck, 2003), and better performance in challenging tasks (e.g., Mueller & Dweck, 1998). Overall, research suggest that implicit theories generate different concerns of either *developing* one's ability or to *proof* that one possesses a certain level of ability.

Definition Box

Learning goals (also often referred to as "mastery goals") reflect individuals' concern with increasing their competence.

Performance goals reflect individuals' concern with demonstrating a high level of competence.

Importantly, goals are not only an important mechanism in the intellectual-achievement domain but also in the domain of interpersonal relationships. Rudolph (2010), for instance, showed that implicit theories about peer relationships (whether they are fixed or can be improved with effort) predict the types of goals people set in social situations. Students holding an entity theory were more likely to set *performance-oriented social goals* (which are concerned with minimizing the risk for social failure or negative social judgment) rather than *mastery-oriented social goals* (which involve learning and developing relationships; Rudolph, 2010).

Effort Beliefs

Implicit theories in the achievement-intellectual domain are related to people's beliefs about effort. Many motivational theories are based on the basic assumption that effort is aversive and people only engage in effortful activities if they regard it as being worthwhile, for instance, if they can achieve a valued outcome (e.g., Kurzban, Duckworth, Kable, & Myers, 2013; Rollett, 1987; Wright, 1996). In line with this theorizing, research on implicit theories demonstrates that the beliefs people hold about the malleability of intelligence changes the meaning of effort. People endorsing an incremental theory regard effort as necessary and worthwhile for change. As a result they embrace situations that yield a challenge to their abilities—they know that change will not come easy and that they have to invest effort to grow. The meaning of effort differs when seen through the lens of an entity theory: If a person has to invest high effort to accomplish a task this implies a lack of ability or at least an insufficiency and there is nothing to be done about it. Thus, an entity theory gives a negative spin to the experience of effort and, as a result, drives people away from challenging situations (e.g., Blackwell et al., 2007; Dweck & Leggett, 1988; Hong et al., 1999). To our knowledge, effort beliefs have so far not been studied as mechanism driving outcomes within the interpersonal domain.

Attributions

As mentioned above, implicit theories affect how people make sense of challenges such as setbacks or failure. An entity theory drives people to attribute failure to what they believe are stable characteristics such as ability or traits. In contrast, an incremental theory leads people to attribute failures and setbacks to malleable entities such as effort, motivation, or aspects of the situation. Research shows that these differences in attributions explain why implicit theories predict different affective and behavioral responses to failures and negative feedback. For instance, Hong et al. (1999) showed that when students received negative performance feedback, they tended to attribute it to a lack of effort if they endorsed an incremental theory about intelligence (both when measured and manipulated). Accordingly, they took remedial action. In contrast, students with an entity theory attributed the feedback to a lack of ability and were less likely to take action to elevate their performance (Hong et al., 1999).

Attributions also play an important role in individuals' reactions to social challenges, such as social exclusion or intergroup conflicts (e.g., Halperin & Bar-Tal, 2011; Yeager, Miu, Powers, & Dweck, 2013). Studies showed that entity theorists tend to attribute other's behavior to their personality (e.g., "She behaved like that because she is a bad person"), while incremental theorists tend to make more situational attributions (e.g., "She behaved like that because she was in a rush"). These differences in attributions triggered by implicit theories lead to differences in people's emotional (e.g., anger, hatred) and behavioral (e.g., revenge seeking) reactions to socially adverse situations.

Mastery-Oriented and Helpless Strategies

Implicit theories also predict how people respond to challenges: people with an incremental theory are persistent and invest effort to master challenges and overcome setbacks—they use so-called mastery-oriented strategies. In contrast, people with an entity theory become easily discouraged by setbacks and react with helpless or defensive strategies (Blackwell et al., 2007; Hong et al., 1999; Robins & Pals, 2002). If people believe that their abilities are fixed, setbacks mean that they lack certain ability. As a result they are less willing to invest effort in overcoming the situation and try to avoid challenges. If people believe that they can grow their abilities, setbacks are interpreted as opportunities to learn rather than in terms of personal insufficiency. The idea of growth takes away negative feelings toward the self to dwell about and replaces them with a "readiness to act." A longitudinal field study traced 500 college students over the course of their 4 years of college and found that students with an entity theory were more likely to report helpless-strategies (e.g., "When I fail to understand something, I become discouraged to the point of wanting to give up."), while students with an incremental theory were more likely to report mastery-oriented strategies (e.g., "When something I am studying is difficult, I try harder."; Robins & Pals, 2002). Further, entity theorists showed a drop in self-esteem over the course of their college years, speaking to the negative implications for the self that are associated with challenges and setbacks for these students (Robins & Pals, 2002). Other studies in the laboratory found that students with an (induced) entity theory engage in strategies that preserve their self-worth. For instance, they choose to review the work of others doing more poorly than themselves rather than learning from those doing better than themselves (Nussbaum & Dweck, 2008). They are also more likely to consider lying or cheating in order to look better (Blackwell et al., 2007; Mueller & Dweck, 1998).

In the interpersonal domain, research has studied how implicit theories shape how people respond to experiences of social adversity or failure. For instance, when being victimized by their peers, students holding an entity theory about personality tend to react with desire for vengeance and aggression. In contrast, students holding an incremental theory choose a more resilient-prosocial response. For example, they tried to be "cool" about an incidence of victimization and wanted to educate their transgressor

Table 12.2 Overview of mindset processes

	Implicit theory	Goal orientation	Effort beliefs	Attribution of adversity	Strategies in the face of adversity
Achievement domain	Entity theory	Learning goals	Effort as lack of ability	Lack of ability	Helpless/defensive responses
	Incremental theory	Performance goals	Effort as necessary for growth	Lack of effort	Mastery-oriented responses
Interpersonal Domain	Entity theory	Social-learning goals	(–)	Trait-based judgments	Prosocial-resilient responses
	Incremental theory	Social-performance goals	(–)	Situation-/process-based judgments	Punitive-aggressive responses

(Rudolph, 2010; Yeager & Dweck, 2012; Yeager, Trzesniewski, et al., 2013).

To sum up, implicit theories work in meaning systems and have motivational, emotional, and behavioral consequences on different levels. The two major domains—achievement and interpersonal—in which implicit theories have been studied largely align in the mechanisms that have been observed. Table 12.2 summarizes the main mechanisms studied for both domains. In both domains implicit theories are associated with different goals people set, they shape how adversity is interpreted, and which strategies people choose to deal with these adversities. Effort beliefs have been studied in the achievement domain only, although one could also imagine that people evaluate effort they experience within their relationships differently, if they endorse an entity versus incremental theory.

Box 12.3 Question for Elaboration

Why are implicit theories often referred to as working in a "meaning system," and what does the term describe?

Application of Mindset Theory in the Context of Interpersonal Aggression

In the previous sections, we have described the basic tenets of Mindset Theory. It proposes that people differ in their beliefs about the malleability of human attributes, such as intelligence and personality. We described research showing how these basic assumptions affect key outcomes in the intellectual-achievement domain and the interpersonal domain. In this last section of the chapter, we want to describe an intervention study that applied Mindset Theory to tackle the problem of **bullying**, which is present in schools (and workplaces) around the world. In a representative sample of $N = 15.686$ US students from sixth to tenth grade, 30% reported moderate to frequent involvement in bullying. Either they bullied themselves or they had been bullied (Nansel et al., 2001). Further, research shows that students who are victimized by their peers suffer in terms of psychological adjustment (e.g., depression, loneliness) and they are at higher risk of suicidality (e.g., Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2007; Nansel et al., 2001; Rudolph, 2010). These findings call for the investigation of ways to reduce the prevalence of bullying and to help students cope with victimization by their peers.

Definition Box

Bullying is defined as a specific type of aggression in which a more powerful person (or group) is attacking a less powerful one repeatedly over time with the intention to do harm (Nansel et al., 2001).

Research suggests that applying Mindset Theory in this context might serve both purposes. Studies show that students' implicit theories about personality shape their emotional and

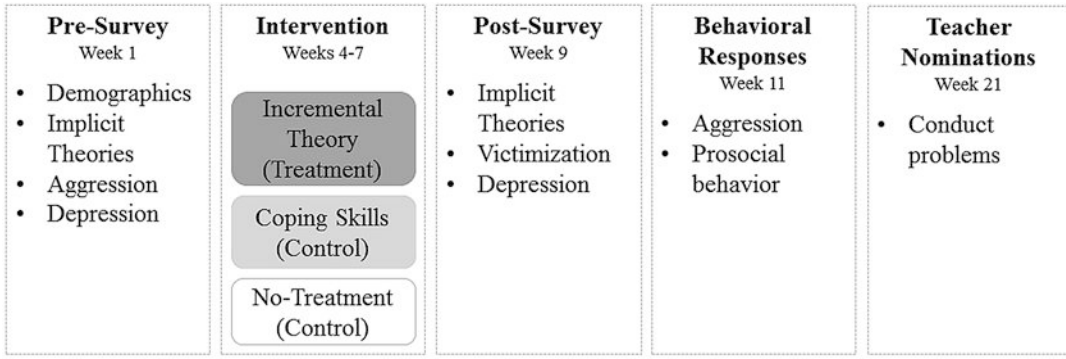

Fig. 12.1 Overview of the procedure of the intervention study, adapted from Yeager, Trzesniewski, et al. (2013)

behavioral response to experiences of victimization (Yeager & Dweck, 2012). When being insulted or excluded by their peers, students with an entity theory are more likely to desire vengeance and aggression (Yeager & Miu, 2011; Yeager, Trzesniewski, Tirri, Nokelainen, & Dweck, 2011). Peer-victimized students also report more depressive symptoms, if they endorse an entity theory (Rudolph, 2010). For an entity theorist, victimization is done by "bullies," who will never change, to "losers," who will never change. This belief leaves victims of bullying hopeless about their own future, because they believe they will always be the ones being picked on. Moreover, it justifies a vengeful-aggressive response toward the perpetrators who are seen as "bad people". An incremental theory, on the other hand, implies that both victims and bullies can change, suggesting that they might get out of their role eventually. This perspective opens up the possibility of a more prosocial-resilient reaction to bullying, such as educating the perpetrators (Yeager & Dweck, 2012; Yeager et al., 2011; see also Yeager & Miu, 2011).

Building upon these findings, Yeager, Trzesniewski, et al. (2013) designed an intervention study targeting adolescents' implicit theories about personality in order to help them cope with social adversity in their everyday life. The study had a *pre-post control group design* with a treatment group, an active control group, and a no-treatment control group. The main hypotheses of the study were that an incremental theory intervention would (a) reduce aggression and increase prosocial behavior in response to an incidence of peer exclusion, (b) reduce conduct problems in school (i.e., aggression, acting out) and (c) reduce depressive symptoms among peer-victimized students (Yeager, Trzesniewski, et al., 2013).

The researchers randomly selected a medium-to-large size school from a list of 20 schools in the San Francisco Bay Area that fulfilled different criteria with regard to cultural diversity and social background. From the selected school, 246 students from ninth and tenth grade (14–16 years old) participated in the study (Yeager, Trzesniewski, et al., 2013).

An overview of the procedure is depicted in Fig. 12.1. Three weeks prior to and 2 weeks after, the intervention participants filled out surveys assessing some of the dependent variables (i.e., implicit theories about personality, aggression/victimization, depressive symptoms). Further, 1 month after the intervention, the researchers collected behavioral responses (i.e., aggression, prosocial behavior) to peer victimization among a balanced subset of 150 students. Last, 3 months after the intervention, 16 teachers reported observed reductions in conduct problems (e.g., acting out in class) among their students.

The intervention itself was administered in six sessions during students' biology classes. Students were randomly assigned to one of three conditions: the incremental theory group, the coping skill group, or the no-treatment group. Two teams of adult paid facilitators were trained

by the researchers to teach either the incremental theory workshop or the coping skill workshop. Facilitators were blind to hypotheses and post-intervention interviews revealed that all of them thought they were providing the target treatment. The workshops were designed to be parallel in many ways, for instance, with regard to materials and didactic methods applied.

Box 12.4 Questions for Elaboration

What purpose serves the active control group in an intervention study (the coping skill group in the example study)?

What might have been reasons for Yeager Trzesniewski, et al. (2013) to also include a no-treatment control group?

The incremental theory workshop covered three segments, each of them designed to teach one key message via different kinds of activities. In the first segment, students learned basic information about neuroanatomy and how the brain changes during learning. The second segment then focused on neural mechanisms that support the view that personality can change. The third segment focused on the translation of an incremental theory into participants' everyday life and covered the main message that people have different motivations for their actions (e.g., thoughts, feelings) which can also be changed. This last segment also corrected possible misconceptions (e.g., incremental theory does not suggest that people change all the time). The coping skill workshop was based on a widely used coping skill curriculum for high-school students (Frydenberg, 2010) and was shortened to parallel the incremental theory workshop. It was designed to be as enjoyable and engaging as the incremental theory workshop and used the same methods and in parts even provided the same information, for instance, information about neuroanatomy and how the brain learns.

To examine the effectiveness of the intervention, the researchers collected both self-report and behavioral measures. As behavioral measure of aggression in response to peer exclusion, Yeager et al. (2013) administered the "hot sauce paradigm," which had previously proven to be a valid measure of aggression in adolescents (Lieberman, Solomon, Greenberg, & McGregor, 1999). The testing was administered in group sessions by research assistances who were blind to condition and hypotheses. First, students played a video game called "Cyberball" (Williams, Cheung, & Choi, 2000), in which they experienced social exclusion. In this video game participants toss a ball together with two other players, who are supposedly controlled by two other students in the room. In fact, unknowingly, participants played with the computer program only. After being thrown the ball twice in the beginning, they are not thrown it again. This procedure typically produces negative feelings of being socially excluded. Afterwards participants were asked to take part in a supposed "taste testing" activity, in which their partner has to eat all the food (i.e., hot sauce) they assign to him/her. They also learn that they are coupled up with one of the players who had previously excluded them in the ball toss game and that this student dislikes spicy food. The measure of aggression is the amount of hot sauce they assign to their partner. As a measure of prosocial behavior, participants were asked to write a note that would be handed to their partner together with the hot sauce. These messages were later coded for levels of prosociality (e.g., apologizing for the hot sauce).

