CHAPTER

4

A Brief History of Theory and Research on Impression Formation

James S. Uleman *and* Laura M. Kressel

Abstract

Why do we view people as we do? What is scientifically tractable, in that view? How did subjective concepts such as traits become legitimate "objects of perception"? Thorndike, Asch, and Cronbach were critical. This chapter traces Asch's legacy to the present and describes the strange independence of research on accuracy from social cognition. Impressions' internal organization (not accuracy) became the foundation of research on the Big Two (warmth and competence), facial trait dimensions, and morality's unique status. Associative memory structures and schemata provided the language. The unique impact of negative information is reviewed, along with behaviors' diagnosticity and how the morality and competence domains differ. The chapter highlights the importance of goals in shaping impressions, of forming impressions without goals (spontaneously), and of stages in forming spontaneous trait inferences. It also notes the importance of social cognitive transference, perceptions of persons and groups, and conceptions of persons as moral agents and objects.

Key Words: accuracy, competence, diagnosticity, goal, impression, morality, spontaneous, subjective, unconscious, warmth

Hindsight is 20/20, they say derisively. It cannot isolate causes or predict the future. There are no control groups, and who's to say it could not have been otherwise. We are experimental social psychologists, plagued by counterfactuals and mistrustful of post hoc explanations. So take this brief selective history with a large grain of salt.

Also note that any history of impression formation is, in part, a history of how we have viewed ourselves. More than most topics in this handbook, it has been affected by widespread practices in how we (the broad culture and/or the scientific community) describe people. We take the long view and focus broadly on early history, rather than exclusively on the most recent developments. We sketch how the research community came to believe in the things we study as "impression formation," and provide a few interesting stories and ideas along the way.

Understanding impression formation has probably been a human concern ever since our ancestors had the metacognitive realization that impressions do form and are not simply reflections of some reality out there—ever since, putting aside naïve realism and assumed similarity, one person gestured or grunted to another, "How could you possibly believe that about them?" Rossano (2007) argued that as long ago as the Upper Paleolithic (late Stone Age; 45,000 to 10,000 B.C.E.), our species showed unusual levels of cooperation and social organization, and that the development of religion (ancestor worship, shamanism, and belief in animal and natural spirits) supported this by providing "permanent social scrutiny." Inherent in this were theories (stories) about what these spirits were like, and how they could be pleased, appeased, or offended. Such theories must have existed about people as well.

Disagreements about impressions, in these egalitarian societies, would have raised questions about the processes of impression formation—the topic of this chapter.

Diversity of Conceptions of Persons

People's descriptions of others are remarkably diverse and have changed over time. This diversity arose because, unlike the perception of objectively measurable physical properties (e.g., how visible light's wavelengths relate to perception of color), person "perception" is not about physically objective reality. Modern psychology regards the properties we "see" in others as largely inferred, assumed, felt, and/or enacted (e.g., Uleman, Saribay, & Gonzalez, 2008). What we "see" has been wondrously diverse across time, culture, and subculture.

Lillard (1998) provides an overview and numerous examples, focused on theories of mind. The Quechua people in the Andes believe each person consists of two selves: the everyday self and the self of altered states of consciousness as when dreaming or drunk (Carpenter, 1992). Despite the contentious history of the Sapir-Whorf hypothesis, it is now clear that language affects multiple cognitive processes (e.g., Hardin & Banaji, 1993). Thus, the absence in English of an equivalent to the Hindu emotion of *lajya* (shyness + shame + embarassment) or the Japanese behavior of *amae* (to depend and presume upon another's benevolence) affects these language communities' impressions of other people. Instead of speaking of the mind, the Philippines' Illongot speak of *rinawa*, which "unites concerns for thought and feeling, inner life and social context, violent anger, and such desirable consequences as fertility and health" (Rosaldo, 1980, p. 26, quoted in Lillard, 1998). One's *rinawa* can depart during sleep, and it gradually leaves one over a lifetime. Other living things (e.g., plants) also have *rinawa*, so it resembles the *force vitale* or *vitalisme* of 18th-century Western thought. *Rinawa* also resembles the ancient Greeks' concept of *psuche* (soul), but the ancient Greeks also spoke of *thymos* (which produced action) and *noos* (which produced ideas and images) as additional parts of the "mind" (from Snell, 1953, in Lillard, 1998). In Japanese, there is no clear separation between mind and body, and a variety of terms (*kokoro, hara, seishim*, and *mi*) refer to various aspects of the mind-body (Lebra, 1993).

Lillard (1998) describes many peoples who "view the mind as unknowable and unimportant." The "Gusii prefer to discuss overt behavior, and they avoid talking about intentions and other aspects of mind . . . the Baining of Papua New Guinea . . . rarely comment on reasons for actions, even their own . . . Bimin-Kuskusmin . . . and the Ommura . . . —both of Papau New Guinea—and the Kaqchikel Maya . . . are other cultures that are said to view the mind as unknowable and unimportant" (p. 13). Lillard guesses that members of these cultures have concepts about mental states, but regard them as so private or unknowable that they are absent from conversations, including discussions of fault and justice.

We usually assume that mental events (desires, intentions, beliefs) cause actions, but this view is not universal. Cultural differences associated with individualism and collectivism (including the latter's greater sensitivity to situations) are well known (Kitayama, Duffy, & Uchida, 2007). Many peoples credit gods, spirits, dead ancestors, witches, and ghosts with causing people's actions. The Salem witch trials in North America were only 320 years ago (see also LeVine, 2007).

