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# 1 Changing Behavior: A Theory- and Evidence-Based Approach

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## 1.1 Introduction

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Many problems observed in today's society can be linked, directly or indirectly, to human behavior. Problems with roots in, or links with, behavior include debilitating illnesses and chronic conditions (e.g., cardiovascular disease, cancers, obesity, sexually transmitted infections), global pandemics of communicable diseases (e.g., SARS, H1N1, COVID-19), mental health problems (e.g., depression, anxiety), addictions (e.g., substance abuse), social and interpersonal problems (e.g., bullying, abuse and violence in relationships), financial difficulties (e.g., personal debt, problem gambling), criminal behavior (e.g., social disorder, vandalism), educational challenges (e.g., truancy, attentional difficulties), and environmental concerns (e.g., overuse of nonrenewable resources, failures to recycle or save energy). Analogously, regular participation in relevant behaviors is associated with adaptive outcomes such as better health and well-being, positive mental health, better functioning in the workplace, in interpersonal relationships, and at school, and more environmentally conscious choices and consumer behavior. Vast databases of archival statistics demonstrating how behavior is linked to social problems are at the disposal of organizations responsible for developing policy to tackle them. Such data signal the need for behavioral solutions and have catalyzed fervent interest in the determinants of behavior and in methods and strategies to change behavior. Governments, organizations (private and public corporations, schools, community organizations), and professionals (government officials, health care workers, managers,

teachers) recognize the value of developing strategies to change the behavior of targeted population groups in order to promote adaptive outcomes. To date, legislation (e.g., seat belt use) and regulation (e.g., banning smoking in public places) stand as some of the most successful means to change population behavior. However, in many cases, such initiatives are not possible, feasible, or acceptable. As a consequence, alternative approaches to behavior change are needed.

Scientific inquiry into behavior change has entered into the mainstream. Recognition of the importance of behavior change to solving social problems has led governments to engage scientists from various disciplines within the social and behavioral sciences to inform policy and develop effective behavior change strategies targeting high-priority, behavior-related problems. For example, governments and organizations have invested in funding initiatives to develop research evidence (e.g., National Cancer Institute, 2019; National Institutes of Health, 2019; Nielsen et al., 2018; OBSSR, 2016), commissioned reports and evidence syntheses (e.g., Behavioral Insights Team, 2019b; Cabinet Office, 2011; NICE, 2007, 2012, 2014), and set up working groups, expert panels, and conferences with an advisory purview on behavior change (e.g., Behavioral Insights Team, 2019a; Brandt & Proulx, 2015; House of Lords, 2011; Ogilvie Consulting, 2019; Spring et al., 2013).

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Researchers in the fields of psychology, sociology, behavioral economics, philosophy, implementation science, education, communication science, and political science have been at the forefront of research on behavior change (e.g., Little & Akin-Little, 2019; Nielsen et al., 2018; Sheeran, Klein, & Rothman, 2017; Young et al., 2015). Scientists in these disciplines have been primarily responsible for creating and disseminating evidence on behavior change at all levels on the “continuum of evidence,” from basic theoretical research on determinants and mechanisms to translational research on the application of strategies to change behavior in specific contexts. The proliferation of behavior change research is predicated on the recognized importance of evidence-based practice that began in fields like medicine (Guyatt et al., 1992) and allied health (NICE, 2019) and has since been adopted in other domains such as education (EEF, 2019) and crime reduction and policing (College of Policing, 2019). Such evidence is critical to the application of scientific principles to inform the development of effective behavioral solutions to social problems – a *science* of behavior change (Michie, Rothman, & Sheeran, 2007; Nielsen et al., 2018).

## 1.2 A Theory- and Evidence-Based Approach to Behavior Change

### 1.2.1 Charting Progress in Theory-Based Behavior Change

The development of a science of behavior change owes a great deal to formative research applying behavioral theories to predict and understand and change behavior. For example, research beginning in the 1950s in the field of social psychology, particularly social cognition research on persuasion, motivation, and decision-making, focused on identifying the determinants of behavior in social contexts (e.g., Bandura, 1971; Bem, 1965; Festinger, 1964). Such research employed laboratory and field

experiments to provide controlled tests of the basic theory-derived mechanisms (Klein et al., 2015; Sheeran et al., 2017). This research built the foundations of many contemporary theories of behavior and the basis for many of the methods used to change behavior (Michie, 2008).

