What We Should Expect From Theories in Social Psychology: Truth, Abstraction, Progress, and Applicability As Standards (TAPAS)

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Abstract

The construction and development of theory is one of the central routes to scientific progress. But what exactly constitutes a good theory? What is it that people might expect from an ideal theory? This article advances a new model, which delineates truth, abstraction, progress, and applicability as standards (TAPAS) for a good theory. After providing the rationale for TAPAS, this article evaluates several social-psychological theories in terms of TAPAS, especially classic theories, and illustrates its utility with some more recent theoretical contributions of social psychology. This article concludes by outlining recommendations for effective theory construction and development, such as the utility of meta-analytic approaches for pursuing truth, the utility of theory-oriented courses and journals for pursuing abstraction, and the utility of adversarial collaboration for pursuing progress, and reaching out to major personal or societal issues for pursuing applicability.

Keywords

theory construction, theory evaluation, social psychology, meta-analysis, adversarial collaboration

The advancement of theory is a key goal of science. Ideally, theory is aimed at addressing the "how and why" of particular events and phenomena to help us find the underlying "truth," beyond surface appearances. Theory helps us see the coherent structures in seemingly chaotic phenomena and make inroads into previously uncharted domains, thus affording progress in the way we understand the world around us. Because it elucidates the causal mechanisms that produce manifest effects, theory points to ways of intervening in phenomena and changing the course of events; hence, theory is of essential pragmatic value and constitutes an indispensable tool for application.

Despite their key function to scientific progress, theories seem somewhat underappreciated. There is little attention for questions such as what constitutes a good theory, it is rare for teaching programs in psychology to include a course on theory construction, and there does not seem to be a strong tradition of handbooks focusing on theories in psychological science. In fact, since the birth of social psychology as a field, only a few books on theories of social psychology have been published. This is one of the reasons why Arie Kruglanski, Tory Higgins, and I decided to edit *Handbook of Theories of Social Psychology*, which recently appeared in print (Van Lange, Kruglanski, & Higgins, 2012). Indeed, before this handbook, the latest effort of this kind was the 1980 primer by West and Wicklund, who complemented the 1970 book by Shaw and Costanzo (revised in 1982), and the earlier classic work by Deutsch and Krauss (1965).

Moreover, the contemporary focus in psychological focus is on empirical research rather than on theory construction because the current incentive structure in psychological science promotes output in terms of empirical research, especially for those who look forward to getting tenure or a promotion in academic rank. Perhaps more than ever before, several journals welcome brief empirical articles reporting on research findings with "surprise-value." These developments are productive in many respects. But there is a risk that younger scientists who are trained as researchers rather than theorists, and who are challenged by output criteria for tenure or promotion, might opt for empirical articles rather than for articles with a stronger focus on theory construction.

The major purpose of the present article is to discuss the ideals for theories in social psychology and other fields of psychological science. In doing so, the focus will be on theory construction in social psychology, because most of my training is in social psychology and because social psychology has advanced a large number of theories over the past 50 years or so. They key questions are as follows: "What are the

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ideals for a good theory?" and "What is to be recommended to the field and individual researchers to enhance a focus on effective theory construction and development?"

I propose TAPAS—truth, abstraction, progress, and applicability as standards—as a basis for accomplishing this. I discuss various theories in social psychology, especially classic theories, to illustrate the utility of TAPAS. I provide recommendations as to how theory construction and development can fruitfully benefit from enhancing the pursuit of truth, abstraction, progress, and applicability. As such, this article complements some theoretical debates and commentaries that have appeared on approaches to social theory construction (e.g., Higgins, 2004; Kruglanski & Higgins, 2004; Kelley, 2000), the state of social/personality theory (Kruglanski, 2001; Mischel, 2004), and the theoretical bridging of social-psychological analyses with other fields and scientific disciplines (Kruglanski, 2006; Van Lange, 2006).

Ideals for Theories in Social Psychology (and Beyond)

What exactly constitutes a good theory? What is it that we might expect from an ideal theory in social psychology? While the remainder of this article focuses on "ideals" for theories in social psychology, I should note that these ideals are also relevant to theories in other fields of psychological science. I prefer to term *ideals* rather than *criteria* for evaluating theories because criteria conveys more strongly the assumption that a theory can meet all criteria optimally. This assumption seems quite unrealistic, especially for an ideal such as truth, because truth can never be securely obtained. I will return to this issue later, when addressing each of the ideals in greater detail.

Before discussing the ideals, it is important to ask the obvious question "What would qualify as something being or not being a theory?" Like earlier writers, we suggest that a theory may be defined minimally as a set of interrelated propositions (or principles) concerning a phenomenon or a set of phenomena (Mandler & Kessen, 1959; Shaw & Costanzo, 1982). Clearly, theories may differ in their generality, precision, and origins. Yet it makes sense, especially for a relatively young discipline, to adopt a broad, inclusive approach to the question what is, or is not, a theory. One might argue that a conceptual framework that inspired significant empirical research is worthy of inclusion even if it is incomplete or otherwise imperfect from a "purist" metatheoretical perspective. In addition, social-psychological theories tend to be in "middle range" (Merton, 1949, p. 5) anyway and hence "intermediate to minor working hypotheses" rather than grand theoretical edifices. Social psychology is rich in such midrange theories (see Pinker, 2002, p. 241; Van Lange, 2006, p. 8).

Whatever definition of a theory one opts for, it is important to ascertain what constitutes a *good* theory. Although numerous constructs have been advanced to outline various qualifications, standards, and criteria for theoretical "goodness," there is a fair amount of consensus regarding these matters: Theories are believed to be better if they have greater explanatory power; are more suitable to empirical tests and modeling; are more "logical," in the sense of coherence and internal consistency; are capable of explaining more (phenomena) with less (by way of assumptions), thereby reflecting the criterion of parsimony or Ockham's razor; and, critically, inspire new research that yields empirical discoveries (see, for example, Fiske, 2004; Higgins, 2004). For the present purposes, I focus on a framework that is characterized by four broad ideals, namely, truth, abstraction, progress, and applicability (see also Kruglanski, 2006; Van Lange et al., 2012). Each of these will be discussed in turn, and then briefly illustrated by considering some examples of theories of social psychology, thereby relying primarily on the more mature, well-known theories that have inspired research over decades, rather than a couple of years. Indeed, classic theories are the ones that are most suited for evaluation in terms of ideals for theorizing in social psychology.

Ideal 1: Truth

One of the central goals is to pursue truth. A theory ideally separates fact from fiction; it should establish what's real rather than what's imaginary. Although an inaccurate, fictitious theory can serve important functions (such as serving a heuristic function to stimulate further research), a theory should be oriented toward describing the truth. In light of this broader goal of truth, a theory needs to allow formulations of specific hypothesis that can be tested in carefully designed studies.