Natural History of Human Nature

How did we arrive at the conceptions of persons that we now "see"—from our prehistoric past through the time of Homer's gods and heroes (800–900 B.C.E.), through Galen's (about 150 A.D.) four temperaments (sanguine, choleric, melancholic, and phlegmatic) based on bodily humors, and ancient Roman and Judeo-Christian conceptions of persons as codified in their contrasting laws and codes of conduct, through the Middle Ages (fifth–15th centuries) dominated by Roman Catholic beliefs about God and salvation, to the European Renaissance (14th–17th centuries) with its renewed emphasis on observation, nature, and the individual? This is largely a Western history because modern science only arose in the West. A detailed description is beyond the scope of this chapter. But Robinson (1995) provides an account of the history of thought about human nature in the West, based on ideas from philosophy, art, religion, literature, politics, and science, with particular emphasis on discrepancies between humanistic and scientific conceptions. Political thought based on various conceptions of human nature can be traced from Plato (about 400 B.C.E.) through Machiavelli (1469–1527 A.D). And Baumeister (1987) presents an interesting overview of how conceptions of the self have changed from the late Middle Ages to the present, with the rise of self-consciousness, the Victorian imposition of repression and resulting hypocrisy, and the consequent modern emphasis on unconscious processes.

Even today there is little consensus on the nature of human nature. Anyone who has taught Milgram's (1974) work on obedience is confronted with the question of whether people are basically morally good or evil. Pinker (2002) organizes his book on human nature around three still-controversial themes: whether innate traits exist, whether essentially good human nature is corrupted by society, and whether we have souls that allow choice unconstrained by biology. Behavioral economics has challenged classical economics' acceptance of *homo economicus*, the view that people are naturally rational and narrowly self-interested (e.g., Henrich et al., 2004). There is disagreement about whether or not people have free will, with Wegner (2005) among others contending that they do not, and Nahmias (2005) disputing this. Much depends on how "free will" is defined (see Baer, Kaufman, & Baumeister, 2008; Dennett, 2011).

Given this diversity of viewpoints on human nature, it is remarkable that a science of impression formation emerged at all.

Early Research on Impression Formation

Social psychology arose within both psychology and sociology, each tradition producing their first textbooks in 1908 (McDougall and Ross, respectively). F. H. Allport's textbook, *Social Psychology* (1924), focused more on empirical studies than had earlier texts, and included a section on "reactions to persons as stimuli." Empirical studies in social psychology had begun appearing in sufficient number that the following year, the *Journal of Abnormal Psychology* changed its title to *Journal of Abnormal and Social Psychology*. The most interesting report that year was from the $5,000 Award Committee, offering this sum "to any person claiming to produce supernormal material phenomena . . . under rigid laboratory conditions and by recognized scientific methods, in full light . . . " (Shapley et al., 1925). No award was made, and Mr. Houdini's unusual abilities were apparently never required. What is remarkable is that less than 100 years ago, American psychologists gave any credence at all to such supernormal conceptions of persons. If impression formation was to be studied, there was still little stable consensus on what these impressions were about.

Meanwhile, real progress was being made in the measurement of subjective phenomena such as personality characteristics and attitudes. Likert (1932) scaling was introduced, and Thurstone (1928) developed the method of paired comparisons for measuring attitudes. "The revolutionary aspect of Thurstone's study was that he borrowed methods from psychophysics without simultaneously assuming the existence of a physical attribute to which to relate psychological judgments" (Dawes & Smith, 1985, p. 513). These and related developments (such as factor analysis) freed empirical psychologists from the "brass instruments" approach that so dominated the early part of the century, and put the study of subjective phenomena on a sound scientific footing. If you can measure it with rigorous quantitative methods, then it must be real. The widespread use of these methods—in government, education, and industry—increased acceptance of the reality that they measured, and helped separate it in most people's minds from supernormal phenomena. With the help of logical positivism, what was not measured faded into ephemera, or migrated to other scholarly fields.

It is no accident that conceiving of personality in measurable terms preceded research on impression formation. In fact, just as social psychology arose at the intersection of sociology and psychology, sustained research on impression formation depended on developments in both social and personality psychology. Uleman and Saribay (2012) argue that the study of initial impressions "bring together personality and social psychology like no other field of study—'personality' because (1) impressions are about personalities, and (2) perceivers' personalities affect these impressions; and 'social' because (3) social cognitive processes of impression formation, and (4) sociocultural contexts have major effects on impressions" (p. 337). Thus, the study of impression formation depends on developments in many areas, some of them surprising at first glance, such as scaling and factor analysis, and the widespread acceptance of measures that make concrete the unobservable.

Social psychology was becoming more experimental. Murphy and Murphy published their *Experimental Social Psychology* text in 1931, and Newcomb was added as an author in 1937, contributing sections on measuring both personality and attitudes. It was also becoming more applied, with the deepening worldwide Great Depression of the 1930s; military adventurism in the Far East, Spain, and Ethiopia; and World War II in the early 1940s. American social psychology benefited from an influx of European immigrants (e.g., Fritz Heider in 1930, and Kurt Lewin in 1932) who were influenced less by American behaviorism and more by German gestalt psychology. Work on impression formation gained practical importance as government and industry programs expanded in the war effort, and

better ways were sought to place the right workers in the right jobs. Clinical and actuarial assessment of skills and personality were among the urgent problems of the day. And impression formation was central to this.

There are several good histories of social psychology, including those by Jones (1985), Zajonc (1999), and Ross, Lepper, and Ward (2009). Jones (1985, pp. 71–72) has an interesting discussion of the incompatibility of S-R psychology with social psychology, particularly social as practiced by Lewin and Festinger. Jones frequently mentions impression formation as a moderator or mediator, if not the focus of investigation. This characterized his own research as well (e.g., Jones, 1990) and reminds us that the study of impression formation, isolated from the urgencies of particular social situations and goals, can become a pallid and lifeless affair. Jones (1985) also discusses "the rise of subjectivism in the 1930s and 1940s," particularly its importance in legitimizing Lewin's approach. "W. K. Estes [a student of Skinner's and pioneer in mathematical learning theory] . . . found Lewinian field theory incapable of a priori prediction and lacking in functional relationship statements that could be anchored in measureable stimuli and observable responses" (p. 84). And so it is. Nevertheless, the enterprise prospered.