Parallel to this theory-focused experimental research, many behavioral interventions have tended to focus on the design features of interventions (e.g., recruitment, randomization, measurement evaluation, etc.) and on change in behavioral and associated outcomes, with less focus on theory, mechanisms, and intervention content responsible for behavior change (Prestwich et al., 2014; Prestwich, Webb, & Conner, 2015). While such research is informative on the effects of interventions in particular contexts, it provides little information on *how* the intervention worked and the processes involved. Such intervention research defines efficacy and effectiveness in terms of behavioral outcomes alone, without evaluation of the processes that led to the changes. These two parallel disciplines of research have resulted in a rich but disparate literature that includes a combination of rigorous experimental research focusing on testing specific theories and particular mechanisms, that is, research that attempts to unpack the “black box” of how change works, and behavioral intervention trials with a broader focus on changing behavior and related outcomes. It is only relatively recently that researchers have engaged in coordinated efforts to develop formal theories and systems that reconcile these bodies of research and broaden understanding of how to develop, evaluate, and implement behavior change interventions (Bartholomew Eldredge et al., 2016; Michie, van Stralen, & West, 2011).

### 1.2.2 The Value of Theory and the Emergence of a Science of Behavior Change

Behavioral theories provide important information on the aspects of interventions responsible

for, and likely to facilitate, behavior change and the individual, social, contextual, and environmental conditions that may magnify or diminish intervention effects (Glanz & Bishop, 2010; Kwasnicka et al., 2016; Michie et al., 2008). However, while behavioral scientists recognize the value of a theoretical basis in guiding interventions and typically claim that their interventions are based on theory, syntheses of research testing the efficacy of behavioral interventions have revealed that the reported detail of their basis in theory tends to be limited. In fact, reviews of behavioral interventions purported to be theory-based suggest that relatively few describe how the theory has been used, and those that do seldom test how elements of the theory change alongside changes in behavior and outcomes (Goodwin et al., 2016; McDermott et al., 2016; Prestwich et al., 2014). Further, while some research suggests that theory-based interventions have greater efficacy and reliability in changing behavior than those that do not, or, at least, those based on theory lead to more reliable, less variable outcomes (Bishop et al., 2015; McEwan et al., 2018; Webb et al., 2010), others suggest that a theoretical basis does not confer greater efficacy (Dalgetty, Miller, & Dombrowski, 2019; Prestwich et al., 2014). Such research is, however, held back by limitations in the extent and precision of reporting of intervention content and use of theory (e.g., how the theory was used in developing the intervention content, the appropriateness of the theory for the target problem and population) and, particularly, by insufficient or unclear descriptions of intervention content. This presents challenges to researchers aiming to identify links between theory and intervention content (Connell Bohlen et al., 2019). In addition, behavioral interventions with no reported basis in theory tap into similar mechanisms to those that report using theory, making comparisons relating to theory effectiveness difficult to interpret.

Recent developments in the science of behavior change have sought to resolve some of these issues. One of the most important advances has been the development of formal systems to efficiently and effectively describe behavioral theories and interventions. Pioneering work derived from content analyses of behavioral interventions has sought to identify the methods or *techniques* used to change behavior (Abraham & Michie, 2008; Kok et al., 2016; Michie et al., 2013; Michie et al., 2015). The goals of this research are to identify the unique, separable techniques that represent the essential “building blocks” of behavioral interventions, arrive at a common set of terms to describe behavioral interventions, and develop a formal means to classify them. Conceptual work and reviews of behavioral intervention research internationally have led to the development of *taxonomies* of behavior change techniques (Kok et al., 2016; Michie, Ashford et al., 2011; Michie et al., 2013). The taxonomies are classification systems of isolated behavior change techniques. Recently, this work has been extended to link the intervention techniques described in behavior change technique taxonomies with constructs from theories that represent “mechanisms of change,” that is, *how* the techniques purportedly change behavior (Carey et al., 2018; Connell et al., 2018; Michie et al., 2008; Michie et al., 2017; Michie, Webb, & Sniehotta, 2010). Further research has also sought to describe the key processes required for the specification, development, testing, and reporting of behavioral interventions (Abraham, 2012; Bartholomew Eldredge et al., 2016; French et al., 2012; Michie, van Straalen, & West, 2011; Michie et al., 2015; Sheeran et al., 2017). These efforts have been directed toward developing an evidence base that is optimally informative of the intervention methods that are effective in changing behavior, how such interventions work, and how they can be converted and implemented into workable, feasible solutions to behavioral problems.