To be able to evaluate truth, a theory should be testable. It should be formulated in a way that it allows critical tests that either confirm or disconfirm the hypotheses that are derived from the theory. Although some nonempirical tests might be useful (e.g., computer simulation), it is clear that most of the confirmation or support (or lack of it) in social psychology comes from empirical research. As such, truth and testability are closely related, in that testable hypotheses are needed to evaluate what aspects of the theory are true or false, accurate or inaccurate.

At the operational level, truth and testability have strong implications for the methods that are available, for experimental design, and for measurement. Indeed, to provide plausible tests, the logic of experimental design is to eliminate (or prove invalid) possible alternative interpretations of empirical facts. Critical experiments are designed to set apart competing theories and decide which one appears more valid, and is better supported by the available evidence, than its competitors. The link of testability with methods might also become apparent when new methods and techniques become available. For example, the introduction of relatively new neuroscientific techniques, such as fMRI, might allow research to test claims that could not be really tested two or

more decades ago. In fact, we have seen that in recent years, several theories in social psychology and elsewhere have become more encompassing to take into account the neurological and other biological mechanisms (e.g., Bernston & Cacioppo, 2009), along with the increases in the number of laboratories and journals focusing on social neuroscience and related fields.

Indeed, it is important not to "romanticize" truth by assuming that theories eventually will represent the truth and nothing but the truth: Although truth can be striven for, it can never be securely attained. No theory, however successful, is secure, for alternative accounts of the same data are always possible in the future even if they may not be apparent in the present. You can disprove a theory but never prove it. You can only find support for a theory based on what is currently known. Moreover, the empirical "facts" are far from absolute. As noted by Popper (1959), the empirical basis of science is conjectural and fallible:

> The empirical basis of objective science has nothing "absolute" about it. Science does not rest upon rock bottom. The bold structure of its theories rises, as it were, above a swamp. It is like a building erected upon piles. The piles are driven down from above into the swamp; and when we cease our attempt to drive our piles into a deeper layer, it is not because we have reached firm ground. We simply stop when we are satisfied that they are firm enough to carry the structure, at least for the time being. (p. 111)

Thus, although a primary ideal of science, the pursuit of truth is a mission that can never be completely accomplished—but one that should never escape from our attention. The important implication of this argument is that a theory should be testable (or more accurately, the hypotheses derived from a theory should be testable) to be able to evaluate its validity.

It is, of course, not easy to characterize one particular theory as especially true. But to give a classic example, it seems fair to conclude that some general principles of cognitive dissonance theory are quite accurate. As discussed by Joel Cooper (2012), this theory has received relatively persuasive support over the years and has "survived" a long period of critical testing during which it was evaluated against various alternative models. It would be inappropriate to conclude that cognitive dissonance theory was the clear winner in all empirical tests, but even those who do not especially like the theory would probably agree that cognitive dissonance theory received confirmation rather than disconfirmation. As noted by Cooper, "Although only a few of the most ardent skeptics still doubt the existence of dissonance, the precise mechanism continues to be elusive" (p. 394). Indeed, research has been devoted to identifying the specific conditions under which the motivated process of cognitive dissonance was activated and other critical

issues, such as how exactly the self was involved as a standard in the assessment of inconsistency among cognitions. As such, there is still much to learn about the mechanics of dissonance reduction and the precise (social) circumstances, real or imagined, under which tendencies toward dissonance reduction might be especially strong. But importantly, the central notion that people exhibit a tendency to reduce states of dissonance remained relatively unchallenged. As such, the central aspects of the theory of cognitive dissonance have survived numerous critical tests and hence may be considered quite accurate.

Of course, there are many other examples of theories, or central ideas underlying a particular theory (or domain of theories), that seem to capture the truth. For example, there is little doubt that central aspects of relationships that help gratify the need to belong, strengthen secure attachment, or provide social support are essential to psychological health and functioning. This notion is central in theories of need-to-belong, attachment, and affiliation.

Although it is not difficult to list examples of theories that have received a fair amount of support, it is much more of a challenge to bring to mind examples of theories in social psychology that are demonstrated to be largely inaccurate—simply wrong. To be sure, there have been attempts to conduct critical experiments. For example, there have been experiments that were designed to provide critical tests, such as cognitive dissonance theory against self-perception theory (Bem, 1967). However, these experiments did not yield evidence against cognitive dissonance theory and did not falsify self-perception theory either. Likewise, a debate about the existence of altruistic motivation, when activated through empathy induction procedures, did not falsify either the position that altruism does provide a motive that helps explain empathy-based helping (e.g., Batson, 1997; Batson, Dyck, Brandt, Batson, & Powell, 1988) or the position that the pursuit of self-reward alone (without assuming altruistic motivation) could parsimoniously account for empathy-based helping (Cialdini, Brown, Lewis, Luce, & Neuberg, 1997). Indeed, it is not easy to think of theories in social psychology that are clearly falsified. As it stands now, it seems that aspects of theories of social psychology are testable; however, the actual tests often yield confirmation (or not) but hardly ever yield falsification. As I will discuss later, it is possible to provide examples of theories that have not made much progress, but it is not so easy to provide examples of theories that have been demonstrated to be largely inaccurate. Indeed, the pursuit of truth, along with testability, is enhanced by providing evidence not only for what is accurate but also for that what is inaccurate–even if the pursuit of the latter may be far more challenging.

It should be clear that truth represents an important ideal to theory construction. Yet this is not to imply that each and every researcher or theorists is interested in finding "the truth and nothing but the truth." Theorists might (unconsciously or not) deviate from the pursuit of truth because

they (a) have invested in a particular framework so that it might be "cost-effective" to conform to (and not undermine) one's constellation of beliefs and (expert) knowledge (one has "too much invested to quit"), (b) might be slightly oriented toward ideological or personal goals that they like to see supported (e.g., people must not be portrayed as "bad"), or (c) have a strong motivation to provide a theory that is counterintuitive so that it has "appeal" (and so that it extends "common sense" or what grandparents might already know). Thus, although there may be pragmatics that are conflicting with the truth, truth is nevertheless an "ideal" or a goal to pursue in theory construction. It is most essential, in my view, for evaluating the strengths and limitations of a particular theory.

Ideal 2: Abstraction

A theory should be the result of *Abstraction*, in that the particulars (e.g., phenomena, events) need to be described in terms of the general (concepts, assumptions, principles). Although a particular phenomenon may be interesting in and of itself, one needs a theory to understand the psychological principles that underlie the phenomenon—the same principles that underlie other seemingly disparate phenomena as well. A theory should pursue as high a level of abstraction as possible, to transcend particular observations and link them at a deeper (i.e., more abstract) level to other observations. Thus, theories focus on the heart of the matter in terms of understanding and insight, as they deal with essential causal mechanisms underlying observed effects.