Research on Impression Formation Before Social Cognition

To take advantage of the hindsight that PsycINFO (now ProQuest) citation counts afford, we examined them for publications through 1980 that are retrieved by the key words *impression formation, person perception, social cognition*, or *social perception*. There were only three articles with more than 50 citations before 1950, and they reflect the diversity of traditions that contributed to research on impression formation. The earliest, by Thorndike and Stein (1937), is in the burgeoning psychometric tradition noted above. Some 17 years earlier, Thorndike had suggested that there are three types of intelligence: abstract, mechanical, and social ("the ability to understand and manage people"). Thorndike and Stein (1937) reviewed the most widely used measures of the day. They found that their social intelligence measure correlated poorly with other such measures and was hardly distinct from abstract intelligence. This raised the questions of whether such a trait can be measured solely with paper-and-pencil tests and of whether it even exists. This existence question contradicts the recurring strong belief that people (judges) differ in their ability to perceive others accurately. Although subsequent research largely concluded that it does not exist in any strong form, the intuition persists and supports contemporary efforts to isolate the characteristics of socially sensitive judges (e.g., Mayer, Roberts, & Barsade, 2008).

The other two articles with more than 50 citations sidestep the accuracy conundrum by focusing almost entirely on the judge. Heider's (1944) paper is characteristically theoretical and lacks data. Under headings such as "persons as origins" and "the relations between causal units and the properties of their parts," he uses gestalt principles of perceptual organization to develop some of the central ideas that became attribution theory. The other article was the classic paper by Asch (1946), to which we return below.

Two lines of research with more than 50 citations surfaced in the 1950s. Tajfel's (1959) paper became important for research on social categorization and social identity, which remained a distinctly European line of research for several decades. Even though social identity and ingroup/outgroup status have important effects on impression formation (see Tajfel, 1969, 1970), Tajfel does not appear in the name index of Schneider, Hastorf, and Ellsworth's (1979) text on person perception. He makes only two minor appearances in the first edition of Fiske and Taylor's (1984) text on social cognition, in discussions of schemata. These were lean years for European social psychology. To aid its recovery, the European Association for Social Psychology was founded in 1966 with American support, and Henri Tajfel (née Hersz Mordche, 1919–1982) was central in this effort.

The other papers concerned accuracy in person perception. Bieri (1955) investigated the role of judges' cognitive complexity. Taft (1955) reviewed research on five prominent ways to identify good judges, discussed several factors that led to inconsistent research results, and counted "motivation (to make accurate judgments)" as probably the most important of these. The number of combinations of tasks and criteria and judges' cognitive and motivational characteristics was daunting and precluded any clear conclusions. Two other papers—by Cronbach (1955) and Gage and Cronbach (1955)—presented trenchant criticisms of accuracy research. This diverted research away from accuracy for decades, encouraged research on attributions because they usually sidestepped accuracy, and laid the foundation for modern accuracy research. We pick up this thread below.

During the 1960s, four trends can be seen. First, accuracy disappeared as a prominent research topic. Although occasional studies concerned real people, research increasingly employed artificial stimuli for which traditional "accuracy" had no meaning. Second, attribution theory and other cognitive approaches developed rapidly. The cognitive revolution came to social psychology and merged with its gestalt tradition. Attributions developed as a separate research tradition. Motivational and functional approaches receded in importance and were often at odds with cognitive ones (e.g., Bem, 1967). "Information" (colloquially, rather than in the sense of Shannon & Weaver, 1949) became the coin of the realm (e.g., Jones, Davis, & Gergen, 1961). Interest surged in schemata (or schemas) of all kinds, including stereotypes. Kuethe (1962) recast gestalt unit formation ideas in terms of social schema and response sets and biases, and demonstrated again the strong effects of perceivers' schemata on "perception." Crowne and Marlowe (1960) developed their measure of social desirability response bias, to make measures of self-perceptions more accurate. And De Soto, London, and Handel (1965) examined the use of spatial schemata in solving linear syllogisms, as when *better* and *worse* are placed on a vertical axis. They made the very gestalt-like suggestion "that the linear ordering is a preeminent cognitive good figure" (p. 513).

Third, the field confronted the problem of proliferating dependent variables. The terms in which one conceives of others are innumerable. Rosenberg, Nelson, and Vivekananthan (1968) tackled this problem in the most widely cited paper of the decade. They used multidimensional scaling to analyze the co-occurrence of trait terms in participants' descriptions of 10 acquaintances, and then multiple regression to interpret the resulting dimensions. (Twenty years earlier, without computers to do the calculations, this research would have been prohibitively laborious.) They identified two dimensions: good–bad intellectual (e.g., *scientific* vs. *foolish*) and good–bad social (e.g., *honest* vs. *unhappy*), both evaluative but in distinct ways. Evaluation emerged as the preferred dependent variable in other work. Parducci (1968) found context effects for evaluative ratings of misdeeds, from "not particular bad" to "very evil." Byrne, London, and Reeves (1968) found that a stranger's attractiveness was more affected by attitudinal similarity than physical attractiveness, supporting his similarity theory of attraction. Although evaluations miss much of the meaning of traits and other descriptive terms (see especially Peabody, 1970), they have the virtues of ubiquity and of naturally linking to the literature on attitudes.

Fourth, Norman Anderson's work (1965, 1971, 1974, 1981) on predicting evaluative impressions from linear combinations of traits' valences, and on order effects, achieved considerable prominence. Linear functions certainly provide good first approximations for many things, and are clear and tractable. But Anderson's models assumed that the evaluative meanings of individual traits are invariant and unaffected by context—an assumption already contradicted by considerable research. His work was challenged; a spirited controversy ensued (e.g., Anderson, 1971; Hamilton & Zanna, 1974); and the field lost interest in his models. But the controversy nicely illustrates the difference between models that predict outcomes with some precision and models that also represent the processes involved. In resolving this controversy in favor of meaning change, the field moved deeper into analyzing processes, setting the stage for the sovereignty of social cognition (Ostrom, 1984).

Updating Enduring Research Traditions from Pre-1970

The papers discussed above are widely cited because they continue to inspire research and generate new insights. We briefly trace their influence, and its evolution into the social cognition of impression formation, by picking up three major threads.