Results showed that, compared to both the no-treatment and the coping skill group, students who had received the incremental theory workshop assigned significantly less hot sauce and wrote more prosocial messages. Importantly, only the incremental theory workshop increased students' agreement with an incremental theory from before to after the workshop, suggesting that the difference between groups can be attributed to changes in incremental theory. Further, in the no-treatment group, students who reported being victims of bullying reported more depressive symptoms than non-victims. However, within *both* treatment groups, the number of depressive symptoms did not differ between victims and non-victims. This result suggests that

both workshops (incremental theory and coping skills) were effective in reducing the negative effect of bullying on students' psychological adjustment.

The study applied Mindset Theory, building on a large basis of studies suggesting that implicit theories play a crucial role in the response to victimization (Yeager & Dweck, 2012; Yeager & Miu, 2011; Yeager, Miu, et al., 2013; Yeager et al., 2011) and studies suggesting that implicit theories can be changed (Aronson, Fried, & Good, 2002; Yeager et al., 2011). Note, that the researchers applied Mindset Theory rigorously throughout the design of their study. For instance, they assessed victimization by peers, which later served as moderator of the effect of the workshop on depressive symptoms and conduct problems. This decision was based on the knowledge that implicit theories are most important in situations when people face difficulties (Blackwell et al., 2007; Dweck, 2012b; Hong et al., 1999; Sisk et al., 2019; Yeager & Dweck, 2012). Whether and how this intervention can be applied on a larger scale (e.g., in entire schools or school districts) is an interesting question for future research.

Summary

- Mindset Theory proposes that people hold different beliefs about whether people can or cannot change basic psychological attributes, such as their intelligence or personality.
- An incremental theory refers to the belief that people can substantially change with effort, while an entity theory refers to the belief that human attributes are fixed.
- Implicit theories affect important outcomes within the achievement and interpersonal domain (e.g., academic achievement, interpersonal aggression) via a set of cognitive and motivational processes that interact in a coherent "meaning system."
- Research identified four processes that drive effects of implicit theories: goal orientation, effort beliefs (only studied in the achievement domain), attributions of setbacks or social adversity, and behavioral strategies to respond to setbacks or social adversity.
- Intervention studies have applied Mindset Theory to the domain of interpersonal aggression and suggest that teaching adolescents an incremental theory about personality (i.e., the belief that people can change their personality) helps them to respond to social adversity (e.g., exclusion by peers) more adaptively (i.e., less aggression, less depressive symptoms).

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Guiding Answers to Questions in the Chapter

1. Question with Box 12.2: Can you think of other attributes that people might have implicit theories about?

   A: Research has identified many implicit theories, and not all of them are dealing with the malleability of an attribute but most are. Other examples of an implicit theory are implicit theories about passion as something to be found or developed (Chen, Ellsworth, & Schwarz, 2015; O'Keefe, Dweck, & Walton, 2018), implicit theories of romantic relationships as being characterized by romantic destiny or relationship growth (Knee, Nanayakkara, Vietor, Neighbors, & Patrick, 2001). Other examples are implicit theories of emotion regulation (Tamir, John, Srivastava, & Gross, 2007) and negotiation skills (Kray & Haselhuhn, 2007).

2. Question with Box 12.3: Why are implicit theories often referred to as working in a "meaning system," and what does the term describe?

   A: The term "meaning system" describes the multitude of processes that research identified as driving effects of implicit theories, such as goal setting, effort beliefs, attributions, and strategies people use in the face of adversity. These processes are not independent but rather linked with each other and together form a coherent system that allows the person to "make sense" of the world and make predictions based on this understanding. Depending on the implicit theory people hold, they formulate goals that make sense in their view (i.e., performance versus learning goals); they form coherent beliefs of effort (i.e., as signaling lack of ability versus conducive to change), attribute their setbacks in the accordance to their theory (i.e., as being due to lack of ability versus effort), and follow strategies that are in line with their belief (i.e., helpless versus mastery-oriented).

3. Question with Box 12.4: What purpose serves the active control group in an intervention study (the coping skill group in the example study)? What might have been reasons for Yeager, Trzesniewski et al. (2013) to also include a no-treatment control group?

   A: From a methodological point of view, an active control group helps researchers to determine whether changes in their targeted outcome are due to the specific intervention message (here an incremental theory about personality) and not only due to the fact that participants received any kind of treatment. From a practical viewpoint, having the active control group engage in a treatment that has been proven to be successful on the targeted outcome helps to compare the effectiveness of the intervention and therefore to determine which of the two is most effective (from an ethical standpoint, it is also better to provide the control group with some kind of effective, state-of-the-art treatment). No-treatment control groups are also often part of the design, because they help to control for other processes that might otherwise be overseen or even changed by the treatment (e.g., natural change in the outcome occurring over a period of time). Further, by only comparing two treatment groups, it is not possible to judge whether perhaps the control treatment made things worse in terms of the outcome or whether there was any effect (e.g., if both treatments have been equally effective).

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Part II

Combining Theoretical Insights: Addressing Complex Human Behavior

The Road to the Piggy Bank: Two Behavioral Interventions to Increase Savings

13

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Contents

On the Importance of Having Money and Saving Some of It

Poor financial decision-making can have a long-lasting impact on individuals and society. Therefore it is perhaps not surprising that households' incomes, savings, and debts are extensively monitored by national and international organizations. A recent survey of the Organization for Economic Co-operation and Development (OECD) showed that, in G20 countries, on average 22% of all respondents had to borrow money to make ends meet in the previous year (OECD, 2017). Furthermore, 11.6 million adults living in the UK are categorized as struggling financially (Money Advice Service, 2016), whereas almost one in five Dutch households has debts that can be considered problematic (Simonse, Wilmink, & Van der Werf, 2017). These numbers indicate that even in countries considered to be well-developed and wealthy, many people fail to make ends meet and are at risk of running into financial problems.

This should be a reason for concern, because financial problems can cause stress, tensions within families, domestic violence, poor physical and psychological health, stigmatization, social isolation, and even suicide (e.g., Chapman & Freak, 2013; Drentea, 2000; Drentea & Lavrakas, 2000; Lane 2016). Moreover, the impact of financial problems reaches further than the individuals

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and families directly involved. For example, the financial problems of households in the Netherlands cost the Dutch society an estimated 10 billion euros a year. This amount includes, among others, costs for debt assistance, benefit payments, reduced work productivity, house evictions, and childcare (Simonse et al., 2017).

Given the profound impact that financial problems have on individuals, their families, and society as a whole, financial resilience (which includes preventing problematic debts) and financial self-reliance are of utmost importance (OECD, 2016; Simonse et al., 2017). People should, for example, manage their money well on a day-to-day basis: having a budget, keeping records of expenses, and keeping up with payment and other financial commitments. Moreover, they should engage in financial planning: making provision for retirement, being aware of financial risks and opportunities, and taking effective actions to minimize the effects of financial risks, such as taking out appropriate insurances or putting sufficient money aside in savings (OECD, 2016). Research by the Consumer Financial Protection Bureau of the USA (2017) underlines the importance of "healthy" financial behavior, such as sound financial planning. Their results showed that saving money—thereby increasing resilience to unexpected expenses—is one of the strongest predictors of financial well-being.

Box 13.1 Question for Elaboration

Have you put aside sufficient money in savings?

Although financial resilience and financial self-reliance are crucial for financial well-being, people struggle with making healthy financial decisions. For example, often people do not manage to put sufficient money aside in savings in order to be prepared for financial calamities. Why is this the case? First, there might be financial reasons. For example, people might simply need all their money to make ends meet. Especially for households with low (or even moderate) incomes, insufficient financial resources might drive low saving rates. Some of these low-income households, however, do manage to save money, whereas those with sufficient financial resources sometimes fail to do so (e.g., Hayhoe, Cho, DeVaney, Worthy, Kim, & Gorham, 2012). Apparently, there is more to saving than having the money for it. Indeed, other reasons for not saving often are of a more psychological nature. For example, saving money means sacrificing immediate gratification for future financial well-being, which, in turn, means overcoming a number of psychological hurdles. In the next section, we will elaborate on several of these hurdles.

Why Saving Doesn't Come Easy

A first psychological hurdle on the road to the piggy bank is the **optimism bias** (Sharot, 2011). In general, people are (too) "rosy" about their financial future. For example, they tend to overestimate their future income while underestimating their future spending and expenses (Lewis & Van Venrooij, 1995; Norvilitis et al., 2006; Peetz & Buehler, 2009) and therefore fail to see the necessity of putting money aside for future financial needs.

Definition Box

Optimism bias: The tendency to overestimate the probability of positive events and underestimate the probability of negative events.

Even when people are more realistic about their financial future and consider the risks they might face, there is still no guarantee that they will build a financial buffer in their savings account. To do so would mean resisting the temptation of spending money now in favor of spending possibilities in the future, and this requires **self-control** (Thaler & Shefrin, 1981; see also Gieseler, Loschelder, & Friese, Chap. 1). Many people, however, have "self-control issues."

And they know it, because they are perfectly willing to use a **commitment device** to deal with these issues (Rogers, Milkman, & Volpp, 2014; Van der Swaluw et al., 2018). For example, to preempt overspending, people cut up their credit cards, literally freeze them in a container of water, or sign up for savings accounts that charge withdrawal penalties for early take-up (Ashraf, Karlan, & Yin, 2016). And banks also know it. Already in 1910, Dutch banks provided clients with "saving canisters" that could only be opened by the bank. Actually, people have been outsourcing financial self-control to their environments for centuries, as money boxes that had to be broken before the valuables inside could be spent date back to at least the fourteenth century.

Definition Box

Self-control: The ability to regulate one's thoughts, emotions, and behavior in the face of temptations and impulses.

Commitment device: A voluntary imposed arrangement that restricts future behavior to avoid temptations.

Another hurdle on the road to a fat piggy bank is that saving money requires an intertemporal choice—a trade-off between costs (e.g., foregoing current spending) and benefits (e.g., increased savings) that occur at different points in time. The problem with this is that immediate outcomes are more valued than delayed ones (Loewenstein & Elster, 1992). This **present bias** can result in a spend-now-and-save-later attitude, which surely will not fatten a piggy bank.

Definition Box

Present bias: The tendency to assign more value to payoffs (e.g., money or goo ds) that are closer to the present time when considering trade-offs between two future moments.

Not only are present outcomes given more weight than future ones; losses are also more heavily weighted than gains (Kahneman & Tversky, 1979). It is even estimated that the psychological pain of losses hurts roughly twice as much as gains yield pleasure (Kahneman, Knetch, & Thaler, 1991). Because "losses loom larger than gains," people often show **loss aversion**, and this places yet another hurdle on their road to the piggy bank. Once people get used to a particular level of disposable income, a gain in savings does not outweigh the loss in disposable income.

Definition Box

Loss aversion: People's tendency to prefer avoiding losses to acquiring equivalent gains.

Thus, when it comes to saving money, there is many a slip "twixt the cup and the lip." The optimism bias, self-control, the present bias, and loss aversion are all psychological hurdles that can withhold people from putting money aside in savings. On a positive note, however, these biases can also provide useful starting points for designing interventions that steer people in the right direction on the way to the piggy bank, as we have seen when discussing commitment devices. To illustrate this point further, we will next address a "modern classic" in behavioral interventions: the Save More Tomorrow™ program.

Box 13.2 Question for Elaboration

What are your personal reasons for not saving (more) and how do these reasons relate to the psychological hurdles described in this chapter?

A SMarT Intervention

The Save More Tomorrow™ (SMarT) program is an intervention designed by behavioral economists Richard Thaler and Shlomo Benartzi (2004)

to help those (US) employees who wish to save (more) money for retirement but lack the self-control to act on this desire. The essence of SMarT is that employees commit themselves in advance to allocating a portion of their future pay raise toward their retirement savings. The program has four core elements: (1) employees are approached about increasing their contribution to their retirement savings plans; (2) if employees join, their contribution is increased beginning with their first salary after a raise; (3) their contribution continues to increase on each scheduled raise until it reaches a preset maximum; and (4) employees can opt out of the plan at any time.

Results of the first three implementations of the program showed that, (1) 78% of the employees offered the plan joined, (2) 80% of those enrolled in the plan remained in it, and (3) the average saving rates for participating employees increased from 3.5% to 13.6% over the course of 40 months (Thaler & Benartzi, 2004). These findings clearly demonstrate that SMarT is highly effective in making saving for retirement more attractive and easier for employees who want to save more.

SMarT works so well because it is built in a way that bypasses several psychological hurdles while exploiting people's biases to create commitment to the plan. To illustrate, employees are asked to join the program well before a scheduled pay raise. This means that an increase in their contribution is not starting now but some considerable time in the future, which makes joining the program very attractive. Due to the optimism bias, employees are more optimistic about their ability to save in the future. In addition, employees are still able to enjoy the rewards of spending and discount the costs of saving (e.g., less consumption now) to the future. The program also mitigates perceiving a reduction in income due to saving as a loss in disposable income, because if employees join, their contribution to the retirement savings plan is increased beginning with their first pay check after their salary increased. By contributing a part of their pay raise, employees do not feel (as much) that they "lose" money when saving—actually, after each pay raise, they can spend more while also saving more. Furthermore, their contribution continues to increase on each scheduled pay raise until it reaches a preset maximum, a feature that makes employees' **status quo bias** work to keep them in the plan (Kahneman et al., 1991). Thus, by accounting for people's biased perceptions of their present and future financial situation, SMarT encourages employees to start saving (and keep saving) for their retirement.

Definition Box

Status quo bias: People's tendency, when choosing among alternatives, toward sticking with the status quo alternative—that is, doing nothing or stick with their current or previous decision.

Putting money aside in savings, however, is much harder when it entails making more active savings decisions rather than opting in or out of a retirement savings plan. After all, such decisions rely much more heavily on people's self-control capacity. In these situations, interventions targeting efficient goal progress monitoring might be particularly effective as they guide people in making the right behavioral adjustments at the right time. In what follows, we will describe one such intervention that was designed to aid Dutch households to increase their savings. Before we turn to the details of the intervention, we briefly discuss its theoretical basis.

Box 13.3 Question for Elaboration

If your friend wants to save more, what would you advise her?