Typically, social psychology generalizes across different categories of people (e.g., the young and the mature) and across specific contexts (e.g., at home and at work). In addition to behavior and social interaction, social psychology tends to capture cognitive, affective, motivational, and (increasingly) psycho-physiological processes. Perhaps for those reasons, it is social psychology's natural inclination to "go abstract"—and to be theoretically oriented toward abstract knowledge that generalizes across categories of people and specific contexts, and specific processes. The fact that people might find some of that theorizing easy to recognize ("we knew it all along") is therefore not too surprising (e.g., Roese & Olson, 1996; Stahlberg & Maass, 1998). What is more, many people probably find most abstract knowledge, even if it is far from the truth, quite easy to imagine. After all, abstract knowledge may lead to a search for information that seeks assimilation or verification, whereas concrete knowledge may lead to a search for contrasting or disconfirming information. Yet, the fact that the general is easier to "recognize" than the specific is, of course, no strong argument against formalizing our knowledge in terms of general principles rather than the specifics.

Although most social-psychological theories have abstract features, theories differ a fair amount in terms of abstractness. Examples of abstract theoretical frameworks are the so-called dual-process theories, which postulate two processes (or routes, or systems) in how people process social information (e.g., Eagly & Chaiken, 1993; Petty & Cacioppo, 1986; Strack & Deutsch, 2004). The twofold nature of processing is referred to as peripheral versus central routes, heuristic versus systematic processing, or impulsive versus reflective systems by various theorists, and help explain not only how people process information but also how people might reach conclusions about, for example, information regarding specific behavior enacted by members from majority groups or (ethnic) minority groups (e.g., the stereotyping of ethnic minorities). Although theorists have debated whether these processes necessarily need to be conceptualized as two distinct processes (rather than one single process; Kruglanski & Thompson, 1999), there is little doubt that these theories advance abstract frameworks for understanding social information processing. The theories have suggested diverse hypotheses that are tested in nearly three decades of research. As such, these are examples of abstract theories that have proven to be translatable to specific hypotheses and empirical tests.

Other examples of abstract theorizing include theories that focus on a broad distinction between goals, such as approach and avoidance processes, or promotion and prevention systems (e.g., Carver & Scheier, 1998, 2012; Higgins, 2001, 2012); a broad framework for the principles involved in knowledge formation and change (Kruglanski, 2012); or a broad scheme or taxonomy of situations that delineate the key situational features that might activate particular motives, cognitions, or feelings (Kelley et al., 2003; Van Lange & Rusbult, 2012).

Are there examples of theories that do not necessarily excel in abstraction? When addressing this question, it may be useful to outline that the ideal of abstraction does not always mean that "more is better" (which may well be another reason to talk about "ideals" rather than "criteria"). There are abstract theories that are so general and recognizable that almost anybody finds reason and evidence to subscribe to it. If someone advances the theory that people tend to welcome gains (or positive outcomes) and want to avoid costs (or negative outcomes), the theory may not be able to provide predictions for specific forms of social behavior, for example, whether people might differentially weigh gains and losses or how people may weigh the outcomes for others in situations of interdependence. That is, the theory seems so abstract that it loses explanatory power for important domains of situations that are relevant to social psychology. At the same time, an abstract principle may have heuristic value in that it might inspire further theorizing, such as whether the promotion of gains and the prevention of costs might evoke different preferences or motives (Higgins, 2012; Kahneman & Tversky, 1979). Or, the abstract principle may help generate theories that seek to understand not only preferences for one's own outcomes but also social preferences, that is, the preferences and

processes involved in taking account of other people's outcomes (Kelley et al., 2003).

At the other extreme, there are also theories in social psychology that seem quite concrete, for example, because they are relevant to a particular domain of situation or to a specific emotion. As a case in point, the well-known empathy–altruism model is a framework that is largely relevant to empathy, an emotion that is very important to understanding social behavior in specific contexts. Although Batson's empathy–altruism model (Batson, 2011) addresses the very abstract and basic question about the existence of altruism, in the final analysis, the logic speaks primarily to contexts in which there is some activation of empathy. Basically, the model advances the argument that the concern with another person's welfare (above and beyond a concern with one's own welfare) is real and energized as motive to affect behavior when the emotion of empathy is (strongly) activated, often through information about another person's suffering. Batson is a very careful scientist, and so he reserves the name "model" rather than "theory" for his important framework relevant to understanding the roots of altruism. Moreover, because he is a very creative scientist as well, he was able to translate many of these ideas into critical experiments, which over time persuaded many people in the field about the existence of altruism, including authors of influential textbooks.

Ideal 3: Progress

Any new theory is expected to make a contribution beyond what was previously known. It should improve or expand our explication of a given realm of phenomena representing the ideal of progress. It should replace myths with knowledge, and it should add to existing knowledge enlarging the scope of our understanding. Ideally then, newer theories relate to past theories, replacing inaccurate with accurate principles or complementing a predecessor theory with new principles that had not previously been identified. Progress can also be obtained when new theories overthrow older ones, or when a new theory provides a completely new perspective on a set of phenomena that provides greater explanatory power than recognized by older theories.

Science is unlikely to progress if theories are not subject to refinement through a process of sharpening and empirical testing. In this sense, the principle of progress is closely linked with the principle of truth, as the theoretical refinements and modifications are in the service of ever greater validity and precision. Because truth is an important regulatory (though largely unattainable) ideal of a theory, a theory is often subject to refinement and precision, for example, by outlining the situational domains in which the hypotheses derived from the theory should be supported.

In addition, a theory often inspires new ways of thinking, because it serves (implicitly, at least) as a tool for theorists and researchers to see connections and relationships that would not have been evident on the basis of data alone

(see Shaw & Costanzo, 1982). Finally, a theory is often an inspiration for new research questions, along with new tools, methodologies, and paradigms (Fiedler, 2004; Fiske, 2004). As such, theories function as bridges to the past (the past findings a theory accounts for) and the future (future research and findings inspired by the theory). Because the implications of a theory inspire new predictions that in turn inspire new research to test them, a theory is a driving force behind new empirical discoveries (Higgins, 2004).

Clearly, many examples could be given about progress. Yet, progress is often evaluated in terms of a relative (vs. absolute) standard, in that any contribution is expected to make some (indeed, absolute) progress. The question here is about *how much* progress, hence calling for a relative standard. Of course, some theories make relatively little progress for a simple reason: They have not stimulated much research. An example might be Heider's (1958) balance theory. It is not that the theory is far from the truth. In addition, the theory clearly has abstract features (see Insko, 2012). At the time, balance theory might have inspired research that center on the general notion of cognitive consistency, along with, for example, congruity theory (Osgood & Tannenbaum, 1955) and theory of cognitive dissonance (Festinger, 1957). But over the last three decades, there is very little empirical attention for testing predictions specifically derived from balance theory, and therefore balance theory did not make considerable progress during those years. Because it is a theory that was not disconfirmed in any major way, it should still be considered a classic theory in social psychology. It is nice to see that the notion of balance, as a principle of seeking cognitive consistency or even as a principle for predicting interpersonal liking, is often covered in major textbooks of social psychology. After all, truth is independent of progress, and it is possible that some principles of balance theory—given that they have not been demonstrated to be inaccurate—might enter the scientific field again, but then be tested with more innovative tools and methods. For example, it is possible that areas of the brain that are associated with reward are linked to subtle representations and balance in thoughts and liking (e.g., that my close friend's enemy is also not liked by the self).