Asch and the Focus on Traits

Asch's (1946) classic paper, although in the gestalt tradition, cut through the many theoretical complexities of impression formation by offering a simple experimental paradigm and focusing on traits. Asch presented participants with fictional target people described in lists of traits and asked them to form impressions, sometimes in brief sketches and sometimes on bipolar scale ratings. Results enabled him to identify some traits (*warm, cold*) as central (vs. peripheral) in that they had more effect on the overall impression and on the meanings of other traits. He also discussed order effects ("primacy," in which the first items in the list affect impressions more; and "recency," in which the last items affect impressions more) and halo effects (in which the evaluation associated with some traits spreads to others). He argued that impressions have structure and that the meanings of their elements (traits) depend on which other elements are present. Anticipating future research, he wondered whether similar principles govern impressions of groups (e.g., entitativity) or relationships. As important as Asch's ideas

were, the paradigm pioneered in his paper is just as important. It initiated the experimental study of impression formation, focused on traits and their combinations, and still inspires research.

Luchins (1948) soon offered many criticisms, perhaps best summed up this way: "To begin with discrete traits, to take the processes involved in the formation and growth of impressions of people out of their natural milieu, and to neglect personal and social influences may achieve experimental neatness, but at the expense of understanding of everyday judgments of people" (p. 325). Others took these criticisms as empirical challenges and began building on the paradigm, enriching the stimuli and focusing on differences among perceivers. For example, Jones (1954) had navy recruits listen to mock interviews with a platoon leader, form written impressions, and then rate him on 30 traits. The interviews portrayed either a forceful or passive leader. Among other findings, "authoritarians seem to be more insensitive . . . to the psychological and personality characteristics of others" (p. 126). In another dissertation study, Gollin (1954) found "that the formation of an impression of the personality of another is a function not only of the characteristics of the person being observed, but also . . . of the underlying perceptual-cognitive organizing process in the observer" (p. 76). Students watched film clips of a woman behaving promiscuously in two clips and kindly in three clips, so they had to resolve inconsistencies. Those who "simplified" rather than "aggregated" or "related" impressions from the clips made more extreme evaluative ratings.

Decades later, Asch (and Zukier, 1984) returned to trait stimuli to explore the many ways in which inconsistencies are resolved. They characterized targets with pairs of inconsistent traits and asked participants to describe the targets and explain the traits' interrelations. Participants did this easily and exhibited seven "modes of resolution," including enabling, means–ends, cause–effect, and inner–outer relations. Asch and Zukier noted that more "elementaristic" approaches to impression formation (e.g., Anderson, 1981) cannot accommodate these findings. Formally describing and predicting the many ways that inconsistent elements can be combined to form impressions still remains a challenge.

TRAIT CENTRALITY

What makes warm–cold central? Wishner (1960) found that central traits are those that correlate highly with the other traits that are assessed. Thus, a pair such as *polite–blunt* that is not ordinarily central can be made central by tapping impressions on scales that correlate highly with it. This correlational approach to the organization of traits was extended by Rosenberg et al. (1968). Zanna and Hamilton (1972) showed that trait descriptions could change impression ratings on one dimension without affecting the other. *Industrious* vs. *lazy* affected ratings on only the intellectual dimension, whereas *warm* vs. *cold* affected the social dimension.

Orehek, Dechesne, Fishbach, Kruglanski, and Chun (2010) obtained evidence that this structure depends on perceivers' beliefs about traits' unidirectional implications for other traits. They showed that implications between traits are unidirectional rather than bidirectional as correlational or co-occurrence analyses assume; that individual differences in these beliefs mediate such effects; that manipulating these beliefs changes these effects; and that they are reduced under cognitive load when the stimuli are blurry. These results are inconsistent with the bidirectional links in most current associative models of impression formation.

RECENT EXTENSIONS OF ASCH

Recently the Asch paradigm was employed in two research programs that Asch (1908–1996) would have enjoyed. Williams and Bargh (2008) added to the growing evidence that bodily experience can unconsciously affect behaviors and cognitions. They had participants form impressions of a target person described by the same list of traits that Asch (1946) used, but without the traits *warm* or *cold*. Participants incidentally held either a warm or a cold cup of coffee before making their ratings. The warm or cold cup had the same effect on impressions as Asch demonstrated with traits 62 years earlier. Participants were completely unaware of these effects, suggesting that awareness of some stimuli's relevance (or irrelevance) for the task at hand is not required for trait centrality effects.

The second research program concerns Trope and Liberman's (2010) construal level theory (CLT) of the effects of psychological distance. CLT holds that more distant stimuli are processed more abstractly. Based on the ideas that schema-driven processing is more abstract than piecemeal processing and that the primacy effect is schema based, Eyal, Hoover, Fujita, and Nussbaum (2011) found primacy effects for temporally distant targets and among participants primed to think abstractly. When targets were temporally near or participants were primed to think concretely, recency effects occurred. McCarthy and

Skowronski (2011b) examined the effect of psychological distance on the impact of *warm–cold* on impressions. Because Asch (1946) argued that this impact depends on abstract configurational thinking, they manipulated spatial distance in Study 1a and temporal distance in Study 1b. In both studies, the effect of *warm–cold* was greater the more distant the target was. Thus, "looking at old paradigms through the lens of new theories and knowledge will continue to produce fruitful results" (p. 1306).

Cronbach and the Question of Accuracy

Cronbach published his classic paper in 1955 on accuracy in impression formation and how it should be measured, using an elegant ANOVA-like analysis of the multiple processes that contribute to accuracy. For example, it was well known by then that people usually assume that others are similar to themselves. So if they actually are, their impressions will be accurate; otherwise, not. The paper decomposed both accuracy and assumed similarity scores. It showed how accuracy can be decomposed into independent contributions from judges' assumptions or knowledge about (1) the general level of traits among targets, (2) the differences among trait levels across targets, (3) the differences among targets across traits, and (4) the unique standing of particular targets on particular traits. Apparently, "assumed similarity" can be similarly decomposed.