Setting a Saving Goal: Let's Be More Specific

The road to a fat piggy bank is paved with good intentions. Many people want to save. Yet, their good intentions are often not followed up by the

necessary actions. The devil might also here be in the details. Research suggests that something may change for the better when a goal is formulated in specific terms (Locke & Latham, 1990; Oettingen, Pak, & Schnetter, 2001). A specific goal provides concrete guidelines for attaining the goal and therefore facilitates appropriate actions for successful goal attainment. Moreover, a specific goal can act as a schema for making the most use of the available information (Ashford & Cummings, 1983). Saving €15,000 for a new car provides a concrete standard against which the current state of affairs can be compared and on which appropriate follow-up actions can be planned. Without a specific goal, for example, when saving for a rainy day, it is hard to know exactly what to aim for, and clear action guidelines for goal attainment are lacking (Sheeran & Webb, 2011; Triandis, 1980).

Setting a specific goal, however, is by no means a guarantee that the set goal will be attained. Several scholars have pointed out that goal progress monitoring is an important aspect of successful goal attainment (e.g., Carver & Scheier, 1982; Locke & Latham, 1990, 2002; Powers, 1973). Attaining a goal requires, in addition to setting a specific goal and planning needed actions, noticing discrepancies between the goal and the current state of affairs and being able to "fix" discrepancies (see also Keller, Bieleke, & Gollwitzer, Chap. 2). Whereas setting a specific goal merely involves adopting a standard for performance, the real work is probably in monitoring goal progress—periodically evaluating progress in relation to the set standard and closing the gap accordingly. Without such progress monitoring, it becomes impossible to identify discrepancies and, for example, knowing when it is necessary to exercise (more) self-control. A recent meta-analysis showed that health interventions focusing on goal progress monitoring are effective in attaining a health goal (Harkin et al., 2016). In the context of saving, this would mean that monitoring progress toward a saving goal, for example, by checking a savings account regularly, might facilitate successfully attaining a saving goal.

Goal progress monitoring, however, is not always a pleasant activity. Progress can be slower than anticipated and this might hinder continuous and adequate monitoring. To prevent potentially disheartening feedback, people might want to "bury their heads in the sand" and avoid relevant information on their goal progress (Webb, Chang, & Benn, 2013). In the next section, we will describe a behavioral intervention that was designed, using a goal progress monitoring framework, to help people attain a specific saving goal (Van der Werf, Van Dijk, Van der Schors, Wilderjans, & Van Dillen, 2019).

An Intervention Based on Goal Progress Monitoring

When saving for a specific goal, goal progress monitoring can be done in at least two ways. First, monitoring can be done by people themselves, for example, by checking their bank accounts regularly and keeping good track of savings. In the current digital day and age, a quick glimpse on one's accounts should be sufficient to establish how much money has been saved already. As easy as this may sound, one still has to make an active decision to engage in monitoring progress toward a saving goal. Especially, when progress is expected to be less than hoped for, people might decide against it and avoid goal progress monitoring as a result.

A second way of goal progress monitoring—one that circumvents the hiatus described above—is "outsourcing" it to an external party. Banks or other financial organizations could help their customers by explicitly informing them of their progress toward a saving goal (e.g., via e-mail, SMS, or in-app messages).

To test whether such outsourcing is effective in helping people to attain their saving goal, we recruited participants via the website of the National Institute for Family Information (Nibud).[1] This resulted in over 400 people registering voluntarily for participation in the study.

[1]The National Institute of Family Finance Information (Nibud) is a well-known and respected independent foundation in the Netherlands and gives advice to households about all kinds of financial matters (www.nibud.nl).

Table 13.1 Messages in the feedback and extensive feedback condition

Feedback condition	Extensive feedback condition
Dear [name]	Dear [name]
You saved €[amount saved]	You saved €[amount saved], only
Your saving goal is €[saving goal]	€[discrepancy with saving goal] to go
Kind regards, Nibud	Your saving goal is €[saving goal]
	Kind regards, Nibud

Fig. 13.1 Illustration in the extensive feedback condition indicating a goal progress of 65%

Table 13.2 Percentage of goal attainment per period for the three conditions

Month Condition	July	August	September	October	November	February
Feedback	0%	−19%	−36%	−24%	−10%	+26%
Extensive feedback	0%	+19%	−18%	−9%	−21%	+43%
Control	0%	−16%	−43%	−20%	−15%	−23%

At the start of the study (July 2016), participants indicated their current savings and their saving goal for the period of the study (July–November 2016), and were randomly assigned to the reminder condition, the extensive feedback condition, or the control condition.

During the study, we assessed participants' progress toward their saving goal four times through online questionnaires (in August, September, October, and November 2016). In addition to these questionnaires, participants in the feedback condition received feedback via e-mail messages three times (in August, September, and October 2016) about the amount they had saved so far, and they were reminded about their saving goal. Participants in the extensive feedback condition received, in addition to this feedback, information about how much they still needed to save to attain their saving goal (see Table 13.1) and a visual illustration of their goal progress. Participants in the control condition did not receive any additional information via e-mail messages.

The goal progress illustration in the extensive feedback condition consisted of one row of ten "moneybags"—each representing 10% progress in attaining their saving goal—and participants' progress was made visual by the number of moneybags that were colored (see Fig. 13.1). We added this visual illustration for two reasons. First, we argued that it would help information processing and therefore facilitate goal progress monitoring better (Cheema & Bagchi, 2011). Second, we argued that dividing a larger end goal into smaller subgoals would result in the experience of short-term successes on the road to a (longer-term) end goal and this might increase motivation and self-efficacy (e.g., Locke & Latham, 2002; but see Cheema & Bagchi, 2011).

We expected that the intervention in both feedback conditions would facilitate goal progress monitoring and therefore would be effective in helping participants to attain their saving goal. Moreover, for the reasons explained above, we expected that the intervention in the extensive feedback condition would be most effective.

How did our participants do? And more important, was our intervention effective in helping them to attain their saving goal? Overall, participants did not seem to show progress toward their saving goal. After 5 months, they attained, on average, minus 15% (!) of their saving goal (see Table 13.2).[2] Yes, you read that correctly:

[2]Results showed that the mean of minus 15% had a standard deviation of 341%, indicating large individual differences in goal progress. Half of the participants had a goal progress of plus 50% or less.

on average, participants actually had less savings at the end of the study in comparison to the beginning of our study. One reason for this finding might be the time period in which the study was conducted. In May, many people in the Netherlands receive a holiday allowance (about 8% of their yearly income). Participants might have temporarily put aside this extra money in savings until they use it for their holiday expenses, usually in July or August. This might explain the decreases in savings we observed during these periods and, in our view, also illustrates the optimism bias. When setting their saving goal in July, participants most likely were aware of their upcoming holiday expenses, but they clearly underestimated how much they would spend in these periods.

More interesting, however, is whether our goal progress intervention was effective in increasing the progress. The results of our analyses,[3] however, did not show a statistically significant difference in goal progress between the three conditions, for the period July to November 2016. To examine whether the lack of statistically significant differences in goal progress between the three conditions could be due to the relatively short duration of our study, we decided to add an additional post-intervention assessment of goal progress. Three months after our initial study was completed, we invited those participants who filled out all five questionnaires during the intervention for a follow-up assessment, and 261 completed this in February 2017 (note that participants did not receive feedback via e-mail messages in the period from November to February). Our analyses of this 3 months' follow-up showed that participants in the extensive feedback condition had attained more of their initial saving goal than those in the control condition (see Table 1.2), a difference that was marginally statistically significant ($p = 0.058$). There was a similar pattern, although not statistically significant, for participants in the feedback condition.

In sum, testing our intervention based on goal progress monitoring did not yield clear evidence for its effectiveness in helping people to attain their saving goal. Although results of our study did not show a statistically significant short-term effect, we did find a marginal statistically significant effect of the extensive feedback condition on a longer term. In hindsight, we can only speculate why we obtained the results we did. A first reason why we found little or no differences between our three conditions might concern the participants included in the study. Remember that they voluntarily signed up for a study on saving. This might have led to a selection of participants who, at the start of the study, were already motivated to put money aside in savings. It could well be that our intervention has little added value for (more) motivated savers as they might already monitor their savings themselves. If our participants were already motivated to save, this did not increase their savings from July to November. Actually, on average, their savings decreased during this period. More research is needed to test whether our intervention is (more) effective when using other samples of participants and perhaps other periods of the year.

A second reason why the intervention was less effective than expected might be that participants in the control condition were also steered toward goal progress monitoring. Although these participants were not provided with additional information via e-mail messages, they did receive monthly questionnaires to indicate their savings. Hence, participants in the control condition were attending to their savings at least once a month, which might have already facilitated goal progress monitoring. This could have reduced the (intended) difference between the control and intervention conditions and makes it harder to detect the effectiveness of our intervention. Future research is needed to test this possibility. One possibility is to conduct an intervention study in collaboration with a bank or another organization that has

[3]We used multilevel modelling to examine the change in percentage of goal attainment over time. This technique can deal with the hierarchical nature of the data (i.e., measurements nested within participants). Condition and the interaction between condition and time were our independent variables. Age, gender, household income, and experienced financial scarcity were added to the model as covariates (results concerning these covariates are discussed in Van der Werf et al., 2019).

access to savings data, which makes it unnecessary to work with questionnaires.

The above two reasons shed some light on why the intervention was not effective during the first 5 months of the study. The findings, however, did suggest that, after 8 months, participants in the extensive feedback condition were more successful at attaining their saving goal. It should again be noted that this result only approached statistical significance and more research is needed to make a stronger argument, but it does raise the question why extensive feedback could be (more) effective on a longer term. Again, we can only speculate on the reasons why. One possibility is related to the goal gradient effect, that is, an increase in motivation to attain a goal when the goal nears completion (Hull, 1934). It could be that the visual illustration ("moneybags") of goal progress makes participants experience coming closer and closer to their saving goal, which might have increased their commitment to the goal and their motivation to attain it. Consequently, it could be that, when after 5 months the e-mail messages with explicit feedback on their goal progress stopped, they continued saving for a longer period than participants in the other two conditions. To test this possibility, more research is also needed.

Conclusion

Putting money aside in savings does not come easy for people. Next to overcoming the necessary financial constraints, it requires jumping several psychological hurdles, such as the optimism bias, self-control, the present bias, loss aversion, and goal progress monitoring, and therefore people could need some help on the road to the piggy bank. Behavioral interventions using insights from social psychology and behavioral economics can provide useful assistance in steering people into the right direction. The possibilities for assistance are many, and designing, testing, and, subsequently, implementing (effective) financial interventions will not only result in increased retirement savings or a €15,000 car but will also help people to become more financially resilient and self-reliant and thereby contributing to happier and more fulfilling lives.

Summary

- People often find it difficult to put money aside in savings. This is, at least partly, because they perceive their financial future too optimistically, lack sufficient self-control, overvalue immediate outcomes, and weigh losses more heavily than gains.
- In the USA, where saving for retirement is not obligatory, the Save More Tomorrow™ (SMarT) program is a highly effective intervention for increasing employees' contribution to their retirement savings plans.
- The crux of SMarT is that it bypasses several psychological hurdles (e.g., the optimism bias, self-control, and loss aversion) and exploits others (e.g., the status quo bias) in order to increase savings for retirement.
- Testing an intervention based on goal progress monitoring did not yield clear evidence for its effectiveness in helping people to attain their saving goal. The results of this study, however, hinted at the possibility of a longer-term effect. Until more research is conducted, the jury is still out.

Recommended Readings

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Guiding Answers to Questions in the Chapter

1. Q (With Box 13.1): Have you put aside sufficient money in savings?

   A: How much savings are sufficient is dependent upon your personal situation, and there are online tools available that will give you a personal advice (e.g., see the Money Advice Service's website). Nibud advises to hold also a financial buffer in your savings account to make sure that you can pay unexpected, larger, and necessary expenses directly without having to take out a loan of adjust your lifestyle. To start building a financial buffer, Nibud recommends to put aside, each month, 10% of your income in savings until you reach your advised buffer.

2. Q (With Box 13.2): What are your personal reasons for not saving (more) and how do these reasons relate to the psychological hurdles described in this chapter?

   A: Reasons such as "At the moment, I don't necessarily need savings" or "I'll save more when I'm older and earn more money" are related to the optimism bias. A reason such as "At the start of the month, I always want to save some money, but by the end I just spend it all" is related to self-control. Whereas reasons such as "I really need my money more now than in the future" or "It would mean missing out on a lot of fun things when I have to cut my spending in order to save" are related to the present bias and loss aversion.

3. Q (With Box 13.3): If your friend wants to save more, what would you advise her?

   A: There are a few "smart" ways of putting money aside in savings without feeling it so much directly. For example, transfer automatically, each month, a set amount to your savings account (via your online or mobile banking); transfer additional income (e.g., holiday allowance, 13th month salary, or a financial windfall) to your savings account before you spend (some of) it; save with a specific goal in mind; put (part of) your savings on an account that is not connected to mobile banking—this makes it more difficult to transfer money in your savings account (back) to your checking account.

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Social Media as Sources of Emotions

14

Sonja Utz

Contents

Introduction

If you are one of the 2.2 billion active Facebook users, you might regularly check your Facebook newsfeed. Intermixed with news or posts from celebrities and brands, you then see what your friends are up to: having fun at a party, going on a weekend trip, and posting a picture with their partner or a gorgeous-looking selfie. How do these messages affect you? Are you happy for your Facebook friends or do you experience envy? Taking these questions as a starting point, this chapter will summarize the literature on the impact of social media use on emotions and discuss (studies) on its implications for marketing.

Checking the latest updates on social media has become part of a daily routine for many people: Instagram reports 800 million monthly active users (Statista, 2018), and the Chinese platform Weibo reports 441 million users.[1] Many of these users check the platforms daily, and the updates on social media are mostly positive, cool, and entertaining (Barash, Duchenaut, Isaacs, & Bellotti, 2010; Utz, 2015). Researchers therefore have wondered how reading these positive updates affects the emotions of users (Krasnova, Wenninger, Widjaja, & Buxmann, 2013; Lin & Utz, 2015). The potential negative effects have

[1] https://expandedramblings.com/index.php/weibo-user-statistics/

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received a great deal of attention; reading posts on social media is assumed to reduce well-being because the posts elicit envy (Krasnova et al., 2013; Verduyn, Ybarra, Résibois, Jonides, & Kross, 2017). But emotions also influence consumer behavior. Most platforms are free for the users, but make money from advertising. Facebook alone made roughly 40 billion dollars from advertising in 2017.[2] Understanding how social media use influences emotions should thus also pay off for companies.