### 1.2.3 Emerging Approaches to Behavior Change Intervention Development

Identifying behavior change techniques, and describing links between the techniques and theory-based constructs, forms part of broader approaches that seek to describe essential processes in the development of behavior change interventions. These approaches are based on the premise that developing knowledge on the methods that are optimally effective and reliable in changing behavior, and the factors that determine their effectiveness, is essential if the science of behavior change is to offer meaningful solutions to those tasked with tackling problems linked to behavior. Numerous examples of these approaches exist, and many have adopted a theory-to-practice approach that focuses on identifying not only “what works” when it comes to methods of changing behavior but how those methods work and how they can be developed into practical and acceptable interventions for delivery with high fidelity to a target population (for a review, see O’Cathain et al., 2019). Prominent approaches to intervention development with a strong focus on theoretical basis include the intervention mapping approach (Bartholomew Eldredge et al., 2016); the behavior change wheel (Michie, van Stralen, & West, 2011); application of the theoretical domains framework (French et al., 2012); the experimental medicine approach (Sheeran et al., 2017); and the mapping change mechanisms approach (Abraham, 2012; see Appendix 1.1 in the supplemental materials for details). Key steps common to these approaches are (1) identifying the problem that warrants change; (2) identifying the behavior or behavior-related outcome of interest; (3) identifying the theory- and evidence-based mechanisms on how a particular change technique or approach is likely to “work” in changing behavior and working them into a “logic model”; (4) embedding the change technique or approach into an intervention and planning and designing a method or “trial” to

test the proposed model; (5) planning means to evaluate efficacy/effectiveness as well as process; and (6) planning for implementation of the intervention. Some of the approaches focus mainly on describing the first four steps (steps 1 to 4) in the process (French et al., 2012; Sheeran et al., 2017), while others follow all steps from problem specification to implementation. These approaches mark important progress on behavior change intervention development, and they have provided researchers and practitioners with a clear blueprint of the required procedures to develop theory- and evidence-based behavior change interventions and, for some of the approaches, the necessary procedures to evaluate their efficacy, proposed mechanism of change, and implementation effectiveness (see Appendix 1.1, supplemental materials).

## 1.3 *The Handbook of Behavior Change*

*The Handbook of Behavior Change* was developed to provide comprehensive coverage of research and practice in behavior change, from basic research based on theory to the application of behavior change interventions that are optimally effective in solving social problems. The handbook brings together current evidence in research and practice into a single resource that outlines the fundamental principles and latest advances in theory on behavior change; details evidence on key considerations required to develop, implement, evaluate, and translate behavior change interventions; and provides a series of clear-language, step-by-step guidelines for practitioners and interventionists from multiple fields. It pools knowledge from leading experts at the cutting edge of behavior change theory, research, and practice and provides in-depth, evidence-based works that summarize current knowledge in this emerging science. The handbook reflects the multidisciplinary nature of behavior change, encompassing perspectives

from diverse disciplines in the social sciences, both established (e.g., psychology, sociology, economics, research methods) and emerging (e.g., intervention design, behavioral economics, implementation science, translational medicine). Central to the handbook is a basis on theory and evidence from these disciplines, comprehensive coverage, balance in views and perspectives, and emphasis on the translation of behavior change research into practices that lead to meaningful changes and solutions to problems with a behavioral cause. Chapter authors have been selected because they are at the forefront of generating evidence in behavior change through their own theory, research, and practice and are therefore eminent authorities on their selected topic.