In contrast, some classic theories have promoted considerable progress, in part because they stimulated considerable research. An insightful example is social comparison theory. Originally, this theory focused on self-evaluation (the motive to understand oneself in a relatively accurate manner) as a prime motive (Festinger, 1954). Because this particular motive was considered important to the seeking and processing of information about others, researchers studying social comparison not only provided validation of self-evaluation motives but also identified several other important motives, such as self-protection (the motive to protect oneself to information that is threatening to important aspects of the self), self-enhancement (the motive to enhance important aspects of the self by attending to information about others), and self-improvement (the motive to

improve oneself on a particular skill or ability, Wood, 1989; for a recent overview, see Alicke & Sedikides, 2011). In addition, the theory has become more comprehensive in that contemporary research illuminates the implicit processes that might underlie social comparison (Suls & Wheeler, 2012) and demonstrates its utility in terms of understanding how people cope with successes and misfortunes in life (such as life-threatening diseases, divorce, unemployment) and how people might be able to retain self-esteem and happiness (e.g., Taylor & Brown, 1988).

Ideal 4: Applicability

Ideally, a psychological theory should speak to many events and issues in everyday life. It should be applicable to real-world concerns and afford interventions aimed to alter the course of events in desirable ways. As Edward E. Jones (1986) aptly remarked, "The future of social psychology is assured not only by the vital importance of its subject matter but also by its unique conceptual and methodological strengths that permit the identification of underlying processes in *everyday social life*" (p. 100, italics added). Just as scientific progress is closely linked to the quest for truth, a theory's applicability is closely linked to the precept of abstraction. In other words, the more abstract the theory, the broader the range of situations to which it applies. Of course, theoretical breath in and of itself is not tantamount to application, and an appreciable measure of ingenuity is needed to *translate* a theory's implications into specific procedures and interventions of practical value.

In fact, despite the intimate relation between theory and application, the two have been often juxtaposed with each other and viewed as fundamentally disparate—theory versus practice. Theory has been often associated with logic, deduction, and knowledge ("knowing"), whereas application has been often associated with intuition, induction, and implementation ("doing"). Perhaps Kurt Lewin's famous dictum, "Nothing is as practical as a good theory," received so much attention because it was surprising in light of the general tendency to view application as the antithesis of theorizing. Nonetheless, the notion of "translational research"' highlights the intimate connection between theory and application, and encourages theoreticians (often by means of funding opportunities) to descend from the "Olympus of pure thought" and explore the possible contribution of their ideas to understanding and solving the multitude of real-world problems to which they pertain. Although theories are often seen as tools for understanding phenomena we can observe in the real world, it is also true that those phenomena in the real world might inform theory. Just as the murder of Kitty Genovese has "inspired" research on the specific mechanisms underlying the bystander effect (Darley & Latané, 1968), so may a series of phenomena in the real world inform broad theorizing. Thus, information about important societal phenomena may help theory construction.

In the following, rather than limiting ourselves to one or two theories, we will illustrate applicability of several theories of social psychology and primarily do so by discussing various families of theories that share one basic principle. One classic example of a model or theory that has received a good deal of attention from practitioners and policy makers are theories of attitudes, such as the theory of reasoned action (Fishbein & Ajzen, 2010) and the theory of planned behavior (Ajzen, 2012). Rooted in classic theories of attitudes, the theory of planned behavior emphasizes attitudes, subjective norms, and behavioral control as three powerful influences on intentions and behavior. This theory has been used to predict behaviors as diverse as donating blood, conserving energy, and practicing safer sex (Ajzen, 2012). Its utility was the fact that the classic model was well-formulated, in that it not only made a distinction between attitudes (broadly speaking, evaluations) and beliefs (verifiable thoughts) but also outlined normative influences (what relevant others think, and how strongly we wish to comply to thoughts of significant others) and later, partially based on Bandura's (1997) theorizing, the focus on perceived self-efficacy (i.e., the feeling or belief that one can do it).

Another family of theories focuses on social identity and categorization processes involving self and categories of others. For example, social identity theory (Tajfel & Turner, 1986) advances the idea that, to the extent that individuals internalize a group membership as a meaningful aspect of their self-concept, they will strive to make favorable comparisons between this group and relevant outgroups, to achieve or maintain a positive social identity. This principle is important to understanding what it is that people might identify with groups or even categories, and as such is relevant to understanding societal phenomena as diverse as commitment and loyalty to football clubs, political parties, or organizations, as well as to tendencies to negatively appraise outgroups, view members of outgroups as "all the same," and stereotype and discriminate against members of other groups (Ellemers & Haslam, 2012; see also Gaertner & Dovidio, 2000; Hogg & Abrams, 1993; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Thus, the general notion that people might gain desired outcomes from membership in a group (e.g., status, self-esteem) is important to many facets of everyday life, including commitment to groups and organizations, discrimination, and intergroup conflict.

As in some other fields and disciplines, various theories in social psychology focus on conflict and cooperation, justice, and interdependence. One key assumption that is shared by these theories is that the pursuit of (material) self-interest, although powerful, is not sufficient to account for human behavior in several social contexts (e.g., Deutsch, 2012; Tyler, 2012; Van Lange & Joireman, 2008). Justice theories emphasize the relevance of equality and equity, whereas interdependence theories emphasize not only egalitarianism but also the relevance of concern for others, the desire to outperform others (competition), or concern with longer

term outcomes through social interaction (reciprocity). Identification of these different social motives is important because many people believe that self-interest is the primary or even only motive underlying human behavior, as suggested by research on the "myth of self-interest" (e.g., Miller, 1999; see also Vuolevi & Van Lange, 2010). Clearly, recognizing such social motives is important to understanding social interactions in domains that cover the entire spectrum of close relationships, interactions among colleagues, as well as those relevant to "doing business." For example, salary increases are often overrated as a tool to enhance motivation in employees in organizations. People appear to link their own salaries strongly to those of others, and evaluate salaries in terms of equity and fairness. In addition, salary is not the only concern that people have. For some, it may matter even more whether they are included in decision making, whether their voices are heard, and more generally, whether they regard the procedures that organizations use for making important decisions as fair or unfair (procedural justice, Tyler & Lind, 1992).

Various theories in psychology, including social psychology, emphasize the key role of affiliation and attachment needs as a fundamental human motivation as well as the needs of maintaining self-esteem and interpersonal acceptance (e.g., Baumeister & Leary, 1995; Leary, 2006, 2012; Shaver & Mikulincer, 2012). What is important about these theories is that a relatively general need or motive (the need to belong, the need to be socially accepted or approved), which should not be considered revolutionary or controversial, is so essential to understanding many micro-level phenomena. Social exclusion may make people feel not only excluded and less appreciated but also less intelligent and, depending on whether they might be included again, more aggressive or more prosocial to those who have excluded them (Baumeister, 2012; Richman & Leary, 2009; Williams, 2009). Clearly, such insights are essential to social issues such as bullying in communities, at work, or in schools. An interesting case in point is that these insights may help us better understand the causality between constructs. It is often believed that those excluded are aggressive because they are dispositionally aggressive (because they are excluded), yet this impressive literature adds the important insight that the mere fact of social exclusion can trigger strong and perhaps enduring forms of aggression.