Cronbach's analysis might have led to further studies on accuracy, but it did not. Instead, it seemed to discourage further research on the problem because of its complexity. Thus, the question of accuracy in person perception essentially disappeared from the research agenda until Kenny and Albright (1987) revived it 30 years later. It is beyond the scope of this chapter to describe what followed, except to say that Kenny, his models, his colleagues, and the desk-top computer have put the study of accuracy in person perception back on solid theoretical and methodological ground. Kenny (1994) presented his basic social relations model, which disentangles "three fundamentally different types of perceptions: other-perception, self-perception, and meta-perception" (p. 15). This requires a research design in which many participants act as both perceivers and targets so that perceiver, target, and interaction effects can be distinguished. He pointed out that person perception differs from object perception. "First, person perception is two-sided: Each person is both perceiver and target. Second, . . . perceivers attempt to read the minds of targets and engage in what is called 'meta-perception.' Third, . . . there is a close linkage between self- and other-perception. Fourth, . . . people, unlike objects, change when they are with different interaction partners" (p. 14).

There is more. Kenny's (2004) PERSON "model can explain the low level of consensus in person perception, the fact that consensus does not increase with greater acquaintance, the strong stability of interpersonal judgment, the overconfidence effect, and the fact that short-term judgments are sometimes as accurate as long-term judgments" (p. 265), among other things. Kenny, West, Malloy, and Albright (2006) discussed the general advantages and disadvantages of componential analyses of interpersonal perception. Kenny and West (2010) presented "new measures of assumed similarity and self-other agreement using the Social Relations Model [which, based on a meta-analysis,] seem to be relatively independent of [several potential] moderators" (p. 196). And West and Kenny (2011) described a general model for measuring truth (accuracy) and bias ("any systematic factor that judgments are being attracted toward, besides the truth," p. 360). Meanwhile, the intuition persists that there exist both good judges (Christiansen, Wolcott-Burnam, Janovics, Quirk, & Burns, 2005; Mayer et al., 2008) and social intelligence (Weis & Süß, 2007) that somehow trump the statistical interactions among perceiver, target, and task and provide simpler answers to this complex problem of accuracy in person perception.

Models that take accuracy criteria into account *are* relevant to process questions. Simulation theory (Perner & Kühberger, 2005; Saxe, 2005) holds that perceivers infer characteristics of others by imagining themselves in the same situation, interrogating their knowledge of themselves in that situation, and adjusting for known self–other differences to derive characterizations of others. Errors in the first step of imagining oneself in another situation arise from "the empathy gap" (Van Boven & Lowenstein, 2003), and errors occur in perceiving self–other differences (e.g., Pronin, Gilovich, & Ross, 2004).

Oddly, such accuracy research does not fall within traditional "social cognition," which is typically unconcerned with accuracy or interactions between real people (see also Funder, 1995; Gill & Swann, 2004; and Ickes, 2009). The research designs, stimuli, dependent variables, and statistical analyses are too different, even though both traditions rely heavily on trait concepts and ratings, and both examine processes (cognitive and interpersonal, respectively). Although the divergence in these lines of research made advances in each possible, they will have to be reunited in the future.

Rosenberg and the Organization of Impressions

Rosenberg et al. (1968) identified two relatively independent evaluative dimensions underlying trait impressions. Do these dimensions reflect the underlying structure of personality and behavior (realism), or merely perceivers' theories about what things go together (idealism)? Such theories are known as implicit personality theories (Rosenberg & Sedlak, 1972; Schneider, 1973). Passini and Norman (1966) had shown that trait ratings of complete strangers yield the same structure (the "Big Five") as rating of well-known others, suggesting that semantic structure, rather than actual co-occurrences, is responsible. Sorting this out has not been easy because it depends on distinguishing sources of biases from accuracy, the very issues that Cronbach (1955) and Kenny (1994) grappled with and that West and Kenny (2011) address directly in their truth and bias model. There is no general answer because in each specific circumstance, the influences of truth and bias depend on relations between behavioral or self-report criteria and perceivers' prior theories, goals, attention and memory, communications among perceivers in acquiring new information, and so forth. For example, Anderson and Shirako (2008) had people negotiate with each other over several weeks to discover how much actual behavior predicted negotiating reputation. "Individuals' reputations were only mildly related to their history of behavior. However, the link between reputation and behavior was stronger for . . . individuals who were more well-known and received more social attention in the community. In contrast, for less well-known individuals, their behavior had little impact on their reputation. The findings have implications for psychologists' understanding of reputations, person perceptions in larger groups, and the costs and benefits of social visibility" (p. 320)

Ignoring issues of accuracy, however, as most impression formation research has done, there are surprising regularities in the underlying structure of people's judgments of others. We note three of them here. The first follows directly from the thinking behind Rosenberg et al. (1968) and is based on correlations or co-occurrences among rating scales. The second builds on the generic gestalt concept of "schemata," organized structures that affect how knowledge is interpreted and remembered (e.g., Bartlett, 1932). The third derives from British associationism and conceives of impression structures in terms of interconnected nodes in associative memory networks and the connections between them. It was inspired by developments in cognitive psychology at about this time (e.g., Anderson & Bower, 1973; Collins & Quillian, 1969).

FUNDAMENTAL DIMENSIONS OF SOCIAL JUDGMENT

Judd, James-Hawkins, Yzerbyt, and Kashima (2005) have dubbed the warmth and competence dimensions of Rosenberg et al. (1968) as fundamental (or the "Big Two," in homage to the Big Five personality dimensions) because they keep reappearing in impressions of both individuals and groups. They form the basis for the stereotype content model (SCM; Fiske, Cuddy, Glick, & Xu, 2002) and its more recent elaboration, the Behaviors from Intergroup Affect and Stereotypes (BIAS) map (Cuddy, Fiske, & Glick, 2007). In these models, impressions of group members vary along the two dimensions of competence, predicted by social status, and warmth, predicted by low social competition with perceivers. The low-low quadrant contains such groups as the homeless and poor, toward whom people feel contempt and resentment; and the high-high quadrant contains professionals and ingroup members, toward whom people feel pride and admiration. The low-competence, high-warmth quadrant describes the elderly, who elicit pity and sympathy, whereas the other ambivalent quadrant (high-low) contains the wealthy, the "top 1%," who elicit envy and jealousy. The BIAS map (Cuddy et al., 2007) relates all this to behaviors toward stereotyped groups, with characteristic emotions mediating relations between stereotypes and behaviors. Talaska, Fiske, and Chaiken's (2008) meta-analysis showed that emotions predict discrimination twice as well as stereotypes. Groups in the low-low quadrant are less likely to elicit the medial prefrontal cortex activity that is characteristic of "mentalizing" about others, suggesting that dehumanization and becoming the target of atrocities is more likely for such groups (Harris & Fiske, 2009).