The handbook is organized into three parts: Part I: Theory and Behavior Change; Part II: Methods and Processes of Behavior Change: Intervention Development, Application, and Translation; and Part III: Behavior Change Interventions: Practical Guides to Behavior Change. These parts reflect themes from the generalized approaches to developing theory-based behavior change interventions outlined in the previous section, beginning with the application of theory, through to the development, implementation, and evaluation of interventions, and the important considerations involved in translating interventions into practice (Abraham, 2012; Bartholomew Eldredge et al., 2016; French et al., 2012; Michie, van Straalen, & West, 2011; Sheeran et al., 2017). Part I focuses on the use of psychological, behavioral, social, and environmental theories to inform behavior change and is targeted at all those interested in how theory is used to inform interventions and how applying those theories postulate the mechanisms that engender behavior change. Part II focuses on the processes and methods needed to design, develop, implement, evaluate, and translate behavior change interventions. Part III provides sets of practical guidelines on how to develop behavior change interventions using

particular behavior change techniques or methods. The next sections provide an overview of the chapters in each section.

## 1.4 Part I: Theory and Behavior Change

Part I addresses the application of theory to behavior change. The chapters cover key approaches that have been applied to identify behavioral determinants and predict behavior and to inform the development of behavior change interventions. Each chapter provides an outline of the key tenets of the theory, including its basic assumptions, constructs, and predictions, followed by a review of relevant empirical evidence. Next, the ways in which the theory has been used and operationalized in changing behavior, particularly the behavior change methods or *techniques* implied by the theory, and how these have been embedded in interventions to test their effects on behavior change, is reviewed. The chapters then provide a review of experimental and intervention research that has applied the identified methods or techniques in changing behavior and the relative strength, value, and quality of the findings for research and practice. Finally, the chapters outline possible avenues for further development of research and practice, particularly gaps in knowledge and how they may be addressed.

Many of the theories covered in the chapters stem from the field of applied social psychology, a discipline that has contributed much to the prediction of behavior and the means to change it. A key perspective is the social cognition approach, which focuses on individual attitudes and beliefs as key determinants of behavior change. Chapters from this perspective include the theories of reasoned action and planned behavior (Ajzen, 1991; Chapter 2, this volume), social cognitive theory (Bandura, 1986; Chapter 3, this volume), the health belief model and protection motivation theory (Rogers, 1975; Rosenstock,

1974; Chapter 4, this volume), and the common-sense model of self-regulation (Leventhal, Meyer, & Nerenz, 1980; Chapter 5, this volume). Applications of these theories have been highly influential in identifying the social determinants of behavior change.

However, noted boundary conditions and limitations of social cognition theories (e.g., Head & Noar, 2014; Noar & Zimmerman, 2005; Trafimow, 2012), particularly the observed “shortfall” in the relationship between individuals’ intentions and their behavior (Orbell & Sheeran, 1998; Rhodes & de Bruijn, 2013), have inspired approaches that incorporate other decision-making constructs and processes. Notable among these are “dual-phase” theories of action that distinguish between a motivational phase, in which intentions are formed, and a volitional phase, in which intentions are augmented with implemental strategies like planning to facilitate enactment. The model of action phases (Heckhausen & Gollwitzer, 1987; Chapter 6, this volume) and the health action process approach (Schwarzer, 2008; Chapter 7, this volume) are dual-phase theories in which constructs such as planning determine the strength of the intention-behavior relationship.

Part I also covers theories that adopt alternative perspectives on behavior change. These perspectives share common features in that they view behavior change as a function of internal motivational and regulatory processes. For example, self-determination theory focuses on the quality rather than quantity of motivation as a determinant of behavior (Deci & Ryan, 1985; Ryan & Deci, 2017; Chapter 8, this volume). Another approach, control theory (Carver & Scheier, 1982; Powers, 1973; Chapter 9, this volume), adopts a systems perspective from physics and engineering to provide an analysis of behavior based on the regulation of perceptual inputs and outputs and maintenance of homeostatic equilibrium. A further contrasting approach is offered by the transtheoretical model (Prochaska & DiClemente, 1982; Chapter 10, this volume). Developed from therapeutic work in

clinical contexts, the model adopts a stage approach to understanding behavior change from *pre-contemplation* to *action*, with *processes of change* determining shifts from one stage to the next. A final perspective is offered by integrative self-control theory (Chapter 11, this volume). The theory proposes that capacity to regulate impulses and engage in effortful control over behavior determines whether an individual will be successful in controlling their behavior or succumbing to desires.