As noted, most social-psychological theories can be quite favorably evaluated in terms of applicability. For example, evolutionary theories of social behavior (Kenrick, 2012) are increasingly applied in domains of marketing, consumption, and helping. An interesting case in point is the fact that environmentally friendly choices might be promoted by an increasing awareness of reputational benefits ("going green to be seen"; Griskevicius, Tybur, & Van den Bergh, 2010). Implications of regulatory focus theory (Higgins, 2012), which advances the distinction between promotion and prevention systems, are central to a wide variety of behaviors including issues relevant to organizations, such as goal setting, and motivation and performance, or issues linked to stereotyping and discrimination. Perhaps the most compelling application is the basic relevance of dealing with failure in promotion domains (such as phenomena related to depression) and failure in prevention domains (such as phenomena related to anxiety disorder), and it should be clear that such issues are essential to clinical practice and intervention based on the distinction between promotion and prevention system (see Higgins, 2012).

This list of applicable theories can indeed be very long. It is easy to generate intriguing applications of social comparison theory (e.g., in domains of performance, relationships, or coping with health issues, Suls & Wheeler, 2012; for a classic article, see Taylor, 1983), lay epistemic theory (e.g., in domains of impression formation, decision making, and political psychology, Kruglanski, 2012; for an overview of political beliefs and attitudes, see Jost, Glaser, Kruglanski, & Sulloway, 2003), self-determination theory (in domains of motivation, education, and management, Deci & Ryan, 2012; for an overview of theory and applications, see Ryan & Deci, 2000), or terror management theory (e.g., in domains of affiliation, self-esteem, and stereotyping, Greenberg & Arndt, 2012 (see references); for one of its seminal demonstrations, see Greenberg et al., 1990).

At the same time, I should note that the applicability of several theories of social psychology is constrained by the fact that these theories focus on the change in the here and now, rather than in the future. For example, numerous tests of theories of social psychology rely on experimental research in laboratory that often entail a brief time horizon. These features of experimental procedures tend to influence the nature of theories within social psychology. For example, there is a strong emphasis on accessibility or activation of thoughts, feelings, and motives, thereby focusing on priming and complementary techniques. There is little doubt that these lines of research have yielded a wealth of knowledge, and they have enriched theorizing about social influence by emphasizing the importance of peripheral cues, implicit attitudes, and automaticity in behavior. At the same time, it seems equally true that these techniques provide primarily insight into short-term influences, typically lasting for about an hour or less, with little insight into long-term influences.

From an applicability perspective, the drawback is such research activities do not inform or inspire several theories into conceptualizing changes in cognitions, affect, and behavior that are maintained over relatively longer periods, or how aspects of the social environment might yield relatively enduring effects on human behavior. For example, if activation of mortality underlies many psychological processes in an enduring manner, then perhaps those who cope with mortality on a regular basis (e.g., nurses at hospitals) might be more prone to develop and maintain beliefs that are predicted by terror management theory. Perhaps other aspects of situations that are omnipresent in everyday life

may not be part of many social psychology theories. For example, because experimental research focuses on random assignment to conditions, one issue that is quite common in everyday life is that people often seek out situations or avoid situations. So more often than not, there is no random assignment outside of the laboratory. Theories that implicitly focus on random assignment might sometimes overestimate the probability of success of some theory-based implementations. For example, people who are notoriously bad at self-regulation might often select situations or engage in behavior that bring them in a state that undermines self-regulatory capacity (e.g., seek out situations that involve drinking).

Despite the limitations outlined above, theories of social psychology seem generally quite relevant and applicable. After all, most of human behavior takes place in a social context, where it matters how we feel or think about ourselves and about others, how others might think about us, and how such feelings and beliefs shape our behavior and social interactions. Human thought, affect, and behavior are often oriented toward desirable goals, or away from threats or other objects that trigger prevention. But all too often, such goals are social in nature. To illustrate, some years ago in a seminar, an expert on decision making was asked by a student whether he could give an example of a decision that does not affect the well-being of others. After some period of silence, his response was "Well, . . . eh, . . . yes, eh, . . . how about the decision what to wear on a particular day?" The extended response latency as well as the example itself illustrates that it is exceptionally difficult to think of decisions that do not have social or interpersonal consequences. Even a decision as small as what clothes we decide to wear might importantly affect how other people see us or how we think that others might see us. Clearly, these thoughts are inherently social, as it is likely that they affect our behavior and social interactions.

Recommendations for Effective Theory Construction and Development

I have conceptualized theory construction in terms of four ideals, namely, *Truth, Abstraction, Progress*, and *Applicability*. These may serve as standards for critically evaluating a theory (TAPAS). How may they come about? Perhaps more important, "How could these ideals be best pursued?" I discuss these questions for truth, abstraction, progress, and applicability.

Truth

The ideals of truth (and testability) are clearly used when scientists translate ideas into research, and especially, when they seek to translate hypotheses derived from a particular theory into operational procedures, including experimental design and measurement. As noted earlier, there is indeed a close link between truth and testability and suitable methodology. When a concrete hypothesis derived from a theory is tested in research, people might ask the question of confounding variables in our manipulations in experimental research, the influence of third variables in survey research, and the validity of the procedures in any type of research. That is, any empirical study is evaluated in terms of the accuracy of the conclusions in light of the available data.

The desire for more studies, as many reviewers may often suggest or recommend, is also triggered by some doubts about whether the findings reflect the truth (or can be accounted for by an alternative explanation), for example, whether the same findings are also obtained under slightly different circumstances in which alternative mechanisms could not affect the results. Of course, a fair amount of scientific inspiration comes from designing new experiments to uncover the truth. Are conservatives really less prone than liberals to think about political issues? Are social rewards more effective than social punishments in promoting cooperation? Does an increase in bystanders always undermine helping? These are examples of questions that have a true–false answer to them, yet are often so intricate that they inspire considerable research.

In the last two decades, truth is increasingly evaluated by using meta-analytical techniques. Many meta-analyses (and narrative analyses as well) tend to provide converging evidence on a particular conclusion, for example, political conservatism seems indeed motivated by needs that support resistance to change, such as anxiety and threat (Jost et al., 2003). In addition, reward and punishment promote cooperation, and to about the same extent (Balliet, Mulder, & Van Lange, 2011). But there are also meta-analyses that present a twist to the truth. An interesting case in point is a recent meta-analysis by Fisher et al. (2011) that addresses the bystander effect—the phenomenon that people are less likely to provide help in emergency situations as the number of bystanders increase (Darley & Latané, 1968). Rather than demonstrating that robustness of the phenomenon as such, the meta-analysis highlighted the idea that sometimes people are *more* likely to help as the number of bystanders increases, perhaps because the reputational benefits are larger with a greater number of people around (for recent evidence, see Van Bommel, Van Prooijen, Elffers, & Van Lange, in press).