In comparative judgments of social groups, these two dimensions have a compensatory relationship so that, for example, learning that a group is high on competence lowers estimates of warmth (Yzerbyt, Provost, & Corneille, 2005). There is a "tendency to differentiate two social targets in a comparative context on the two fundamental dimensions by contrasting them in a compensatory direction" (Kervyn, Yzerbyt, Judd, & Nunes, 2009, p. 829). Aaker, Vohs, and Mogilner (2010) have extended this to impressions of companies. They showed that firms with Internet addresses ending in dot-com are seen as

more competent but less warm than dot-org firms, and that perceptions of competence drive purchasing decisions. In contrast, Abele and Bruckmueller (2011) found that for person perception, warmth information is preferentially processed.

Two similar dimensions turn up in inferences of personality from faces. Todorov, Said, Engel, and Oosterhof (2008) asked for personality trait impressions from a wide range of computer-generated faces with neutral expressions. They found that "trait inferences can be represented within a 2D space defined by valence/trustworthiness and power/dominance evaluation of faces.... based on similarity to expressions signaling approach or avoidance behavior and features signaling physical strength, respectively" (p. 455). Stewart et al. (2012) found that participants took longer to consciously see untrustworthy and dominant faces and that this delay was longer for trusting perceivers, pointing to unconscious evaluation of faces on these social dimensions.

How ubiquitous is this two-dimensional organization of person information? Is it specialized for and used only for social perception, or is it less conditional? Garcia-Marques et al. (2010) used the Deese-Roediger-McDermott (DRM) false recognition paradigm to study this. Participants heard lists of 10 traits from one of the four quadrants, mixed with six nontraits, and were asked to either form an impression of the person or memorize the list. After a 10-minute distracter, they performed a recognition test of 43 items, including 20 critical lures that had not been heard, five from each quadrant. The DRM paradigm typically finds high false recognition for words conceptually related to study words. This effect was higher for those under impression instructions than under memory instructions, suggesting "that different encoding goals can lead to the activation of somewhat different semantic structures" (pp. 565–566).

Two dimensions may be too few because "morality" is especially important for ingroup perception. Leach, Ellemers, & Barreto (2007) pointed out that warmth includes both sociability and morality and found morality is more important than competence or sociability in affecting ingroup evaluations and group-related self-concept. Furthermore, "identification with experimentally created...and preexisting...in-groups predicted the ascription of morality, but not competence or sociability, to the in-group" (p. 234). These two aspects of warmth—morality and sociability—seem to play different roles in the perception of both individuals and groups. Brambilla, Rusconi, Sacchi, and Cherubini (2011) found that when forming global impressions, participants preferred morality information to both sociability and competence information about other people, and this preference changed for other goals. Perceivers were also most likely to use a disconfirming strategy in verifying morality traits.

Therefore, these two (or three) fundamental dimensions provide one way to describe the relatively stable (and conditionally invoked; Garcia-Marques et al., 2010) semantic space within which impressions of persons and groups can be located. But this kind of structure is relatively static and unrelated to the dynamics of information processing. This is not true of the next two approaches.

ASSOCIATIVE MEMORY NETWORKS

Social psychologists appropriated this idea from cognitive psychologists (e.g., Anderson & Bower, 1973; Collins & Quillian, 1969), for whom performance on various memory tasks is an essential tool for uncovering the structures and processing of mental representations. (You cannot really talk about processes separate from structure because they depend on each.) These networks describe mental structures as nodes (concepts) connected by links that transmit activation (and sometimes inhibition) among nodes. Nodes become linked to each other when they are activated together (contiguity), thereby building up a structure of associated concepts. Memory performance (errors, reaction times, etc.) is a function of such structures and how they are used. Unlike the Big Two, these structures are dynamic and built to change. Smith (1998) provides an excellent overview of ways of thinking about mental representations and memory, including associative memory networks; and see Chapters 10 and 11 of this volume for others.

The notion that concepts activated in semantic memory play a role in person perception has been around at least since Bruner (1957) outlined how activation increases a concept's accessibility (i.e., its likelihood of being used to process incoming information.) Higgins, Rholes, and Jones (1977) demonstrated this in their classic study of the fictional Donald. Participants for whom "reckless" (versus "adventurous") was unobtrusively activated, and who then read an ambiguous description of Donald's actions to which either concept was applicable, were more likely to characterize him in terms of the primed trait. Both frequent and recent concept use (activation) increases accessibility for subsequent information processing, with effects of recent activation decaying more quickly than

those of frequent activation (Higgins, Bargh, & Lombardi, 1985).

Concept nodes are linked in associative networks, and activation (and inhibition) spreads from one node to others. Such structures have been used to describe many aspects of semantic memory (e.g., Anderson & Bower, 1973). Hastie and Kumar (1979) used such a model to describe how people organize information about others in memory. Their participants formed impressions and remembered information about a small number of targets. Each target was described first by eight synonyms of a trait, setting up an expectation, and then by many behaviors. Most were consistent with the trait, but some were inconsistent, and some were neutral. Contrary to what simple schema (e.g., Bartlett, 1932) and prototype theories (Cantor & Mischel, 1977) would predict, the proportion of free recall was better for inconsistent than consistent behaviors, and this effect was greater for shorter inconsistent lists.