One of the limitations of social cognition and motivational theories applied to behavior change is that they tend to view behavior change as resulting from reasoned, deliberative processes that are considered effortful and cognitively demanding. However, there has been renewed interest in “dual-process” theories (Bargh, 1994; Fazio, 1990), more recently popularized by Kahneman (2011), which suggest that behavior is a function of two interacting processes or “routes” to behavior: an “impulsive” process, in which action is determined by a rapid, low-effort process that occurs with relatively low conscious awareness; and a “reflective” process, in which action is controlled by a slower, intentional process that requires considerable cognitive effort and high awareness (Strack & Deutsch, 2004; Chapter 12, this volume). An understanding of automatic, non-conscious processes is also central to theories on habit. Developing adaptive habits, as well as breaking maladaptive habits, is important to behavior change (Aarts & Dijksterhuis, 2000; Hagger, 2019; Orbell & Verplanken, 2010; Wood, 2017; Chapter 13, this volume). Recent approaches to behavior change have focused on how subtle changes to individuals’ environment at the point of decision can alter behavioral patterns. These approaches come from a broad perspective known as “nudging” or choice architecture, made popular by Thaler and Sunstein (2008). Marteau et al. (2012; Chapter 14, this volume) outline recent perspectives of how these types of interventions, and other interventions based on environment changes, may influence behavior, with a

predominant focus on implicit, nonconscious processes. More recently, theorists have developed integrated models that bring together constructs from social cognition and motivational theories and nonconscious and planning processes from dual-process and dual-phase theories, respectively (Hagger, 2009; Chapter 15, this volume). These theories integrate different theoretical approaches to produce more comprehensive descriptions of behavior and behavior change.

While many theoretical perspectives on behavior change take an individual-focused approach, it is clear that individuals do not act in a “social vacuum,” and their behavior is often a function of beliefs and perceptions influenced by their group membership. Social identity approaches apply group-related constructs to explain individual behavior (Tajfel & Turner, 1986; Chapter 16, this volume). More broadly, ecological theories suggest that behavior change should be considered in the social and environmental contexts in which people behave (Sallis, Owen, & Fisher, 2015; Chapter 17, this volume). These theories suggest that, beyond beliefs and motives, behavior is a function of determinants operating at multiple levels including the individual (e.g., socioeconomic status, age, gender), environmental (e.g., policies supporting behavior, access to facilities, areas of residence), and social structural (e.g., family and peer group structure and beliefs) levels. Similar perspectives are considered in community theories of behavior change, which provide a multilevel systems approach to identifying factors at the individual, organizational, community, and societal levels that influence behavior change (see Chapter 18, this volume).

## **1.5 Part II: Methods and Processes of Behavior Change: Intervention Development, Application, and Translation**

Part II focuses on procedures and processes in developing, testing, evaluating, and implementing behavior change interventions, including key

methodological and practical considerations to consider when planning and developing interventions to change behavior. Each chapter provides an overview of the topic, summarizes key research, and outlines implications for subsequent research and practice. Emphasis is placed on the means by which behavior change efforts are delivered, evaluated, refined, and put into practice.

Part II begins with a broad overview of the process of developing behavioral interventions (Abraham, 2012; Chapter 19, this volume). This is followed by a summary of a systematic experimental approach to developing behavior change interventions (Sheeran et al., 2017; Chapter 20, this volume). Together these chapters provide two broad approaches to developing, implementing, and evaluating behavioral interventions based on theory and mechanisms of change (see Section 1.2 and Appendix 1.1, supplemental materials).