So, what is to be recommended from the perspective of truth? Clearly, a critical approach to the internal validity of empirical research is strongly recommended—but this is hardly a controversial point. I also think that a rationale for "the multiple-study approach," so common in various psychological journals, is to be found in the truth. In that respect, I should note that uncovering the truth is a collective enterprise, and so there are also arguments against multiple-study approaches if researchers would devote much attention to replication studies. For example, one can make the point that the same data observed in different laboratories (with slightly

different procedures, samples, traditions) are more likely to reflect the truth than the same data observed in the same laboratory. Indeed, a meta-analytic approach is very useful for evaluating the accuracy of particular scientific conclusions, especially if the field cooperates in sharing published and unpublished data. The technique is popular for a good reason: It serves the dual purpose of evaluating the validity of a scientific conclusion (general conclusion) and the degree to which contextual or person-related variables may "corner" the generality of that conclusion by showing exceptions to, and moderators of, a general conclusion.

Another point may be made from the ideals of truth. One might argue, as one reader of earlier version of this article did, that theory construction may sometimes be delayed until there is enough, high-quality data to provide assurance that the theory is on the right track. If true, this recommendation may have further implications. For example, it might be important to conduct literature research with an explicit focus on research findings published during the early decades of social psychology. At that time, even before the so-called cognitive revolution, studies might have been designed with quite a different theoretical perspective or set of assumptions. Hence, some of those early findings may be quite helpful to theory construction at present, because they provide the kind of data—obtained during a different "*Zeitgeist*"— that is especially likely to challenge the validity of a more contemporary theory. Indeed, bridges to the past are important to help evaluate the truth of a theory, in that they might provide another critical test (Kruglanski & Stroebe, 2012).

The same logic applies to bridging with insights and principles obtained in other scientific field and disciplines, and there are numerous examples illustrating that research findings observed in other disciplines are helpful to evaluating the truth of a theory (see Van Lange, 2006). An interesting case in point is the insight that empathy may often be automatically activated, as suggested by evidence from social neuroscience and animal research (e.g., Preston & De Waal, 2002), whereas previous models (and experimental procedures) assumed that explicit instructions, along with the observation of somebody in need, are needed to activate empathy in the laboratory (Batson, 2011; see also Van Lange, 2008).

Abstraction

As noted earlier, most theorizing in social psychology takes the form of middle-range theories. Nevertheless, several theories in social psychology would pass a test of abstraction. One important challenge to abstraction, especially to young scientists, is that broad theorizing does not seem to get the "payoff" (in terms of publications, grants, career opportunities, and the like) that empirical publications might bring. The report of a new study on a new phenomenon using new tools often attracts a greater audience than a thorough theoretical analysis, and this may be more true for young scientists whose names may not attract the kind of audience that more established scientists attract. (The fact that phenomena receive greater attention than a theoretical analysis does not always mean that articles describing phenomena are more strongly cited in the literature. If anything, journals focusing on theory tend to have higher impact factors than journals focusing on empirical phenomena. One reason may well be that a theoretical analysis often provides a more comprehensive review of the literature than does an empirical article, and so a citation to a theoretical analysis is more "inclusive" or "comprehensive" than a citation to an article focusing on one particular phenomenon.)

The drawback, from the ideal of abstraction, is that relatively little intellectual effort and time is devoted to broad theorizing. Some of the classic theories in social psychology, such as balance theory (Heider, 1958), cognitive dissonance theory (Festinger, 1957), or interdependence theory (Thibaut & Kelley, 1959) were presented in books, in which several chapters were devoted to outlining the principles, discussing some data as illustration material, thereby working toward the conceptual formulation and "logic" of the theory. (Incidentally, this "book approach" was also quite typical of other theories in other disciplines, such as game theory in economics, decision making, and mathematics, Luce & Raiffa, 1957, or social exchange theory in sociology, Blau, 1964; Homans, 1961.) Such efforts were devoted to broad theorizing by people in their early-to-mid careers in a postwar era in which the scientific disciplines were young and in which data collection was probably more labor intensive than it is now. For example, the social influence study by Festinger, Schachter, and Back (1950), the Robbers' Cave study by Sherif, Harvey, White, Hood, and Sherif (1961), or the obedience studies by Milgram (1963) were all labor-intense projects.

So, what is to be recommended from the perspective of abstraction? First and foremost, abstract theorizing is a matter of motivation and skill. The latter would suggest the plea for designing courses aimed at teaching theoretical skills. A good start would, of course, be to critically review and discuss articles in which scientists launch a new theory. For example, theoretical journal articles, and carefully selected theory-oriented book chapters, may give students a feel for how one presents a theory and a deeper understanding of the conceptual steps that one takes to explain the specific (events, phenomena) in terms of abstract theoretical principles. As outlined by Wyer (2004), theorizing may often involve at least three major steps, such as (a) the development of a theoretical perspective, (b) the identification of a specific problem, and (c) the development of a theory to address the problem.

Relevant to the development of a theoretical perspective, it seems important "to make the implicit explicit." For example, a theory is often rooted in, or built on, a set of general assumptions. As scientists, when we develop a theoretical perspective, we do use assumptions but may not always be aware of them. After all, assumptions are often quite abstract,

and may therefore escape from our attention, and therefore tend to remain "implicit" in our minds. However, any good theory should explicate the broader assumptions underlying their theoretical perspective—to obtain a sufficient level of abstraction. Readers of a theory would like to know about the origins and foundations of a theory: They should be able to know "where the theory comes from" and "what the theory's key assumptions are."

The identification of a specific problem underlines the notion that the "problem" needs to be clearly articulated. Indeed, theory often deals with a problem (or a set of inter-related questions), and this may already be an important exercise by itself. Knowing exactly which problem one seeks to address, where the problem starts and where it ends (the boundaries), and how to present it are crucial to any well-articulated theory. These issues are all the more important when one connects the specific problem to the present literature, to the literature outside of one's own field, or to the early literature on the problem. Readers of a theory would like to know more about the contents of the problem, including the events or phenomena that it seeks to address: They should be able to know "what the theory is about" and "what it seeks to explain."

After the specific problem has been well-defined, a final step is to link the specific problem to the new theory that one has developed. The development of a theory should be coherent and logical (see Higgins, 2004), and it should be effective—indeed, parsimonious—in accounting for the problem that one had identified. Abstraction is important to obtaining some parsimony, in that the ideal should be to explain many events and phenomena in terms of a relatively small number of higher level constructs. The theory should also outline what is new about the theory, to persuade others of progress, which in turn may inspire new research. In addition, the theory should, where possible, reach out to applications, including ones that might be less obvious, to persuade readers of its applicability. Readers of a theory would like to know more about how the abstract theoretical principles help explain the problem that it seeks to address: They should be able to know not only "what problem the theory actually explains" but also "how it explains the problem."