To account for these results, Hastie and Kumar (1979) proposed that participants constructed hierarchical network structures with the person node (e.g., James Bartlett) at the top, linked to several "organizing principles" such as traits (honest, deceitful) below that, each of which is linked in turn to the several behaviors (returned a lost wallet, cheated at poker) below that. Then recall occurs by starting at the top target node, traversing descending links with probabilities equal to the inverse of the number of links from that node, and reading out behaviors that have not yet been recalled. This alone cannot account for the superior recall of inconsistent behaviors because there are fewer inconsistent trait–behavior links. But they also proposed that inter-item links among behaviors occur whenever the items are surprising or novel and require elaboration or explanation. This produces more links to inconsistent items, increasing their likelihood of recall (see Figure 5.6 in Hastie, 1980).

This general cognitive structure was invoked by Hamilton, Leirer, and Katz (1980) to explain their finding that people recall more behavioral information about target persons if they acquire it under an impression formation than under a memory goal. The information about each target could be organized around a few traits, and because forming an impression requires organizing information, this is what impression formation (as opposed to memory) participants did by creating inter-item links. This affected not only the amount of free recall but also the degree to which the recalled items were clustered by trait.

Klein and Loftus (1990) provided evidence that superior recall under impression formation may be due, not to more inter-item links, but rather to more semantic elaboration of the items themselves. And of course other organizational structures are possible, depending on the perceiver's goals and the information itself. Sedikides and Ostrom (1988) did a meta-analysis of studies that asked participants to form impressions of multiple unfamiliar targets accompanied by other information (hobbies, hometowns, etc.) that might be used to organize this information in memory. Based on clustering in free recall, they concluded that "person categories are no more preferred than nonperson categories . . . [and] seem not to hold a privileged position in the organization of social information" (p. 263).

Associative network models are powerful because they can make many precise predictions, including serial-position effects (how the order of studied items affects likelihood of recall), recall and recognition times, and clustering in free recall. Even though the full power of associative network models has seldom been exploited by social psychologists, such general frameworks—with traits connected to targets, behaviors connected to traits, and spreading activation among them—remain common in social cognitive theories of impression formation. Hastie and Kumar's (1979) model was among the first to exemplify the ideal of a fully explicit cognitive structure with mechanical (non-anthropomorphic) procedures for employing it. However, its precise and explicit nature limited applications because it only applies to a circumscribed set of conditions. Furthermore, social (vs. cognitive) psychologists are relatively disinterested in detailed modeling of particular cognitive processes and in testing them with parametric studies. Many social psychologists needed a way to talk about knowledge structures and their operation at a more general level, while avoiding such "premature" precision. Schemata fill the bill.

SCHEMATA

Schemata are organized knowledge structures that summarize experience and/or information about particular objects (the self-schema, stereotypes) or events (the restaurant and birthday party scripts). They are typically richer, more complex, and more vaguely specified than associative networks built up node by link by node. They're often referred to as "top-down" rather than "bottom-up" because they influence processing of current information rather than describe how these structures are built up. They usually operate outside of consciousness and affect

the direction of attention at encoding, the interpretation of ambiguous events, inferences about things not directly observed including causality, and retrieval cues and processing strategy. They vary in accessibility, depending on their frequency and recency of use (Higgins, 1996). Schemata may be primed, provided, directly assessed, or simply assumed. Much social cognition research on impression formation is conceptualized in terms of schemata.

For example, in a study designed to show that traits function as prototypes, Cantor and Mischel (1977) developed four stimulus targets based on pretesting trait adjectives for their perceived likelihood of describing an introvert or extravert (prototypes). Then participants read descriptions of an introvert, an extravert, and two unrelated targets under memory instructions, each containing about 40 traits. Their recognition memory for traits was tested, and their confidence in recognizing each item was rated. Even though participants showed considerable accurate recognition memory, their confidence in "recognizing" introvert- or extravert-related but nonpresented trait foils was elevated when the trait list suggested (or explicitly mentioned) introversion or extraversion. That is, the lists primed introvert, extravert, or neither, and these schemata guided subsequent recognition performance, leading to schema-consistent errors. Andersen and Klatzky (1987) examined whether introverted and extraverted "social stereotypes" (i.e., types, such as *brain, politician,* and *comedian*) are associatively richer and more distinctive than trait prototypes. They found support for this idea in cluster analyses of trait sorting data, number of features generated to traits versus types, and the structure of their associations.

Some Major Topics in Social Cognitive Studies of Impression Formation

By 1980, social cognition had emerged as a distinctive approach to issues in social psychology, and impression formation was at its center. Some of this was presaged by Wegner and Vallacher's (1977) *Implicit Psychology*, but neither of them had the position or the students at the time to power a movement. In 1980, *Person Memory* (Hastie, Ostrom, Ebbesen, Wyer, Hamilton, & Carlston, 1980) was published by the group of scholars who were central in shaping the social cognition approach. It was the year after Wyer and Carlston's (1979) groundbreaking book and theory, focused largely on impression formation. The following year, the first Ontario Symposium (Higgins, Herman, & Zanna, 1981) appeared, devoted to social cognition and with contributions by Ostrom, Pryor, and Simpson; Hastie; Taylor, and Crocker; Hamilton; Wyer, and Srull; McArthur (née Zebrowitz); Ebbesen; M. Snyder; M. Ross; R. M. Krauss; and Higgins, Kuiper, and Olsen. The first issue of *Social Cognition* hit the stands in 1982, under Dave Schneider's editorship. So 1980 was a watershed year. The distinctive social cognition emphases on understanding processes rather than merely outcomes, and on the use of memory and response time measures to do so, had been established.

It is beyond the scope of this chapter to trace all the important lines of research addressing impression formation; and some have already been sketched. Furthermore, many of other the chapters of this handbook address topics that include sections on impression formation, including at least Chapters 6 (on, attribution theory), 7 (on attitudes, for implicit and explicit evaluations of others), 9 (on facial processing, for how faces provide information on traits, group membership, and affect), 10 (on mental representation, for the variety of ways in which person information can be represented), 11 (on implicit representation), and 13 (on behavior productions, for interpreting others' behaviors, as well as Chapters 5 and 27 (on prejudice and stereotyping, for an aspect of impression formation that has burgeoned into its own extensive literature). In fact, we often contend that impression formation is "about everything" in social psychology, so also see Chapters 29 (on relational cognition), 34 (on social cognitive neuroscience), 36 (on social cognitive development), 37 (on cross-cultural psychology), 38 (on personality), 39 (on behavioral economics), and 41 (on political psychology).