This chapter will review several social-psychological theories that help to explain how social media use influences emotions. It will also demonstrate the applied relevance of this knowledge by summarizing research showing how social media-triggered envy influences consumer behavior. The chapter starts with a discussion of social media and their affordances, before emotions are briefly defined. The effects of social media use on emotions are then discussed from two perspectives: first from the perspective of the person who shares the emotion and second from the perspective of the person who reads social media updates. In a final step, the influence of emotions on consumer behavior and implications for brands are discussed.

Social Media

The most popular forms are **social network sites** (SNS) such as Facebook, but also weblogs or microblogging services such as Twitter fall under this umbrella term. Social media are characterized by the user-generated content and the (semi-)public nature of conversations. Content can be produced by everyone by simply typing some text into a box when prompted to do so by questions such as "What's on your mind, <username>?". Photos can easily be added. Messages go usually to a large group of people. On Twitter, contributions are (by default) even visible for people without an account on the platform.

[2] https://www.investopedia.com/ask/answers/120114/how-does-facebook-fb-make-money.asp

Definition Box

Social Network Sites: "networked communication platforms in which participants (1) have uniquely identifiable profiles that consist of user-supplied content, content provided by other users, and/or system-provided data; (2) can publicly articulate connections that can be viewed and traversed by others; and (3) can consume, produce, and/or interact with streams of user-generated content provided by their connections on the site" (Ellison & Boyd, 2013, p. 157).

Social media platforms change frequently; some early SNS (e.g., Friendster, Hyves) do no longer exist. Moreover, the existing SNS change rapidly. To analyze and predict the effects of social media, it is therefore more helpful to look at the affordances (see Box 14.1) the SNS provide than to look at a specific feature or platform.

Box 14.1 Zooming In: Affordances

The concept of affordances was coined by Gibson (1977), a perception psychologist who studied animals and argued that objects afford certain uses to animals. A rock can be perceived as something to sit on, as building material, or as a weapon. Thus, how objects are used does not depend so much on their qualities (e.g., hard, sharp), but on the perceived affordances (to sit, to throw). People can differ in how they perceive the affordances of social media (e.g., visibility, persistence). Whereas one person might perceive the high visibility of content on social media as encouragement for an idealized self-presentation in front of a large audience, another person might be discouraged from posting publicly by the same affordance.

Visibility to a larger audience and persistence – the Internet never forgets – are affordances that characterize most social media. For people who are concerned about their privacy, these affordances are a reason for posting only few and/or not very personal status updates (Utz, 2015). For people scoring high on narcissism or need for popularity (Buffardi & Campbell, 2008; Utz, Tanis, & Vermeulen, 2012), the same affordances make social media an optimal platform for presenting themselves in an idealized way because they can easily reach a large audience. The affordance of editability allows them additionally to carefully curate their self-presentation (Hogan, 2010).

Thus, due to their specific affordances, social media are platforms on which people present the positive sides of their life. This holds even more for Instagram, a photo sharing platform on which the majority of photos depict beautiful happy people engaging in healthy activities (Deighton-Smith & Bell, 2017). Moreover, these overly positive self-presentations are pushed into a user's feed thus increasing exposure to positive messages. The question is therefore which emotional responses posting or reading these overwhelmingly positive posts elicits. Before we discuss these questions, a short introduction into emotions is given.

Emotions

One issue of research on emotions is that there are many definitions and theories of emotion (Scherer, 2005). Early theories (e.g., James, 1884) considered the physiological reactions (e.g., crying, trembling) as the basis of an emotion. According to this view, people feel sad because they cry. **Appraisal** theories, in contrast, assume that the evaluation and interpretation of situations play a central role in the experience of emotions (Arnold, 1960; Lazarus, 1991).

Definition Box

Appraisal: Appraisals are the evaluations of events in the environment. Emotions are not simply determined by physiological arousal, but by the interpretation of the situation.

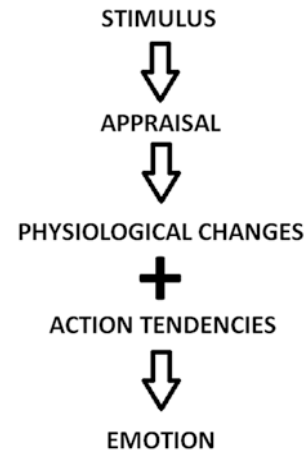

Fig. 14.1 Arnold's appraisal theory of emotion

The first appraisal theory stems from Arnold (1960) (see Fig. 14.1). When a specific situation occurs, people appraise its consequences for themselves (good/bad) which then leads to an emotion and an action. For example, being left by your partner would be appraised first as bad and then trigger the emotion sadness and physiological reactions such as crying and actions such as withdrawal.

Lazarus (1991) developed this model further and distinguished between primary appraisals, which influence the evaluation of an event, and secondary appraisals, which influence the evaluation of potential actions. Primary appraisals deal with the question whether the event is in conflict (negative emotion) or in accordance (positive emotion) with an individual's goals, as well as the relevance and ego relation of this goal. For example, when you are in a restaurant and the waiter doesn't serve you, it might depend on whether you are very hungry (in conflict with goal) or mainly there to socialize with friends (no conflict) whether you experience anger. Secondary appraisals address the question of blame or how the individual can deal with the situation. Is the restaurant simply very crowded or do you think the waiter ignores you on purpose? Do you think you can change something about the situation? This would determine how you deal with the situation – whether you would wait, yell at the waiter, or write a negative review about the restaurant.

The next section will discuss how sharing experiences on social media affects the emotions of the persons who post on social media.

Capitalization

Capitalization describes the process of sharing positive events with (close) others (Gable & Reis, 2010). People are in general more likely to share positive (vs. negative) news with close others – not only because positive events are more prevalent (Gable & Haidt, 2005) but also because of the intrapersonal and interpersonal benefits of sharing positive emotions (Gable & Reis, 2010).

Definition Box

Capitalization: The sharing of positive events with (close) others

Two intrapersonal and one interpersonal mechanism have been identified (see Gable & Reis, 2010, for a review): first, sharing positive experiences intensifies the salience and memorability of positive events, which is desirable in itself. Second, sharing requires a reflection process which helps people to find meaning in the event, which further increases positive emotions. Third, the positive reactions of (close) others strengthen the relationship, which also triggers positive emotions.

Capitalization studies usually did not (explicitly) take the medium into account, but due to the large proportion of positive updates on social media (Barash et al., 2010; Utz, 2015), the capitalization framework is well suited for this context. On social media, posts are often shared with a larger group. Addressing a larger group might increase the appraisal that the event is important. Carefully editing the post might foster the reflection process.

Choi and Toma (2014) examined the effects of sharing emotions across a number of media channels, including social media. They conducted a daily diary study in which participants indicated either for the most important positive or the most important negative event of the day on which channel(s) they have shared it. Positive and negative affect after sharing was measured as well. The effects of sharing were identical across channels: people experienced more positive affect after sharing positive events and more negative affect after sharing negative events. The finding that there are no differences between the channels contradicts the idea that sharing (semi-) publicly on social media further increases the salience of the experience and fosters the reflection process.

Sharing with many others on social media might have interpersonal effects. Scissors, Burke, and Wengrovitz (2016) looked at the role of likes received and found that the number of likes was less important than from whom people received likes. The majority expected likes from close friends or their partner, indicating that the relationship strengthening effect of capitalization occurs mainly with close others.

Taken together, these studies show that capitalization processes also occur on social media. Sharing positive news with friends strengthens positive emotions. However, close friends still matter most for the intensification of positive emotions. For the person who shares experiences on social media, the intrapersonal and interpersonal benefits seem to be the same as for sharing face-to-face or on traditional media. How about the person who reads these social media posts?

Emotional Contagion

One possible explanation how posts on social media could influence emotions is emotional contagion (Hatfield, Walster, & Berscheid, 1978). Emotional contagion means that people take over the emotions displayed by others, especially by close others. This can happen without conscious awareness by automatically mimicking others, thus not necessarily requiring appraisals (Hatfield, Cacioppo, & Rapson, 1993). Emotional contagion has also been shown in computer-mediated communication. Hancock, Gee, Ciaccio, and Lin (2008) induced negative mood in one group of chat participants and observed that they used

fewer and sadder words and that this pattern and the corresponding negative affect were picked up by chat interaction partners.

The Field Approach

Studying emotional contagion on social media is not easy because naturally occurring emotions are difficult to detect and lab experiments are often artificial. Kramer, Guillory, and Hancock (2014) cooperated with Facebook and conducted a massive field experiment in which they manipulated the newsfeed of roughly 700,000 Facebook users. They created four conditions: in one group, each post containing negative words such as "sad" was removed with a likelihood between 10% and 90%; in another group, the same percentage of posts containing positive words was removed. In the two control groups, the identical percentage of posts was blocked, but at random. This was done to compare the effect of reduction in information with reduction in positivity or negativity. Subsequently, Kramer et al. (2014) tracked the posts from the users and analyzed the number of positive and negative words. They found a significant increase of positive words and a decrease in negative words (compared to the control condition) in the negativity-reduced group and the reverse pattern in the positivity-reduced group and took this as evidence for emotional contagion. Although significant through the large sample, the effect was however very small; only 0.1% of the subsequent posts changed.

This experiment has been heavily criticized (see Panger (2016) for an excellent review; the following sections are a summary of his analysis). Most criticism has addressed ethical concerns: the participants did not know that they were part of an experiment and never gave their informed consent; the study did also not undergo a review process by an ethics committee. More relevant for the question which emotions are triggered by social media use are the methodological concerns.

First, there are problems with the internal validity of the study. Removing positive posts not only reduces the proportion of positive posts but also increases the proportion of negative posts. It is thus difficult to say whether the observed effects are due to reduced positivity or increased negativity.

A second criticism is the measure of emotions. LIWC, the Linguistic Inquiry and Word Count (Pennebaker, Francis, & Booth, 2007), was used for inferring the emotions. LIWC is a computer program that can calculate the percentage of words that correspond to certain emotions from a pre-defined dictionary. Although LIWC is in general a well-recognized tool, it is less clear how well it can deal with short social media posts. Tools such as SentiStrength (http://sentistrength.wlv.ac.uk/) that were specifically developed for the analysis of sentiment in short social media posts reveal better results than the more general LIWC (Buttliere, 2017).

Moreover, it has not been controlled whether people first posted what they had experienced and then read their newsfeed or whether they first read their newsfeed and then posted. Emotional contagion effects can only occur if people first read what their Facebook friends have written. Thus, the limited internal validity reduces the contribution of this field study, although it has a high external validity that is due to the natural setting.

The Survey Approach

Lin and Utz (2015) used alternative methods to examine emotional contagion on social media. In a first exploratory survey, they asked participants to log into Facebook and to answer a series of questions on the four most recent status updates in their newsfeed. Among others, participants indicated how negative vs. positive the content of the post was and which emotions it elicited. One goal of this survey was to get information on the prevalence of positive and negative emotions. The second goal was to explore the relationship with tie strength, i.e., relational closeness (see Fig. 14.2 for the research model). Similar to capitalization research, it was expected that emotional contagion effects are stronger with increasing closeness (i.e., tie strength).

With regard to the first goal, getting information on the prevalence of emotions, the results

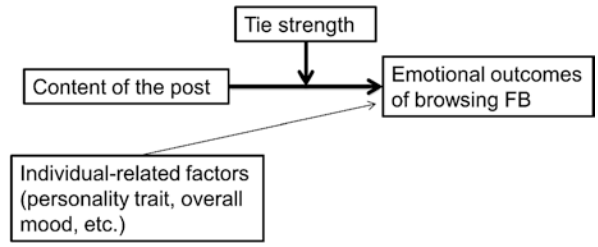

Fig. 14.2 Research model by Lin and Utz (2015, p. 31)

showed that positive emotions prevailed. From the 598 status updates that did not stem from Facebook pages or celebrities (provided by 207 participants), 64% elicited happiness, whereas only 12.4% elicited envy and 11% jealousy. With regard to the second goal, a significant interaction between tie strength and positivity of the posts occurred for happiness. The more positive the update, the happier was the reader. This effect was stronger for closer relationships. That is, participants reacted more extremely with the corresponding emotion to positive and negative posts from close friends than from acquaintances. Appraisals have not been measured in this study, but one can assume that people appraised positive events in the life of their friends also as positive for themselves.

Thus, this pattern supports the predictions from emotional contagion research. A methodological limitation is that it was impossible to hold the content of the posts from close friends and acquaintances constant in a survey; it could be that the Facebook algorithm selects different types of posts for different Facebook friends and that it is the content of the post that drives happiness.

The Experimental Approach

To overcome this limitation, Lin and Utz (2015) conducted an experiment in which all participants were exposed to the same vacation picture (see Fig. 14.3). Tie strength was manipulated by letting people think either of a close friend, a friend, or an acquaintance on Facebook. Participants filled in some filler questions about the target and the friendship history to make the relationship more salient. Next, they were instructed to imagine that this Facebook friend had posted the vacation picture and to indicate their emotions.

As can be seen in Fig. 14.4 (columns for happiness), the experiment revealed the same pattern as the survey: the happy vacation picture induced happiness in the readers, and it did so even more when the photo was supposedly posted by a close friend. A limitation is that the situation was rather artificial; some participants might have thought about a friend who would never go on a hiking vacation, reducing the credibility of the manipulation.

Nevertheless, across three different methods (a massive field experiment, a survey, an experiment), the same pattern emerged: people experience happiness when reading positive posts of (close) others. There is thus support for emotional contagion on social media. Nevertheless, there were also incidents of negative emotions (envy, jealousy) as reaction to positive posts that cannot be explained by emotional contagion. We therefore turn to social comparison theory in the next section.

Box 14.2 Question for Elaboration

A joy shared is a joy doubled, a trouble shared is a trouble halved. Does this proverb also hold for sharing joys and troubles on social media?