Subsequent chapters focus on the development, evaluation, and implementation of behavior change interventions. Multiple guidelines for designing behavioral interventions (e.g., MRC, 2019), informed by interdisciplinary evidence and expert consultation, have been produced over the past two decades (Chapter 21, this volume). The guidelines have also informed how behavioral interventions should be evaluated in formal research as well as ongoing evaluation in practice (Chapter 22, this volume). Considerable emphasis has also been placed on the importance of translating efficacious behavior change interventions into practice (Chapter 23, this volume). Related to this is the necessity of involving appropriate stakeholders (e.g., leaders of organizations, policymakers, personnel involved in intervention delivery; Chapter 24, this volume) and users (i.e., members of the target population; Chapter 25, this volume) in all these processes. Finally, economic evaluations of behavior change interventions provide essential information on cost-effectiveness to those in charge of budgets (Chapter 26, this volume).

It is also important that intervention designers recognize the challenges presented by the physical



and social contexts in which behavior change interventions are delivered. Documented disparities observed in economically underserved communities in areas such as health and education suggest that such communities are likely to benefit most from behavior change (Schüz et al., 2017). However, evidence suggests that behavior change interventions are less likely to be effective, and engagement is likely to be much lower, in these populations. Interventionists, therefore, need to modify and adjust interventions in order to address and accommodate disparities (Chapter 27, this volume). More broadly, behavioral interventions need to be sensitive to the communities in which they are delivered. Consistent with stakeholder engagement, community interventions need to be tailored to the specific needs of communities through, for example, cocreation by, and consultation with, community stakeholders (Chapter 28, this volume).

Part II also includes chapters on special methodological topics in behavior change. Advances in mobile and handheld technology (e.g., smartphones, activity trackers, mobile cameras, and recording devices) afford interventionists with new opportunities to deliver interventions in innovative ways to improve their reach and effectiveness (Chapter 29, this volume). It is also important to note that much of the research evidence on behavior change adopts a quantitative, hypothetico-deductive approach that has become synonymous with the “scientific method.” However, critical and qualitative research approaches provide important perspectives and evidence on behavior change that can augment or supplant evidence from quantitative approaches (Chapter 30, this volume).

## 1.6 Part III: Behavior Change Interventions: Practical Guides to Behavior Change

An overarching goal of this handbook is to provide the most up-to-date, evidence-based guidance on methods that can be used to effectively

change behavior and how to go about doing so. This guidance is for researchers interested in advancing behavior change interventions and producing new evidence of intervention effectiveness, as well as practitioners and stakeholders seeking effective methods for changing behavior based on current theory and evidence. The chapters in Part III, therefore, offer researchers and practitioners specific evidence-based guidelines on behavior change interventions. Each chapter focuses on a particular set of behavior change techniques or approaches that have gained prominence. The techniques and approaches include those that have been frequently used in behavior change research and practice such as persuasion, planning, and support for self-efficacy, as well as emerging approaches such as the use of imagery and strategies based on behavioral economics, self-control, and habit.

Each chapter begins with an overview of the behavior change technique or approach, including how the technique has been identified in behavior change taxonomies (when relevant) and a review of current evidence supporting its application. Where evidence is available, chapter authors have produced “step-by-step” guides as examples that outline means to implement the technique in practice, with consideration of key technical issues, including (1) typical means of delivery; (2) target audience and behaviors; (3) enabling or inhibiting factors; (4) training and skills required; (5) intensiveness or “dose” of the intervention technique or method required; (6) evaluation of intervention fidelity; (7) evaluation of intervention effectiveness; and (8) typical materials needed to implement the intervention. Many of the chapters provide exercises, scripts, forms, worksheets, and measures as supplemental materials that can be adapted by interventionists to develop the content of behavioral interventions. These materials are aimed at providing useful compendium of behavioral intervention contents based on current evidence.

Part III comprises chapters outlining specific techniques for changing behavior by altering individuals' beliefs, attitudes, risk perceptions, and other social cognition constructs (Chapters 31 and 32, this volume) and changing individuals' motivation (Chapters 33, 34, 35, 36, 37, and 38, this volume). Additional chapters detail approaches that promote intention enactment using planning techniques based on dual-phase models of action (Chapter 39, this volume) and approaches that promote behavior change by tapping into implicit or nonconscious processes (Chapters 40, 41, and 42, this volume). Beyond individual-level interventions, techniques and methods to change the behavior of individuals and groups (e.g., romantic partnerships and other dyads, groups defined by shared membership, and ad hoc social groupings) through social influence and group processes are also covered (e.g., Chapters 43 and 44, this volume).