Clearly, each of the three steps described above call for a specific set of skills, including the ability to generalize from the concrete (data, phenomena) to the abstract theoretical principles, the ability to think in terms of logical schemes such as complex issues of causality, as well as the ability to formulate these issues in a clear, coherent, and concise manner. These tasks require considerable skill that, so I assume, can be learned through effective training. Hence, I recommend that PhD programs devote a course, or a substantial part of a course, to theory construction that covers theory about theory in psychological science (metatheory) and various theoretical skills.

Second, it is exceptionally gratifying to see the development of journals that aim to discuss theory from a more abstract point of view. Examples are *Personality and Social Psychology Review* and, more recently, *Perspectives on Psychological Science*. It is equally gratifying to see that these journals do exceptionally well in terms of visibility and scientific impact because, in the final analysis, such statistics may help remove (understandable) pragmatic barriers to devoting time to abstract theorizing.

Third, grant panels often evaluate the novel aspects of a particular proposal in terms of ideas (Is it new?) and methods (Are the techniques cutting-edge?). These are important considerations, but abstraction is a clearly another ideal: Has the proposal the ambition to contribute to or build an abstract theory or are the ambitions at the level of demonstrating phenomena? To illustrate, it is one thing to study the neuroscientific underpinning of particular emotions (e.g., empathy) but quite another to provide a rationale for how the neuroscience of empathy contributes to general theory of emotion, free will, or prosocial behavior.

Progress

Although it is not easy to assess progress by any objective standard, psychological science is making considerable progress. But the key question is how can the field enhance progress? Considerable progress might be made if the researchers develop some level of consensus about the definitions of concepts and about the validity of research paradigms. Continuing debate at the level of definition and conceptualization make progress difficult (see also Higgins, 1992). Some of these debates may be seen in commentaries to target articles and rejoinders to those commentaries. Often the authors do not fully agree about the conceptual meaning or status of a particular construct. Of course, a lack of agreement about the validity of the methodology for testing hypotheses tends to make it harder to make progress, unless they develop an improved paradigm that does yield agreement among many scientists in a particular field. In what ways can theorists work together and make more progress?

After conveying pessimism about the ways in which controversies are played out (e.g., in the reply–rejoinder formats), Nobel Prize laureate Kahneman (2003) decided to do something about it by suggesting a procedure of *adversarial collaboration*. This is defined as "a good-faith effort to conduct debates by carrying out joint research—in some cases an agreed-on arbiter may be needed to lead the project and collect the data" (Kahneman, 2003, p. 729). Kahneman reported anecdotal evidence that such collaboration (the precise procedures are summarized in Mellers, Hertwig, & Kahneman, 2001) yielded new facts that were accepted by all, narrowed differences in opinion, and fostered considerable mutual respect. The challenge is, in my view, to translate differences in basic beliefs into mutually agreed-on research, which should be an important step toward cumulative science to make progress. In particular, adversarial collaboration should energize researchers to address major

questions, test major theories, and use agreed-on and complementary methods. The rules of the "game" should be discussed and explicated before research begins, and once these issues are settled, the only thing that can remain is the critical test. Such articles are still very rare, but they are an important route to pursue truth and by doing so make progress.

Thus, it is important to reach consensus about definitions and research paradigms to make progress. Adversarial collaboration holds much promise in that it should help researchers to establish consensus at the level of concept or the method. Likewise, from the perspective of progress, integrative review articles can also serve the function of enhancing consensus by providing a clear and widely accepted definition, along with an overview of the research paradigms that can be used to test hypotheses.

From another perspective, one might ask, "Are there any (other) threats to progress?" It is possible, if not plausible, that sometimes progress is constrained by the fact that scientists, perhaps even more so in their role of reviewers, have a pronounced tendency or desire to see coherence in science. If true, this has the implication that scientists want to see how novel theoretical contributions might be able to explain published findings (that sometimes might be "incidental" findings that are not necessarily replicable). Moreover, scientists might ask critical questions about the specific ways in which novel theoretical contributions should be "reconciled" with more classic, well-established frameworks. Clearly, it takes not only time but also an "open mind" from reviewers, editors, and the field at large for a novel theoretical contribution to be accepted as one that replaces or complements "past knowledge" that has been largely accepted as "mainstream knowledge" by the field. As such, it may be important for reviewers and editors to emphasize "novelty" and "magnitude of contribution to past theorizing" in theory-oriented articles, just as the field emphasizes these criteria in the review process of empirical articles. After all, it is possible that in accepting new conclusions, "concrete data" may speak louder than "abstract ideas," which is why an open mind might be especially important to evaluating new theoretical ideas.

Applicability

Theories differ considerably in their applicability. Sometimes theorists may not fully recognize the potential of their theory to speak to some social issue. For example, Carver and Scheier (2012) described evaluating the applicability of their theory as "a particular difficult task" (p. 521), which is interesting because their model of behavioral self-regulation has received considerable attention from researchers and practitioners who seek to understand various social issues, especially to enhance effective coping with various health risks and problems (e.g., Carver & Scheier, 1998). But why do some theories excel in applicability, and other theories less so? How could one promote the applicability of a theory?

One broad factor that strengthens the applicability of a theory is that it provides explanatory insight especially in one particular important personal or societal goals, such as health maintenance and promotion (e.g., model behavior self-regulation, Carver & Scheier, 2012), training and education (e.g., attribution theory of motivation, Weiner, 2012), or discrimination and intergroup relations (e.g., social identity theory, Ellemers & Haslam, 2012; Tajfel &Turner, 1986). Most theories are relevant to one or more domains, including the ones listed above.

Another reason why many theories are applicable is because they focus on a broad framework for understanding social information processing (e.g., the various dual-process theories, Eagly & Chaiken, 1993; Petty & Cacioppo, 1986; Strack & Deutsch, 2004), evaluation (Cacioppo, Berntson, Norris, & Gollan, 2012), motivation (e.g., self-determination theory, Deci & Ryan, 2012; regulatory focus theory, Higgins, 2012; social comparison theory, Suls & Wheeler, 2012), needs (e.g., attachment theory, P. R. Shaver & Mikulincer, 2012; need-to-belong theory, Baumeister & Leary, 1995; terror management theory, Greenberg & Arndt, 2012), or differences in situations (e.g., theory of cooperation-competition, Deutsch, 2012; interdependence theory, Kelley et al., 2003; Van Lange & Rusbult, 2012).

The broader applications and implications of theories of social psychology are not always explicated (see also Buunk & Van Vugt, 2007). For example, journal articles often do not directly outline the domains of situations in which a psychological process is likely to be activated or how it may help us understand some societal issue. At the same time, applicability is important to theorizing. One obvious reason is that applicability is often intimated by the plea for a body of psychological work to have "broader impact," and it is deemed an important criterion for the funding of research grants at federal granting agencies in the United States (like the National Science Foundation and the National Institutes of Health) because it is understood that scientific knowledge should have societal benefits. From this perspective, there is an *instrumental gain* in pursuing applicability.