Social Comparison Theory

Social media provide people with information about others: to which bars they go, what clothes they wear, or where they spend their vacations. When reading such information,

Fig. 14.3 Emotion-evoking picture used as stimulus material in Lin and Utz (2015)

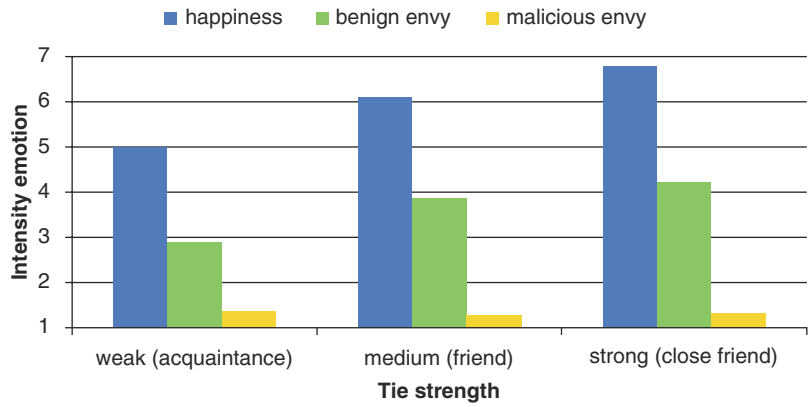

Fig. 14.4 The effects of tie strength on emotions (Lin & Utz, 2015)

people usually compare themselves with these others. This so-called social comparison is a fundamental process (Festinger, 1954). The results of social comparisons have also been linked to emotions since they influence appraisals. Smith (2000) summarized the different possible reactions (see Fig. 14.5).

The first distinction we can identify in Fig. 14.5 is the comparison direction, being either upward or downward. Upward comparisons occur when the comparison target performs better or is richer or more attractive than oneself; downward comparisons occur when the comparison target performs worse and is poorer or less attractive than

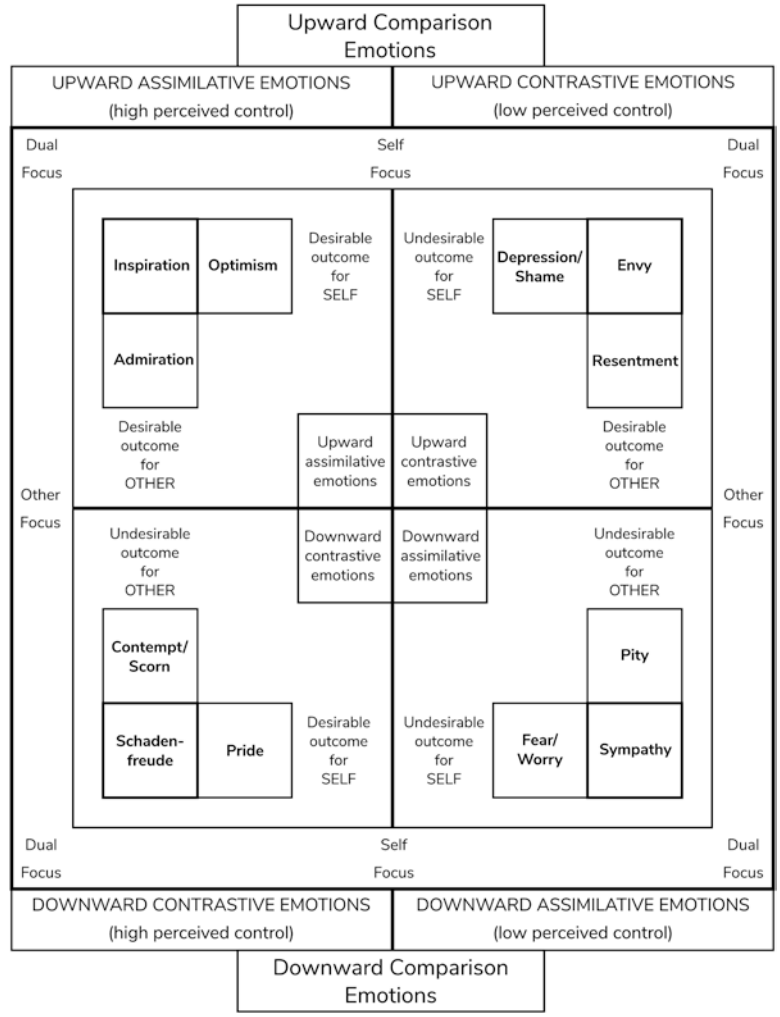

Fig. 14.5 Social comparison-based emotions (Smith, 2000, p. 176)

oneself. A recent meta-analysis (Gerber, Wheeler, & Suls, 2018) showed that contrastive emotions are the dominant reaction (e.g., envy if another person is performing better and schadenfreude if another person is performing worse), but both, positive and negative emotions, have been found for both comparison directions (Buunk, Collins, Taylor, VanYperen, & Dakof, 1990). Appraisals based on the other two dimensions are important to determine the triggered emotion: the focus, which can be primarily on the self, the other, or on both interaction partners, and the desirability of the outcome for the self and the other person.

For example, when a competing candidate gets the job you applied for (an undesirable outcome for the self), the emotion depends on whether the focus of your appraisals about the situation is purely on what the other has, on what you don't have, or on both. When you focus only on yourself, i.e., your poor performance in the job interview, you might experience shame. An exclusive focus on the other results in resentment. When you focus on what the other has but also on what you lack (dual focus), envy is likely. Envy is a negative emotion that "arises when another person lacks another's superior quality, achievement or possession and either desires it or wishes that the other lacked it" (Parrott & Smith, 1993, p. 908).

When it comes to social comparison processes on social media, the majority of studies have focused on envy (see Appel, Gerlach, & Crusius, 2016, for a review). Recently, research started to go beyond Smith (2000) by distinguishing between benign envy and malicious envy (Van de Ven,

Zeelenberg, & Pieters, 2009). Benign envy is defined as a levelling-up motivation; the focus is on the envied object or state, and benign envy motivates people to work harder toward reaching the envied object or state (van de Ven, Zeelenberg, & Pieters, 2011). Malicious envy in contrast is a levelling-down motivation; the focus is on the envied person, and it is characterized by wishing ill to the envied person.

Box 14.3 Zooming In: Benign Versus Malicious Envy

Although envy usually has a negative connotation, it can also have a motivating role, and researchers started therefore to focus on the antecedents and consequences of benign vs. malicious envy. The appraisal of deservedness is important: malicious envy is more likely to occur when the advantage of the envied person is perceived as undeserved; benign envy is more likely when the advantage of the other is perceived as deserved and the situation as controllable (the individual can reach the same object/state). Malicious envy is more similar to envy in the Smith (2000) model, whereas benign envy has similarity with inspiration in the upward assimilative emotions quadrant.

In the experiment described above by Lin and Utz (2015), benign and malicious envy were measured as well. The holiday can be perceived as a desirable outcome for the other, and – at least at the moment – undesirable for oneself, and might thus trigger (malicious) envy. When the holiday is perceived as a desirable and reachable goal for oneself, the post should elicit benign envy, even more so for close friends because these are usually more similar and therefore more relevant comparison targets. In line with the latter argument, participants reported higher levels of benign envy for posts from (close) friends than for posts from weak acquaintances (Fig. 14.4). Levels of malicious envy were very low, probably because holidays are not perceived as underserved, an important appraisal for malicious envy.

De Vries, Möller, Wieringa, Eigenraam, and Hamelink (2018) proposed an approach how the often-contradicting predictions from emotional contagion and social comparison theory can be brought together. They suggested that social comparison orientation, the chronic tendency of people to compare themselves with others (Gibbons & Buunk, 1999), determines whether people are happy when their social media friends are happy or whether they experience envy. Participants were either exposed to positive or neutral Instagram posts. Social comparison orientation was measured. For people high in social comparison orientation, the contrastive pattern predicted by the social comparison perspective was found: participants showed lower levels of positive affect when exposed to positive posts. People low in social comparison orientation showed the opposite pattern: in line with the emotional contagion perspective, they showed higher positive affect when exposed to positive posts (vs. neutral posts). Social comparison orientation is thus a moderator that can explain which of the two opposing theories applies for a specific individual – those low in social comparison orientation seem to share the emotions displayed on social media, whereas those high in social comparison orientation rather show contrasting emotions.

Taking into Account the Affordances of Social Media

The studies reported so far used existing social-psychological theories and argued that they also hold on social media, without taking the affordances of social media discussed in the beginning of this chapter into account. Affordances have been taken into account in research on jealousy evoked by social media posts. Jealousy is the "negative response to the actual, imagined or expected emotional or sexual involvement of the partner with someone else" (Buunk, 1997, p. 998). Especially anxious jealousy, i.e., ruminating about potential actions

of the partner, is negatively related to relationship quality (Barelds & Barelds-Dijkstra, 2007).

When it comes to jealousy triggered by social media, Muise, Christofides, and Desmarais (2009) argued that Facebook makes more information about the partner and his/her interactions with potential rivals – comments, likes, or pictures – visible than ever before. This visibility and public display can also influence the appraisals of threat. Muise et al. (2009) therefore argued that Facebook use could increase jealousy. They measured Facebook elicited jealousy by a scale that asked for the likelihood to experience jealousy in ambivalent situations such as "after seeing that your partner has received a wall message from someone of the opposite sex" and not in actual transgressions (see Table 14.1, left column). This scale thus covers mainly anxious jealousy. They also assessed people's general disposition to react jealously. Although this disposition predicted the largest part of the variance in online jealousy, time spent on Facebook explained an additional part of variance.

Utz and Beukeboom (2011) built on this work and proposed need for popularity as an additional predictor of jealousy experienced on SNS. They argued that especially people with a high need for popularity are attracted by social media because their affordances allow them to present an idealized version of their self to impress a large audience. When the partner endangers the picture of a happy relationship, for example, by exchanging flirtatious comments with an attractive person, the (semi-)public display of this action at least within the group of close peers might influence the appraisal of severity of the threat to the relationship and thereby increase the feeling of jealousy. Research on offline jealousy has found that public self-threats are perceived as more severe (Afifi, Falato, & Weiner, 2001).

Utz and Beukeboom (2011) aimed to get a more comprehensive picture and argued that in a similar vein public displays of affection by the partner might increase happiness with the relationship because these could be appraised as a sign of commitment. SNS happiness was measured by mirroring the SNS jealousy items (see Table 14.1, right column). The results showed that people in general expressed higher levels of SNS happiness than SNS jealousy. Need for popularity was related to SNS jealousy, especially among low self-esteem individuals, indicating that the affordances of social media are interpreted differently by people with low vs. high need for popularity or self-esteem.

The relationship between need for popularity and social media jealousy was replicated in another study that compared jealousy on Facebook and Snapchat (Utz, Muscanell, & Khalid, 2015). In contrast to other social media, messages on snapchat are not persistent, but disappear after several seconds. Again, this affordance can influence the appraisal of acts such as communicating with an ex-partner. People might become more suspicious when the partner uses Snapchat and assume that the flirt must be serious if a secret communication channel is chosen. In line with these predictions, Snapchat jealousy was higher than Facebook jealousy.

Table 14.1 Example items from the SNS jealousy scale (Muise et al., 2009) and the SNS happiness scale (Utz & Beukeboom, 2011)

SNS jealousy	SNS happiness
How likely are you to …	
…be upset if your partner does not post an accurate relationship status on the SNS.	…become happy if your partner posted an accurate relationship status.
…become jealous after seeing that your partner has posted a message on the wall of someone of the opposite sex.	…become happy if your partner posted a message to your wall referring to your relationship.
…experience jealousy if your partner posts pictures of him or herself with an arm around a member of the opposite sex.	…become happy if your partner post pictures of him or herself with an arm around you.

Box 14.4 Questions for Elaboration

What advice would you give platform providers to increase the well-being of their users? What can teachers or parents do to reduce the risk that their children experience negative emotions after using social media?

Facebook and Envy: Application to Consumer Behavior

Why is knowledge about the emotions triggered by social media use so important? First, emotions influence well-being, and it has often been argued that reading social media posts leads to envy which in turn leads to lowered well-being (Verduyn et al., 2017). Second, emotions also influence consumer behavior. The business model of most social media platforms is making money from selling advertisements. For brands, it is thus important to know how purchase intentions of customers could be influenced. The default approach is often to target ads to specific groups (e.g., females aged 21–25 interested in beauty and fashion). A smarter way could be to use posts from social media friends as triggers for ads.

Research on benign vs. malicious envy has found that benign envy motivates people to buy the same product as the envied person has, whereas malicious envy motivates people to buy a different and even superior product to distance themselves from the envied target (Van de Ven, Zeelenberg, & Pieters, 2010). Lin (2018) examined whether this also applies on social media. She distinguished between experiential and material purchases (Van Boven & Gilovich, 2003). Material purchases (e.g., an expensive watch, jewelry, a car) are bought "to have," whereas experiential purchases (e.g., a weekend trip) are bought "to be." Lin (2018) argued that experiential purchases might trigger more benign envy because they are often appraised as self-relevant and trigger liking of the other person.

To examine how envy triggered by social media use influences consumer behavior, Lin conducted a survey among 200 active social media users (100 females; mean age = 35). The majority of respondents (n = 136) had already purchased something after browsing social media; most of them had done so several times. Purchasing behavior was more frequently triggered by posts from friends (58) than by posts from brands or ads (31). In the remaining cases, the triggers could not be clearly identified. These descriptive data already suggest that social media posts influence consumer behavior.

Participants read a definition of experiential vs. material products and were asked how often they encounter posts about these two types of purchases in their timeline. On average, they saw posts about experiential purchases several times a week and posts about material purchases between once and several times a week.

Next, they were asked to recall a situation in which they experienced envy after being exposed to such a post. The vast majority (n = 185) was able to recall such a situation, indicating that envy about the purchases and experiences of others is a common experience. Most purchases (120) were experiential in nature, predominantly vacations, restaurant visits, or similar events. Posts about material purchases (48) were on cameras, laptops, cars, or houses.

The type of experienced envy (benign vs. malicious) was measured with the scale by Crusius and Lange (2014). A sample item for benign envy is "I felt inspired to also attain X" (X stands for the product/experience mentioned by the participant); a sample item for malicious envy is "I wished that the person would fail at something." The central dependent variables were the purchase intention for the same and the purchase intention for a superior product (e.g., "It is very likely that I will buy the same X/a similar but superior product/service").

People experienced more benign envy than malicious envy. Interestingly and in contrast to the hypothesis, there was no relationship between post type (experiential vs. material) and type of envy. Exploratory analysis showed that malicious envy was higher when the self-relevance of the purchase was high. The pattern for appraisals was however as expected: when participants felt that the person who has posted the purchase or experience had not deserved the purchase, just wanted to show off, was disliked but also similar to the participants, malicious envy was higher. Most important, in line with the hypotheses, benign envy was positively correlated with purchase intentions for the same product, whereas malicious envy was related to purchase intention for a superior product.