While the above groupings reflect the predominant target process or mechanism of change of the approaches covered in Part II (see Appendix 1.1, supplemental materials), it is important to note that many approaches include more than one technique and may, therefore, tap into more than one change mechanism (Connell Bohlen et al., 2019). For example, some affect-based interventions focus on changing behavior by enhancing risk perceptions (e.g., fear-inducing messages), but they can also tap into more nonconscious processes (e.g., reducing positive affect). Incentive-based interventions may change behavior by promoting motivation (e.g., increasing perceptions of the value of a behavioral outcome), but they may also evoke more automatic, spontaneous behavior change (e.g., changing behavior by conditioning through reward). Similarly, approaches such as motivational interviewing comprise multiple techniques that overlap with many other behavior change techniques (Hardcastle et al., 2017), as well as techniques and components (e.g., relational components; Dombrowski, O'Carroll, & Williams, 2016; Hagger & Hardcastle, 2014)

unique to the approach, but motivational interviewing is treated and applied as a single "approach" (e.g., Chapter 45, this volume).

## 1.7 Using the Handbook

The different parts of the handbook provide overall guidelines on general chapter themes at the global level based on a theory- and evidence-based approach to behavior change. The chapters in Part I are likely to be of most interest to those interested in learning more about specific theories and mechanisms of action relevant to behavior change. The chapters in Part II are designed for those interested in developing, implementing, and evaluating interventions, with keen attention to method and design. Part III is likely to be of primary interest to those seeking practical guidance on the content of interventions and how to put them into practice and in obtaining adaptable materials currently available to do so. Each chapter is designed to "stand alone", so that it can be read in isolation of other chapters, but, given overlaps in content and approach, references to other chapters and further reading are provided. There are also thematic and conceptual links between many of the chapters, both within and across the parts of the book. For instance, many theories reviewed in Part I are linked with Part III chapters that focus on particular techniques or approaches that target constructs from those theories, consistent with intervention mapping (Bartholomew Eldredge et al., 2016; Chapter 19, this volume) and experimental medicine (Sheeran et al., 2017; Chapter 20, this volume) approaches. It is recommended that readers consult the relevant companion chapters to supplement the insights gained from the chapter they are reading. A useful guide to thematic links between chapters is presented in Appendix 1.2 (supplemental materials). It is also important to note that some of the chapters that outline general approaches and methods with respect to behavior change will be relevant to many or

all of the chapters in the handbook. Finally, an important feature of each chapter is the provision of “practical summaries” to accompany the scientific summary provided in the abstract. The summaries highlight the key messages and recommendations relevant to behavior change research and practice covered in the chapter and increase access to this information for readers without a technical background.

## 1.8 Summary and Conclusion

The proliferation of problems with behavioral origins has catalyzed research on, and development of, strategies to promote behavior change, as well as how research findings may be leveraged by interventionists to effectively change behavior in practice. *The Handbook of Behavior Change* provides a comprehensive overview of research and practice on behavior change authored by specialists from multiple disciplines in the social sciences and other disciplines. The handbook adopts a theory- and evidence-based approach to changing behavior and provides coverage of the major theoretical and empirical developments in this emerging field. As interest in behavior change to address social problems in diverse domains such as health, education, economics, and the workplace grows, the handbook makes a unique contribution to knowledge by bringing together contemporary perspectives and up-to-date evidence with practical guidance on how to change behavior. Whether seeking to gain knowledge of the multiple perspectives on behavior change, conducting research to test the efficacy and effectiveness of behavior change methods, or developing behavior change interventions in practice, the handbook is designed to be useful to readers involved in each of these endeavors. It also presents new ideas and directions for research and practice toward a better understanding of behavior change and producing effective solutions to many of the problems faced by society.

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