But the gains of applicability are much more substantial and transcend the pragmatics of science. Apart from the fact that applicability strengthens the overall impact of a theory, it is also true that applicability yields *knowledge gain*. After all, a theory may be revised and improved by analyzing it in terms of its broader implications for the workings in real life. An excellent case in point is the enormous growth in breadth and applicability in self-control theory (Mischel, 2012). Mischel's original delay of gratification studies, also known as the "marshmallow studies," revealed pronounced differences between people, with some preferring one marshmallow (or one pretzel sick, or one cookie, which was actually more often used than marshmallows, Mischel, 2012) now or two of those treats some time later (e.g., 15 min later). Children could ring a bell if they wanted to eat the one marshmallow and forfeit the second.

The amazing finding was that the measure of how long children could delay the gratification and not ring the bell (in seconds) predicted long-term outcomes. Relative to the children with low self-control ("low delayers"), the children who exhibited considerable self-control in this task ("high delayers") in their adult live revealed higher scores on the Scholastic Aptitude Test, more positive educational and economic life outcomes, and were much less likely to use cocaine or crack, or suffer from low self-esteem (Mischel, Shoda, & Rodriguez, 1989). These findings opened the way to broader theorizing about self-control, not only because they strengthened confidence in the construct but also because such findings indicated that the conflicts between immediate versus delayed rewards are important to training and education, mental and physical health, and social functioning. That is, such evidence provides outstanding support for the applicability of the theory, and indeed as described by Mischel (2012), the broader "implications for educational and social policy, and for therapeutic intervention are potentially enormous" (p. 19). New questions will be raised and answered, and this process can only broaden the theory's applicability and affect even further. This is a perfect example of how a theory might benefit from applicability.

So, what is there to be recommended from the perspective of applicability? Many scientists work within the context of a conceptual and methodological tradition, and for good reasons. If one has made progress in addressing some issues, then it makes sense to follow a step-by-step approach in a particular programmatic line of research—rather than leap into big changes. But often some "reaching out" or "thinking out of the box" (conceptually and methodologically) might bring about the added value to the breadth of knowledge. Such intellectual moves, crossing the boundaries of one's discipline, are often very useful (for illustrations of benefits of bridging with other disciplines, see Van Lange, 2006).

Likewise, recognizing important trends in society, and linking them to own research interests, can also bring about benefits in terms of applicability. This may occur in a systematic, organized manner, but perhaps just as often it might happen without much planning at all (see also Fiske, 2004). For example, Mischel's (2012) idea to collect data on the sample of children who participated in the Marshmallow experiments was inspired by talking to his daughters about other children who participated and asking how they were doing (p. 5). That dinner conversation gave him the idea that the marshmallow experiments might predict outcomes later on in life.

More generally, talking to people outside of one's field may help to promote applicability. People in the field, for example, ask different questions that may help scientists to extend the scope and breadth of their theorizing. For example, new therapeutic interventions based on Mischel's findings are likely to inform his self-control theory, as well as other theories that focus on impulses and self-regulation (e.g., Carver &

Scheier, 2012; Strack & Deutsch, 2004). That is, such enhanced applicability yields a knowledge gain that makes an important contribution to the theory.

Concluding Remarks

Theorizing in social psychology is generally appreciated, but theory construction at the specific level seems unappreciated. There is no tradition of handbooks of theories in social psychology, theoretical skills are not part of the curriculum in most graduate programs, and virtually no attention has been paid to the ideals that one might use as standards for evaluating theory construction and development in social psychology. I propose TAPAS as a framework for evaluating existing theories in psychology, and for guiding theory construction and development.

Any theory in social psychology (and beyond) can be evaluated in terms of truth, abstraction, progress, and applicability. Likewise, theoretical developments could be evaluated in terms of TAPAS. I have evaluated some classic theories in social psychology, many of which were formulated more than 50 years ago (such as balance theory, social comparison theory, cognitive dissonance theory) in terms of TAPAS. This discussion suggests something that may not be obvious. Sometimes a theory does well in terms of truth, abstraction, and perhaps applicability as well, but has failed to succeed in terms of progress. This appeared to be true for balance theory. In that sense, TAPAS could inspire scientists to reevaluate (and perhaps reappreciate) such classic theories and explore whether progress could be made now, especially with the help of new methods and techniques that were not available at the time that the theory was formulated, such as neuro-imaging techniques and hormonal analysis. In addition, although the ideals of truth, abstraction, progress, and applicability should be quite complementary, it is possible that the ideals may at times be somewhat conflicting. For example, progress might be constrained if the pursuit of truth leads researchers to devote years of research on testing a peripheral notion of a theory, rather than on illuminating the more central ideas of a particular theory.

As alluded to earlier, there are no logical barriers for using TAPAS to evaluate theories in other fields of psychology. But social psychology is a good start, especially in light of its position within psychology. We deliberately used Mischel's theory of self-control and his research on delay of gratification (both summarized in Mischel, 2012) to illustrate applicability (although it could also be favorably evaluated in terms of truth, abstraction, and progress) because his theorizing is inherently interdisciplinary. Specifically, in his theorizing, insights from personality, social psychology, health psychology, developmental psychology, and neuroscience come together and are integrated in such a manner that major future advances in theory are to be expected.

Generally, the ideals of truth, abstraction, progress, and applicability should be quite complementary: The quality of

a theory is greater to the extent that it can be judged more favorably in terms of each of these ideals. However, this is not to imply that the ideals may at times be somewhat conflicting. For example, it is possible that because of the pursuit of truth a lot of effort is devoted to testing the accuracy of a very specific hypothesis. This may to some degree undermine progress, when researchers could have made much more progress if they focused their attention at the central principles of a theory.

Last but not least, I wish to note that theories may serve as bridges. Theories help us to connect to the past (again, balance theory is a good example), theories generalize across processes (from biological to societal processes), theories help us connect to other scientific disciplines (such as biology, neuroscience, or economics), and theories help us connect to societal issues and demands. As to the latter, challenges at the level of the environment, the economy, public health, or relations between cultures and nations have one thing in common. Theoretical and societal challenges are often accompanied by asking the questions of *how* and *why*. How and why do people think and feel about each other the way they do; how and why people interact with one another the way they do. Theories of social psychology could play an enormous role in terms of analyzing the core of the problem and help us understand how we could help getting a grip on such issues and help resolve them.

Clearly, many specific efforts are helpful to advancing psychological science. For example, introducing a new method, paradigm, or concept can be very helpful. In addition, the publication of a well-designed series of studies yielding novel findings can be very helpful. An extensive yet careful debate about a controversy in psychological science can be very helpful. But in the final analysis, theories integrate efforts toward methodology, definition, data, and interpretation. That is, theories excel in the pursuit of the ideals of truth, abstraction, progress, and applicability that help social psychology make a significant contribution to psychological science.

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