A limitation of the self-report study is that people mentioned more experiential than material

purchases, resulting in reduced power to find effects for material purchases. The purchases also varied widely in price, desirability, and many other factors. To get more equal sample sizes, in a second study, participants were asked to either remember a post about an experiential purchase or a post about a material purchase. To control for the different types of purchases, a third study was conducted in which the same product, a MacBook Pro, was framed either in experiential or material terms. The post in the experiential condition read "My new Macbook Pro makes me enjoy my work! #ExploreAndDiscover #DoMore," whereas the post in the material condition read "My new Macbook Pro looks just awesome! #ExpensiveBuy #MustHave." The main finding that benign envy predicts purchase intentions for buying the same product and malicious envy triggers purchase intentions for buying an even superior product was replicated in both studies.

Taken together, across three studies using different methods, Lin (2018) showed that people experience more benign than malicious envy when exposed to social media posts about experiential or material purchases. The more participants experienced benign envy, the higher also was their intention to purchase the same product. Malicious envy, in contrast, was triggered by the perceived intention to show off and lead to the desire to purchase a superior product.

These results can directly be translated into advice for brands. Instead of showing ads to target user groups based on demographics and interests, brands should (also) post ads next to relevant posts. This could be especially interesting for travel agencies but also for fashion manufacturers or tech companies. Social media platforms would need to adapt their targeting services and offer targeted marketing based on relevance of users' posts. Users often provide information about their location by using check-ins or hashtags in their posts, making it easy to find the appropriate posts for restaurants, bars, or hotels. Algorithms are also getting better and better in analyzing pictures. Although malicious envy is unlikely to occur, searching for hashtags that refer to showing off (see, e.g., #richkidsofinstagram) could be an indicator of potential malicious envy. This would be the place for luxury brands to advertise their superior products.

To conclude, this chapter has shown that posts on social media trigger emotions in both the people who post them and the people who read them. Being able to predict the emotions experienced by social media users also helps brands because emotions experience consumer behavior.

Summary

- Sharing positive emotions on social media further intensifies positive emotions, a process known as capitalization.
- Posts from close friends usually result in emotional contagion: people feel good when their friends feel good.
- Positive posts on social media can trigger social comparison processes and (benign) envy.
- The affordances of social media, especially visibility, can intensify jealousy.
- Social comparison orientation and self-esteem moderate these effects: people with low social comparison orientation/high self-esteem experience positive emotions when exposed to positive posts from friends, whereas people with high social comparison orientation/low self-esteem experience envy.
- Envy also influences consumer behavior; benign envy increases the intention to buy the same product the envied person has.

Recommended Reading

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Guiding Answers to Questions in the Chapter

1. Q (With Box 14.2) A joy shared is a joy doubled, a trouble shared is a trouble halved. Does this proverb also hold for sharing joys and troubles on social media?

   A: The first part of this proverb corresponds to capitalization. Sharing a joy with close others intensifies the joy, and this has also been found for social media posts. Research on emotional contagion showed that readers also become happy when their friends share positive experiences. Findings on sharing troubles have been less unequivocal; sharing troubles might – at least in the short run – intensify negative emotions.

2. Q (With Box 14.4) What advice would you give platform providers to increase the well-being of their users?

   A: Platform providers could mainly display the positive posts from close friends. Closeness can be inferred automatically from frequency of private messages, being tagged on the same photo, and mutual likes. Posts with hashtags that are likely to trigger malicious envy (e.g., #richkids) could be displayed less prominently in the newsfeed.

3. Q (With Box 14.4) What can teachers or parents do to reduce the risk that their children experience negative emotions after using social media?

   A: Teachers and parents could train the media literacy of children/adolescents by making them aware that people present themselves in an idealized way on social media. They could teach them to use social media actively for relationship maintenance, instead of mainly passively browsing. Strengthening the self-esteem provides them also with a buffer against negative effects of social media posts.

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Intergroup Forgiveness: The Interplay Between Who We Are and What Tales We Tell

15

Iwan Dinnick and Masi Noor

Contents

Introduction

There is no doubt that we live in a vengeful world. But that is not the full story. If, following a hurt, vengefulness were the only force to govern our social relations, how could this account for Gill Hicks, who lost both her legs due to standing next to one of the London tube suicide bombers in 2005 yet lives without hatred and refuses to seek revenge; or how come that Bassam Aramin chooses dialogue and non-violence as the main means to resolve the Israeli-Palestinian conflict, despite an Israeli soldier shooting and killing Bassam's 10-year-old daughter outside her school; and how come that on hearing the tragic news of her 28-year-old son, an Israeli soldier, being shot dead by a Palestinian sniper, the first words that came out of Robi Damelin's mouth were: 'Do not take revenge in the name of my son'? While maybe absent from the news headlines, there are many more such individuals, like Gill, Bassam, and Robi, around the world. You can find out about their real-life stories in the work of the London-based charity *The Forgiveness Project* (www.theforgiveness-project.com, see also www.theforgivenesstool-box.com), whose aim is to collect and document the lived experiences of ordinary people who have managed to overcome their hatred and resentment towards their perpetrators and to develop working relationships or even profound friendships with their former perpetrators.

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What is noteworthy is that the individuals responsible for the above atrocities neither knew their victims personally nor had any prior direct interactions with them. What gave rise to these atrocities was the fact that the aggressors saw their unknown victims as representatives of particular groups with whom the aggressors had fundamental disagreements. It is probably a safe bet to assume that part of the motivation that leads individuals to harm others is to do with the aggressors themselves feeling aggrieved and victimised. Thus, correcting the wrongs victims may have experienced directly or vicariously (i.e. seeing their fellow ingroup members being harmed) can rather ironically cause previous victims to become future victimisers and feed the endless cycles of revenge. Can forgiveness disrupt such destructive cycles?

Although forgiveness has mainly been discussed and practised in the realm of interpersonal relationships, in this chapter, we focus on forgiveness and its utility for repairing damaged intergroup relationships. Specifically, we will analyse intergroup forgiveness through the lens of traditional and recent theoretical frameworks, such as the social identity approach and victim beliefs, while attempting to formalise the interplay between such theorising and their implications for societies emerging from ethnopolitical violence. We will conclude by highlighting how forgiveness can transform fractured intergroup relations into peaceful co-existence at a practical level.

Collective Suffering: Hurting Me Versus Hurting Us

Naturally, being hurt means being robbed of control over one's life. Indeed, following a hurt, what may attract millions of people to revenge is the desire to restore their diminished sense of control. But is revenge the only path to restoring control? And can forgiveness provide an alternative and less explored route to such control restoration? Before discussing the concept of intergroup forgiveness, it is important to understand what constitutes collective suffering.

Definition Box

Collective Suffering: (also referred to as *collective victimisation*) This results from collective victimization which involves the objective infliction of harm by one group against another. The psychological experience and consequences (e.g., affect, cognitions, and behaviors) of such harm is referred to as collective victimhood (WHO, 2002, p. 215; see also Noor, Vollhardt, Mari, & Nadler, 2017; Vollhardt, 2012)

Experiences of suffering are heightened to the collective level because of the clashing group memberships with which the harmdoer and his/her victim identify. As detailed by Scheepers and Ellemers in this volume (Chap. 9; see also Tajfel & Turner, 1979), people divide the social world into social categories, such as religious beliefs, political or sexual orientation, race, etc. Individuals form groups on the basis of these categories and identify with them because such categories can help us understand who we are and because these categories enable us to coact with others, invoke solidarity, and provide us with protection against different types of threats. Thus, a key defining feature of collective suffering is that the motivation to harm others was driven by the perpetrator's group membership and his/her choice of victim was equally determined by the victim's particular group membership (Noor et al., 2017).

Another feature of **collective suffering** is that it can affect the target group across several dimensions, including the physical dimension (e.g. physical well-being, quality of life, physical injuries, deaths), the material dimension (e.g. destruction or loss of property, ability to build wealth), and the cultural dimension (e.g. threat to one's worldview, cultural continuity, norms, language), and each of the forgoing dimensions, by themselves or combined, can lead to the psychological dimension of suffering (e.g. trauma or distress)

(see Noor, Shnabel, Halabi, & Nadler, 2012; Noor et al., 2017, for reviews).

The plethora of ways in which one group can harm another gives rise to the third feature of collective suffering, namely, the impact of the suffering extends to group members who did not experience the harmdoing directly. In fact, the more group members identify with the group, the more they feel the impact of the harm vicariously, even though they may have been in different geographical locations from the direct ingroup victims or born several decades after the harmdoing (e.g. Lickel, Miller, Stenstrom, Denson, & Schmader, 2006; Noor, Brown, Gonzalez, Manzi, & Lewis, 2008; Wohl & Branscombe, 2008; Wohl & van Bavel, 2011). To illustrate, research investigating how the traumatic consequences of collective victimisation resulting from the Jewish Holocaust get transmitted across generations found that there was a positive correlation between the Holocaust descendants' degree of Jewish identification and symptoms of post-traumatic stress disorder. This correlation was negative for non-Holocaust descendants (Wohl & van Bavel, 2011). That said, an important caveat must be highlighted here. Identification with a victimised group can also serve as a buffer against poor psychological well-being. Supporting evidence for this claim has been provided by studies examining the association between pervasive discrimination of target groups (e.g. Black Americans, Latino/Americans, the elderly) and their psychological well-being (Branscombe, Schmitt, & Harvey, 1999; Cronin, Levin, Branscombe, van Laar, & Tropp, 2012; Garstka, Schmitt, Branscombe, & Hummert, 2004). Interestingly, these studies demonstrated that ingroup identification with the target groups suppressed the association between discrimination and poor well-being. This suggests that identification with a victimised group need not always foretell negative outcomes for the group members.

So far, we have explored how groups vested in their social identities may be motivated to harm one another, across multiple dimensions, and how readily the suffering can spread to other ingroup members who did not experience the harmdoing directly. Although understanding collective suffering through the lens of the social identity approach offers important analytical insights into why some conflicts persist, in the next section, we complement these insights by drawing attention to the recent theorising about **victim beliefs** – the stories groups tell about their suffering – and consider their impact in terms of intensifying or reducing conflict.

Definition Box

Victim Beliefs: Subjective interpretations of a group's victimisation (Vollhardt, 2012)

Victim Beliefs: The Stories We Tell about Our Suffering

Stories are powerful, especially if they are stories about the collective suffering of one's own group. Such stories enable people to make meaning of what happened, remind future generations of the ingroup's victimisation, and instil a powerful sense of common fate and solidarity with their fellow ingroup members. Consequently, the stories of a group's collective suffering are representational and can shape the group's identity in general. What is intriguing is that people can tell very different stories about the same experience. In other words, people can construe the same victimhood event very differently, which in turn can have a differential impact on people's understanding of their collective suffering and who they are as a group, but also on how they relate to other groups. Recent theorising has reasoned that the way a group's narrative of their suffering is construed is partly determined by their victim beliefs (Noor et al., 2012; Vollhardt, 2012, 2015; see also Noor et al., 2017).

Box 15.1 Zooming In: Whose Story Counts?

As you can imagine, one controversy around victim beliefs is about which group's story is believed or perceived as true. This is in part due to the subjective nature of victim beliefs, which are asserted by one group and challenged by their adversarial group. As a result, many historical narratives about a collective victimisation remain contested (Vollhardt, 2012) (e.g. Palestinian vs. Israeli stories of suffering, Hammack, 2009). Note also that both disadvantaged groups and the advantaged groups (e.g. Black as well as White Americans) can develop victim beliefs. Crucially, another consequence of victim beliefs is that sometimes objectively true victimisation of one group may be suppressed or ignored (e.g. the Genocide of Herero and Nama in Namibia by Germany in the nineteenth century, Onishi, 2016), while at other times false victim beliefs of another group may be fabricated (e.g. Nazis' perceived victimisation, Herf, 2006).

Comparative Victim Beliefs

One central set of victim beliefs are the comparative victim beliefs. Such beliefs orient groups to think about their suffering by comparing it to other groups' suffering. Unfortunately, given groups are prone to compete with one other, especially over as sensitive a topic as their suffering (Noor et al., 2012), such a comparative belief has been observed to give rise to groups engaging in the phenomenon of **intergroup competitive victimhood**.

Definition Box

Intergroup competitive victimhood: Refers to the effort by group members involved in conflict to claim that their group has suffered more than their adversarial group (Noor et al., 2012; Noor, Brown, & Prentice, 2008). This competition can focus on both the quantity and quality of suffering. Groups can compete over their share of suffering across different dimensions, including the physical dimension (e.g. death toll or injuries), the material dimension (e.g. loss of resources), the cultural dimension (e.g. giving up one's way of life and language), the psychological dimension (e.g. trauma and poor psychological well-being), and the moral dimension (e.g. perceived illegitimacy of suffering).

Competitive victimhood arises from the motivation of conflicting groups to establish that the ingroup has suffered more than the outgroup. Here, the emphasis is not only placed on the quantity of the suffering but also on the unjust quality of the suffering. At first glance, such competition over victimhood may appear counter-intuitive, especially because the victim status is often associated with weakness and humiliation. However, when viewing victimhood as a psychological resource which can serve groups with key psychological and social functions, competitive victimhood no longer appears counter-intuitive.

To illustrate, assuming the role of the 'bigger' victim can entitle groups to justify ingroup violence against other groups (Noor, Brown, & Prentice, 2008). From a leadership perspective, strategically portraying one's groups as the (greater) victim provides leaders with powerful narratives which they can utilise to bolster ingroup cohesiveness and identification with the ingroup and ultimately mobilise their ingroup to take actions against the outgroup. In the post-conflict setting, competitive victimhood can enable groups to avoid negative emotions for their ingroup wrongdoings during the heightened phase of the conflict and help them deny responsibility and any material compensation. Consequently, an inverse relationship can be expected between competitive victimhood and forgiveness. That is, the stiffer the competition over victimhood among conflicting groups, the less likely conflicting

groups are to consider forgiving one another (Noor, Brown, Gonzalez, et al., 2008; see Noor et al., 2012, for a review).

The opposing victim belief to competitive victimhood is **common victimhood** (Noor et al., 2012, 2017; Schnabel, Halabi, & Noor, 2013), also referred to as *inclusive victim consciousness* (Vollhardt, 2015).

Definition Box

Common Victimhood: This belief is based on the premise that despite the clash between two conflicting groups (e.g. Israelis and Palestinians), they can come to agree that the conflict involves negative consequences for both groups' lives (insecurity, unstable economy, etc.). This belief is expected to transform the adversaries' perceptions from rigid and mutually exclusive victim-versus-perpetrator category into a more inclusive 'we' (i.e. both parties are victims of the conflict).

This belief draws both group's attention to their common suffering due to the (regional) conflict and thereby succeeds in acknowledging that, similar to the ingroup, the outgroup has suffered as well, albeit possibly in different ways from the ingroup. For example, consider the lives of Israelis and Palestinians in the Middle East. Clearly, compared to Palestinians, Israelis are in an advantageous position militarily, among other respects. However, despite such an obvious advantage, it is difficult to discard the fact that irrespective of their position, Israelis' quality of life has been adversely affected by the regional war, be that in terms of mental health, economically and across other social dimensions. Put differently, if the urge to engage in competitive victimhood generally arises from the motivation to receive sufficient acknowledgement for one's ingroup suffering, common victimhood provides such an acknowledgement for both conflicting groups right at the outset, thereby potentially diffusing unnecessary competitiveness, tension, and hostility between the conflicting groups. As such, a positive relationship between common victimhood and forgiveness can be expected.

Box 15.2 Zooming In: The Parents Circle-Families Forum (PCFF)

The reality and practice of common victimhood beliefs are powerfully demonstrated by an Israeli-Palestinian NGO *The Parents Circle-Families Forum* (PCFF), which was formed in 1995. Crucially, each family has endured a loss of an immediate family member in the ongoing conflict. Thus, PCFF fosters building rare bridges across the divide by drawing attention to the similar suffering endured by both Palestinian and Israeli families. Moreover, PCFF utilises these stories of common suffering for educational purposes in schools, public meetings, etc. Today, PCFF consists of over 600 Israeli and Palestinian families (visit: http://theparentscircle.org/en/about_eng/).

We Are Our Beliefs

As is apparent from the previous discussion, there is an important interplay between a group's victimhood beliefs and their social identity. In fact, in part the very beliefs about their victimhood may provide the content of groups' social identities, and indeed the level of inclusiveness of these identities may vary as a function of such (competitive vs. inclusive) victimhood beliefs. Specifically, construing one's ingroup suffering through the competitive victimhood mindset may indicate that the group is likely to operate from a narrower and more exclusive social identity category, and therefore the group's focus and concerns extend to its fellow ingroup members only. By contrast, applying an inclusive victim belief to making sense of one's ingroup suffering entails that the group's awareness of suffering is elevated to a superordinate and more inclusive social identity category, and therefore the group's

focus and concerns expand beyond seeking acknowledgement for the suffering of one's own group and attention is paid to the suffering of the outgroup as well.

Box 15.3 Zooming In: Hierarchy of Grief in Northern Ireland

The violent conflict between the Protestant and Catholic communities in Northern Ireland is epitomised in the dissensus concerning each community's desires for Northern Ireland's constitutional future (Dixon, 2001; Hewstone et al., 2004). The Protestant community, who are the historically advantaged group, wishes for Northern Ireland to remain part of the UK. By contrast, the Catholic community, who are the historically disadvantaged group, desires the reunification of Northern Ireland with the rest of Ireland, thus aiming to undo the partition which took place in 1921. As a result of this dispute, a violent conflict has been fought for more than three decades, claiming almost 4000 lives (Fay, Morrissey, & Smyth, 1999). Even in today's post-peace agreement era, Northern Ireland is characterised as a divided society displaying intermittent episodes of sectarian violence, intergroup distrust, and high levels of social segregation (Connolly & Healy, 2003; Darby & MacGinty, 2000; Dixon, 2001; Hewstone et al., 2008; Schubotz, 2005). Although in theory the notion of a common victimhood should benefit the conflicting groups in Northern Ireland, a recent event triggered by a recommendation put forward to the Northern Irish government reveals the challenges when attempting to put the concept of common victimhood into practice. The recommendation was for the government to pay £12,000 in compensation to the families of everyone who had lost their lives due to the conflict. Crucially, this compensation was to be offered to victims from both sides of the conflict – regardless of whether the victim was an innocent bystander, a British soldier, police officer, or a member of a paramilitary organisation. In other words, the recommendation was proactively aimed at promoting the notion that 'there is no difference in a mother's tears' and that there can be no 'hierarchy of grief' over the loss of her loved ones. As well intended as such a recommendation was, it entirely backfired. Both sides of the conflict were outraged by the compensation being extended to the 'other side', especially to their violent members such as paramilitaries or armed forces. Such reactions highlight that in certain contexts conflicting groups may not easily give up their tendency to engage in competitive victimhood in order to embrace the notion of common victimhood, thereby acknowledging their mutual suffering (Anger of Troubles payment plan, 2009).

Having reviewed traditional and recent theorising about how and why groups' collective suffering may become among the most thorny and divisive dimension defining intergroup relations, in the next section, we explore forgiveness and its utility for transforming seemingly intractable conflicts.

Intergroup Forgiveness

Notwithstanding the benefits revenge can offer to victimised groups (see Box 15.4), there are a number of fundamental problems associated with revenge. To begin with, all human perceptions are subjective and often non-veridical. This is especially true when it comes to perceptions of suffering and its severity, which systematically vary as a function of victim-perpetrator roles (Baumeister, 1996; Kearns & Fincham, 2005; Zechmeister & Romero, 2002; see also Hornsey, Okimoto, & Wenzel, 2017). That is, relative to perpetrators, victims often view the suffering as intentional and severe. Consequently, the question

of what might constitute a fair punishment becomes rather divisive. Often, victims are likely to view the punishment as too lenient, while perpetrators perceive the same punishment as too harsh. The basis for such self- or ingroup-serving biases is rooted in perspective divergences that tend to give rise to differential causal attributions and evaluations between actors and recipients of aggressive actions (Mummendey, Linneweber, & Löschper, 1984; see also Noor, Kteily, Siem, & Mazziotta, 2018). Consequently, such perspective divergences can contribute to a role reversal in that the original perpetrators may feel a profound sense of victimhood as a result of perceiving the punishment as excessive, while the initial victims become bloodthirsty; thereby both parties contribute to further harmdoing and deepen their initial enmity (Minow, 1998; Noor et al., 2012; Noor & Cantacuzino, 2018).

Box 15.4 Zooming In: The Benefits of Revenge

Taking revenge as a strategy may provide victims with a number of advantages: first, revenge enables victims to get even. Getting even is often about correcting the wrong the victims experienced, thereby achieving a sense of justice. However, perhaps more importantly, getting even also serves victims in a symbolic way by teaching the perpetrator group a lesson that they will not forget (Gollwitzer & Denzler, 2009), thereby protecting victims from future harms. All of the above, psychologically speaking, can help to restore victims' sense of control and agency which may have been diminished by being harmed in the first place (Noor & Cantacuzino, 2018).

Revenge also faces the problem of scale, particularly in contexts of intergroup mass violence. That is, societies such as those in Rwanda or South Africa are left with hundreds of thousands of perpetrators and with an even larger number of victims. Such sheer scale of perpetration and suffering demonstrates the decreased value of revenge as a strategy to break through the chaos of intergroup violence and restore order in society (Tutu, 2012). Perhaps the most compelling point highlighting the futility of revenge is the fact that revenge cannot reverse the damage that was initially done (Noor & Cantacuzino, 2018).

Box 15.5 Zooming In: When Victims Become Killers in the Rwandan Context

One of the most challenging questions to answer relates to why those who have endured great suffering may become involved in harming and indeed killing others. 'When victims become killers' is part of the title of a book by Mahmood Mamdani (2001) in which the author attempts to provide an answer to this question in the context the Rwandan genocide in 1994. Despite having endured a mass killing in 1972, the Hutu majority killed an estimated 800,000 of the Tutsi minority and moderate Hutu. Mamdani seeks to trace back such tragedies to their historical roots such as arbitrary land boundaries and racialised status differences between Hutu and Tutsi introduced and nurtured by the European colonisers, coupled with a poor economy.

Given the outlined shortcomings of revenge and the catalysing effect of major world events, such as the collapse of totalitarian regimes in South Africa, Chile, and Eastern Europe and the ongoing violent conflicts, new ways of transforming divided societies into peaceful coexisting ones are much sought after. Conflict transformation also requires finding adequate ways to address trauma and loss both at personal and collective levels. It is for these reasons that attention has been drawn to the utility of forgiveness as a strategy to bring about the much desired peaceful transformation both in societies with ongoing intergroup conflict and in post-conflict societies.

Definition Box

Intergroup Forgiveness: The decision for a victimised group to suppress their desire to seek retaliation against, or to avoid, members of the perpetrator group

Although our understanding of **intergroup forgiveness** continues to evolve, recently Noor (2016) has embarked on developing an integrative approach to conceptualizing forgiveness. Accordingly, the process of forgiveness involves making a conscious decision which is determined by multiple factors. First, the decision to forgive hinges on the extent to which the victimised group can regulate their negative emotions and thoughts about the perpetrator group. Second, a group's forgiveness is further determined by the extent to which the victimised group values their relationship with the perpetrator group (Burnette, McCullough, Van Tongeren, & Davis, 2012), as well as the extent to which they view the perpetrator group as a continued source of threat. That is, forgiveness is likely to occur when the perpetrator group is viewed as a potentially valuable partner and perceived as nonthreatening (Noor, Shnabel, Halabi, & Doosje, 2015). Finally, the decision to forgive may in part also depend on the extent to which the victimised group can imagine that the perpetrator group is capable of changing their hostile traits and behaviours (Wohl et al., 2015).

Although this multi-faceted approach to understanding intergroup forgiveness demonstrates the complexities associated with forgiveness, the different dimensions point to a common denominator that can be viewed as the key prerequisite for forgiveness, namely, forgiveness requires transformation involving (a) how the victimised group perceives the perpetrator group; (b) how the perpetrator group behaves, especially with regard to how they treat the victimised group in the future; and (c) the contextual factors (e.g. economic disparity) that may have given rise to the initial harmdoing (Noor, 2016; Noor & Cantacuzino, 2018). Thus, the decision to forgive at the intergroup level involves a bigger conversation than in the interpersonal context, which necessarily involves negotiating with your fellow ingroup members and assessing the degree to which forgiveness may be consistent with your ingroup moral values and norms.

Box 15.6 Zooming In: Measuring Intergroup Forgiveness

Modelled on existing measures of interpersonal forgiveness (McCullough et al., 1998), Noor et al. (2008) have developed an intergroup forgiveness measure based on six items, used in both ongoing and post-conflict settings, such as Israel-Palestine, Northern Ireland, and Chile:

1. 'I try not to hold a grudge against the other group for their misdeeds'.
2. 'Getting even with the other group for their misdeeds is not important to me' (reverse-coded).
3. 'I am prepared to forgive the other group for their misdeeds'.
4. 'I hold feelings of resentment towards the other group for their misdeeds'.
5. 'I have ill thoughts about the other group for their misdeeds'.
6. 'I am able to let the other group off with their misdeeds'.

Having described the process involving the decision to forgive a group, in the remainder of this chapter, we focus on real-life interventions based on the theories discussed earlier in this chapter. For each intervention, we first outline its theoretical rationale, briefly sketch the intergroup context, and summarise the major findings of the interventions. Although psychological interventions can vary in scale and scope (Paluck & Green, 2009), below we report studies that have tested psychological models in contexts of past or ongoing intergroup conflicts.

Interventions: How Victim Beliefs and Identity Interact

As established earlier, both direct and vicarious victimhood episodes are psychologically potent experiences and will affect our understanding of the self and other groups. More specifically, it is plausible that when groups construe their victimisation through the comparative lens, it is likely to lead to competitive victimhood ('we have suffered *more* than the outgroup') among the conflicting groups (Noor et al., 2012). Moreover, drawing on the social identity theory (Tajfel & Turner, 1979), it is also plausible to predict that such a competitive construal of one's victimhood is likely to strengthen one's identification with the ingroup, because a bolstered ingroup identification could serve individuals with protection against future threats. Crucially, an emboldened and protective bond with one's ingroup could also reduce our propensity to forgive perpetrator outgroups.

To test these predictions, a study was conducted in the context of the sectarian intergroup conflict between Protestants and Catholics in Northern Ireland. Although Northern Ireland has enjoyed relative peace over the last decade, this conflict has continued to claim lives. To date, the death toll is close to 4000 lives in a population of 1.7 million. In 2008 when the Northern Irish conflict was still hot, researchers indeed found evidence in support of the above theorising, using cross-sectional data. That is, after considering the suffering of their ingroup (relative to the outgroup), both Catholic and Protestant participants reported a tendency to engage in competitive victimhood, which in turn predicted positively their strength of identification with their respective ingroups. In turn, strength of identification predicted negatively forgiving the outgroup (Noor, Brown, & Prentice, 2008). As predicted by the social identity approach and victim beliefs, it appears that construing one's groups' suffering through exclusive and competitive victim beliefs bolsters ingroup identification. A narrow and strong identity in turn suppresses generosity in the group and therefore makes forgiving the adversary group for their wrongs less likely. The inverse relationship between strength of ingroup identification and lack of forgiveness was replicated among Catholics and Protestants in Northern Ireland in a later study, as well as among the proponents and opponents of the military regime in the post-Pinochet Chile (Noor, Brown, Gonzalez, Manzi, & Lewis, 2008, Studies 1 & 2). That is, the more individuals identified with their partisan ingroup, the less forgiveness they displayed towards the outgroup.

Box 15.7 Zooming In: Chile in the Wake of a Military Dictatorship

Following the end of Pinochet's military rule (1973–1990), Chilean society was left to deal with the legacy of his authoritarian regime, a division of the society into those with an ideology of the political Right and those with an ideology of the Left. The political Right, being in support of the Pinochet regime, viewed the military intervention by Pinochet as necessary for combating against Communism in Chile. To achieve this goal, the military regime engaged in systematic political violence against its opponents, which did not shy away from torture, executions, kidnappings, and other human rights violations. Consequently, the Left remembers the military regime as destructive of democracy and gross violations of human rights in Chile (Valenzuela & Constable, 1991). However, the regime's opponents also claimed their victims through their campaigns of political assassinations, bombings, and kidnappings. Even today, there is considerable debate about addressing the human rights atrocities that marked this historical period in Chile. Inevitably, these contrasting viewpoints have opened up controversial issues relating to the establishment of the truth, official apologies, and requests for forgiveness. To illustrate, shortly after receiving the first commission report into the human rights violations

during the military regime, Pinochet's elected successor President Patricio Aylwin stated, 'This is why I dare, in my position as President of the Republic, to assume the representation of the whole nation and, in its name, to beg forgiveness from the relatives of the victims' (Roniger & Sznajder, 1999, p. 101).

Providing experimental evidence for the link between the different levels of one's social identity (i.e. narrow vs. inclusive) and victim beliefs, Wohl and Branscombe (2005) examined these factors in the context of the Jewish Holocaust while focusing on the intergroup relations between contemporary Germans and North American Jews. Specifically, the researchers found that framing the Holocaust in concrete (vs. abstract and thereby more inclusive) terms, involving concrete group identities of the victim and perpetrator, led North American Jews to expect today's Germans to experience more guilt for the Holocaust atrocities. Crucially, participants were less willing to forgive Germans. However, when the Holocaust was framed as an example of atrocities that human beings inflict on one another (i.e. evoking a social category more inclusive than the narrow ingroup category, that of all humanity), Jewish participants assigned less guilt to contemporary Germans for the Holocaust and were more willing to forgive them. Although the effects of this rather simple intervention are impressive, one could argue that the efficacy of such abstract interventions may be due to the lack of intense conflict and relative peaceful co-existence between Jews and Germans in the contemporary world. In other words, would such an intervention work in contexts of ongoing and violent conflict?

To answer this question, Schnabel et al. (2013) investigated the viability of framing one's group's victim identity into a more inclusive one as an intervention tool to reduce the tensions between Israelis and Palestinians as a result of their ongoing conflict in the Middle East. Specifically, the researchers wanted to know whether such an intervention could reduce both groups' motivation to engage in competitive victimhood and to foster their intergroup forgiveness attitudes (see Box 15.6).

The rationale for Shnabel and colleagues' intervention was to evoke an inclusive identity (see Gaertner & Dovidio, 2014; Dovidio, Gaertner, & Saguy, 2009; see also Scheepers & Ellemers, Chap. 9) that would allow room to acknowledge the suffering endured by *both* Palestinians and Israelis due to the regional conflict. To do so, these researchers drew the conflicting groups' attention to their *shared* suffering in one experimental condition (i.e. *common victim identity*) by asking participants in this condition to read a short article reminding participants that *both* Jews and Palestinians are victims of the prolonged conflict. The article justified this perspective by referring to alleged recent research concluding that each party had experienced substantial individual and national losses in human life, property, trust, and hope (Schnabel et al., 2013, Study 1). Alternatively, in the control condition, participants read a neutral text about aircrafts that was not related to the regional conflict. Finally, the researchers created a third condition (*common regional identity*). In this condition, participants read a text highlighting recent archaeological research revealing that ancient Middle Eastern peoples, including Palestinians and Jews, shared a common primordial culture that is still evident today in highly similar traditions, cuisines, and mentalities.

Results of this intervention showed that, relative to the control condition, inducing *common victim identity* among Palestinians and Israelis successfully reduced both groups' motivation for competitive victimhood and, crucially, lead to increased willingness to forgive. By contrast, relative to the control condition, inducing *common regional identity*, corresponding to interventions traditionally utilised within the identity recategorisation framework (Dovidio et al., 2009; Gaertner & Dovidio, 2014), neither lead to the reduction of competitive victimhood nor did it lead to an increased level of forgiveness among the conflicting groups.

A number of important insights can be extrapolated from the above findings. First, these results yet again point to the important interplay between identity and victim beliefs. The findings demonstrate that when collective suffering is framed in identities that are inclusive enough to allow room for acknowledging *both* the ingroup's suffering and that of the outgroup's, the motivation for competitive victimhood can be decreased and the propensity to forgive one another can be increased. Second, fostering such inclusive victim identities provides researchers and practitioners with one of the few intervention tools that promises to be sufficiently robust and efficacious, even in contexts of ongoing and violent intergroup conflicts. Finally, these results also reveal that any such inclusive victim identity interventions must address the pressing needs of conflicting groups for acknowledgement of their mutual suffering. Otherwise, as seen in the generic *common regional identity*, such interventions may have little or no positive impact.

What Would Third Parties Think of Us?

Recent research has further advanced our understanding of the boundary conditions of victim beliefs, especially of inclusive victim beliefs (a.k.a. common victimhood). Specifically, given the positive impact of inclusive victim beliefs on rival intergroup relations, what might prevent groups from utilising this strategy to promote peaceful co-existence? Theoretically, we know, for example, that one reason why conflicting groups may be motivated to compete over their share of victimhood is to attract the moral and material support from third party groups (Noor et al., 2012). Remember that at times of active war, third party's support and interventions increase the likelihood that the supported group will win the conflict, at least, militarily (Balch-Lindsay, Enterline, & Joyce, 2008). Thus, undoubtedly third parties can play a key role in intergroup conflicts. To demonstrate this, researchers recently investigated the hypothesis that one reason why conflicting groups' may not be willing to readily acknowledge the suffering of their outgroups may have to do with the conflicting groups being concerned that such public acknowledgment may reduce the level of support they could receive from international third parties (Adelman, Leidner, Ünal, Nahhas, & Shnabel, 2016). Thus, the idea that was tested in this research was the extent to which a group's concern over losing a third party's support may influence the group's willingness to acknowledge the harm they had caused the outgroup.

Again, this research was conducted in the context of the Israeli and Palestinian conflict (Adelman et al., 2016, Study 1). The researchers employed an experimental paradigm, whereby Israeli participants either read a victimhood narrative highlighting exclusively the suffering of Israelis due to the regional conflict (*competitive victimhood narrative*) or a narrative that drew attention to the suffering of both Israelis and Palestinians as a result of the conflict (*inclusive victimhood narrative*). Interestingly, the way participants felt about the conflict and their collective suffering was revealed by the fact that the competitive victimhood narrative resonated with participants significantly more than the inclusive victimhood narrative.

However, irrespective of participants' preference for the specific narrative, the researchers observed several significant interaction effects on their key dependent variables, namely, motivation for competitive victimhood (e.g. 'Throughout the Israeli-Palestinian conflict, Israelis suffered more than Palestinians', Adelman et al., 2016, p.1419) and support for aggressive policies against the outgroup (e.g. 'Israel should withhold tax money from the Palestinians if they don't fight terrorism', Adelman et al., 2016, p. 1419). First, for participants who were presented with the inclusive victimhood narrative, the less they were concerned over losing third party's support due to the ingroup's acknowledgment of the outgroup's suffering, the less they were motivated to compete over their share of victimhood. By contrast, for participants who were presented with the competitive victimhood narrative, no significant relationship between their concern over losing third party's support and motivation for

competitive victimhood was observed. Regarding participants' support for aggressive policies against Palestinians, a similar pattern to the one above emerged. That is, among participants who were less concerned, the inclusive victimhood narrative decreased their support for aggressive policies, relative to the competitive victimhood narrative.

Taken together, the outlined research provides interesting evidence in support of the important role of third parties and how they may influence conflicting groups regarding what victim beliefs they adopt. A broader point to take away from this research is that often as researchers we simplify the dynamics of intergroup conflict by reducing our analysis to the ingroup and outgroup protagonists only. However, as the present research demonstrates, conflict maintenance (vs. reduction) is rarely a matter of disagreements between two groups in a social vacuum.

Can They Ever Change?

Victim beliefs can also be influenced by their beliefs about the perpetrator outgroup and about human nature more broadly. In other words, individuals' beliefs about what their enemy group might be capable of can shape how they would behave towards such enemy groups. This line of reasoning is anchored in the *implicit theories of change* (Dweck & Leggett, 1988; Dweck, Chiu, & Hong, 1995; see also Bernecker & Job, Chap. 12). The underpinning rationale here is that people vary in their beliefs about human beings' potential for change. On the one hand, you may believe that as human beings we all have the potential to change our personal characteristics and behaviours. On the other hand, you may perceive stability in human nature and expect that our individual traits and behaviours are rather resistant to change. Such differential beliefs entail important consequences for how you behave towards others, especially towards your outgroups.

In a study conducted with Israeli train passengers living in Tel Aviv, Israel, researchers experimentally manipulated participants' malleability beliefs about human nature by presenting them with bogus newspaper articles on recent research revealing alleged scientific evidence in favour (vs. against) such malleability (Wohl et al., 2015). To illustrate, in the pro-malleability condition, participants read alleged research findings revealing that the nature of groups in general could change, while in the non-malleability condition, the research findings revealed that the nature of groups would be fixed. In a purportedly unrelated second study, all participants were asked to read a bogus outgroup apology offered by the Palestinian leadership for the killing of innocent Israelis. Finally, participants were then asked to indicate the extent to which they were willing to forgive Palestinians, as well as the extent to which participants endorsed to reciprocate the Palestinian apology with one from the Israeli side.

The researchers found that they had successfully manipulated participants' malleability beliefs about Palestinians in the predicted direction. Importantly, the results showed that, relative to participants in the low malleability condition, those who were led to believe that groups' nature is malleable were not only more forgiving of Palestinians, but they were also willing to support the apology reciprocation (Wohl et al., 2015, Study 2).

What is striking about this intervention is that it extends the importance of victim beliefs to beliefs about perpetrators, thereby providing further intervention strategies for researchers and practitioners. Also of note is that the researchers observed this positive impact of the beliefs about perpetrators' malleability to also influence participants' willingness to reciprocate the outgroup's apology. Past literature has pointed out that the link between apology and forgiveness at the intergroup level is at best a tenuous one (Hornsey & Wohl, 2013). Thus, to observe the above effect in such a context is indeed very promising.

In the forgoing sections of this chapter, we were primarily concerned with summarising theoretical and empirical evidence to make a case in support of the social- and conflict-reducing utility of forgiveness. However, no case would be

complete without problematizing the limitations and unintended consequences of forgiveness, which we will address next.

The Limitations and Unintended Consequences of Forgiveness

Often forgiveness is considered as a gift given by victims to their perpetrators (Noor & Cantacuzino, 2018). Although the motivation behind such generosity may vary across victims, scholars generally agree that forgiveness tends to lose its power when we make it a duty. This is referred to as *forgiveness boosterism*, which involves praising and pushing forgiveness as a universal prescription (Lamb & Murphy, 2002). Clearly, the intention to write this chapter and dedicate our research careers to studying forgiveness are not served by referring to forgiveness as a panacea for resolving intergroup conflict.

Box 15.8 Question for Elaboration: Is Forgiveness Always a Good Thing?

So far in this chapter, forgiveness has been framed in terms of its utility at fostering peaceful co-existence between groups who are either currently engaged in conflict or who have a shared history steeped in hostile relations. However, can you think of any circumstances when forgiveness may not be the best strategy for groups to adopt? It might be particularly useful when thinking about this question to consider the relation between unequal groups in the long term.

In fact, forgiveness has been shown to be accompanied with some important unintended consequences. To illustrate, empirical research by Greenaway, Quinn, and Louis (2011) framed the atrocities White Australians have committed against Australian Aborigines as a common humanity tragedy (rather than the outcome of concrete hostile intergroup relations) with the intention to induce a *common humanity identity* among Australian Aborigines to foster intergroup forgiveness (closely modelled on Wohl and Branscombe's research discussed earlier, 2005). As predicted, the recategorisation efforts had the effect of soliciting intergroup forgiveness. However, the research also revealed that this process had the effect of reducing the Aborigines' willingness to demand restitution for the injustices they have endured at the hands of White Australians. Put differently, the same intervention that led to increased willingness to forgive also suppressed justice demands among Aborigines.

In a similar vein, Wenzel and Okimoto (2015) found that, when participants of a laboratory-created group were encouraged by their fellow ingroup members to forgive an outgroup transgressor, this reduced anger and increased sympathy towards the transgressor among the participants. Crucially, these forgiving participants also perceived less injustice than those who were not prompted to forgive.

Although a rigorous test of the causal relationship between forgiveness and justice demands has not yet been conducted, the above findings point to interventions that, while on the surface are aimed at fostering forgiveness, may have serious sedative effects on justice-related outcome variables. Thus, both researchers and practitioners ought to exercise extra caution when promoting intergroup forgiveness and pay particular attention to justice concerns, which are considered key to a meaningful and robust conflict resolution infrastructure.

Summary

- The propensity to suffer can transcend from the individual to the group level when suffering is inflicted as a consequence of one's particular group membership.
- Groups are able to construe such suffering from discrete and powerful narratives into a shared sense of collective victimhood.

- This dynamic (and obstructive) interplay between group identity and victimhood can act as a barrier to intergroup forgiveness.
- When interventions are instigated that target mutually destructive suffering and focus groups' attention upon their *common suffering*, intergroup forgiveness is more readily endorsed.
- Intergroup forgiveness can be achieved and is a viable strategy to impede perpetuating cycles of revenge. Ultimately, this has the effect of reducing the net amount of suffering.

Recommended Reading

Greenaway, K. H., Quinn, E. A., & Louis, W. R. (2011). Appealing to common humanity increases forgiveness but reduces collective action among victims of historical atrocities. *European Journal of Social Psychology*, *41*, 569–573.

Noor, M. (2016). Suffering need not beget suffering: Why we forgive. *Current Opinion in Psychology*, *11*, 100–104.

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Guiding Answers to Questions in the Chapter

1. Question with Box 15.8: Is Forgiveness Always a Good Thing?

   A: The empirical evidence reviewed in this chapter demonstrates that when conflicting groups are reminded of their common suffering, such groups are more likely to forgive one another, thus fostering intergroup harmony. However, such an intervention may also reduce the anger and identification with one's own group. Such dispositions are paramount when mobilising disadvantaged groups to rally for social change in the wake of such disadvantage (e.g. see Wright & Lubensky, 2009; and also Greenaway et al., 2011). Though having a curing impact on fractured relations, forgiveness may come at the cost of normalising objective group-based inequalities (see Morton & Postmes, 2011). In the long run, this is particularly problematic, for without the desire for social change, such inequalities are given the opportunity to fester without the challenge of redress from those people who should be most motivated to challenge the status quo – those in the disadvantaged position. This critique of forgiveness is touching on a much bigger and unanswered question, namely, how does forgiveness relate to justice?

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Index

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