Instead of trying to be encyclopedic, we sketch major developments since 1980 on several topics not likely to be treated elsewhere in this volume: the dominance of negative information in impression formation; effects of goals on forming impressions, including forming impressions without impression formation goals (spontaneous trait inferences); and then briefly, effects of significant others on perceiving strangers (social cognitive transference); forming impressions of people and groups; and the perception of people as moral agents and as human beings.

Negativity Effects

NEGATIVE ITEMS HAVE MORE WEIGHT

In early work on Anderson's (1965, 1974) information integration, weighted averaging model, the meanings of traits on some (usually evaluative)

dimension that described a target were averaged to predict the overall impression. One finding was that negative (and extreme) traits were given greater weight in the average, so that a –5 (dishonest) and a +1 (polite) produced a –3 rather than a –2. Several models attempted to explain this, in terms of stimulus values. Skowronski and Carlston (1989) outline all these models clearly, along with their failings. Expectancy-contrast theories assume that stimuli for impressions are evaluated relative to a standard that is moderate and positive, and that this produces contrast effects (more extreme evaluations) for the stimuli. Such standards (e.g., adaptation levels) do exist, but they should already be incorporated into the original evaluations of the individual stimulus items (traits). Frequency-weight theories assume that more costly (Jones & McGillis, 1976) or more novel (Fiske, 1980) behaviors are more informative and hence weighted more heavily. Although there is some support for these theories, there is also research indicating that cost and novelty do not completely account for the greater weight of negative (and extreme) behaviors. Finally, range theories (e.g., Wyer, 1973) predict impressions from the overlap in the range of (usually evaluative) implications of the behaviors or traits. Unfortunately, these theories break down when there are three or more cues.

Skowronski and Carlston (1989) offered their own "category diagnosticity approach," which states that cues (traits, behaviors, etc.) have more weight if they are more diagnostic of the dimension or category of judgment. Diagnosticity is defined in terms of reducing uncertainty in choosing among responses or categories, consistent with Shannon and Weaver (1949) definition of information. This definition, coupled with the observation that negative (and extreme) behaviors are generally more diagnostic, produces negativity effects. Note that diagnosticity reflects perceivers' implicit theories of relations between cues and judgments, which may or may not be captured by cue properties alone, such as how novel or ambiguous or counternormative the cues are. Critically, the diagnosticity of cues depends on their meaning in the context of particular judgment tasks and is not inherent in any invariant property of the cues in isolation. Skowronski and Carlston (1989) cite considerable evidence supporting this formulation, including Reeder and Brewer's (1979) work on how schemata for judging ability and morality differ, with a positivity bias more common for ability and a negativity bias more common for morality. Superior performance (which is positive) is more diagnostic of high ability than poor performance (which is negative) is of low ability because anyone can have a bad day, whereas immoral behavior (negative) is more diagnostic of morality than is moral behavior (positive) because even evil people can act good. Thus, behavior diagnosticity is not independent of domain or valence.

PERSONALITY DOMAIN EFFECTS

Wojciszke, Brycz, and Borkenau (1993) documented differences between positivity and negativity biases in the ability and morality domains, by varying behavioral extremity. Participants read about targets who performed four behaviors, all either in the ability or morality domain, and all either moderate or extreme. They found that in terms of trait inferences and global evaluations, "extremely evaluative information results in negativity effects whereas moderately evaluative information results in positivity effects" (p. 332). There were two main effects and no interaction. And ratings were positive for ability but negative for morality. Their findings link to Skowronski and Carlston (1989) in that more extreme behaviors were more prototypical for relevant traits. But their larger claim is that these two main effects "reflect the goals and interests of perceivers. . . . If they [others] are not competent . . . they [perceivers] can usually turn to someone else. . . . In contrast, perceivers are more affected by the immoral than moral behavior of other persons because immoral behavior may threaten perceivers' well-being . . . " (p. 333). Therefore, domain and perceivers' potential outcomes are crucial. Immorality in others is more harmful than competence is beneficial, so the result is a bias toward negativity. This focus on the consequences of behaviors for perceivers, as a determinant of target ratings, is supported and elaborated by Vonk (1996, 1998).

PROCESSING DIFFERENCES

There are also important valence differences in early stages of information processing. Pratto and John (1991) found that negative information automatically attracts attention more than positive information and leads to higher incidental memory (free recall). They measured the capture of attention by asking subjects to name the colors in which trait words were printed. Subjects were significantly slower to name colors for negative traits (23 milliseconds across three studies) because negative traits captured more of their attention. This was unrelated to traits' extremity or base rates. Although not tested here, these automatic effects might well contribute to negativity effects in impression formation,

especially when subjects do not have an impression formation goal and when impressions are memory based. Such effects differ from those based on diagnosticity because they are insensitive to extremity, which usually correlates with diagnosticity.

Processing differences were also found by Abele and Bruckmueller (2011), but based on domain rather than valence. After Wojciszke et al.'s (1993) emphasis on perceivers' outcomes, they posited that of the Big Two domains noted above—agency (competence) and communion (including morality)—communal traits would be processed more readily. They used a pool of 112 traits rated on valence, agency, and communion, and balanced for frequency in German. Communal traits were recognized faster than agency traits in a lexical decision task, and were categorized faster by valence than agency words, independent of valence. Forty behaviors implying helpful and friendly (for communal) and competent and determined (for agency) were probed for their trait implications; responses were faster for communal behaviors, and this was also unaffected by counterbalanced valence. Finally, participants freely described a fellow student. Communal traits were used more frequently than agency traits and occurred earlier in the descriptions. This "preferential processing" of communal information is functional because communal traits have greater potential to help or harm perceivers and to signal approach or avoidance. It is also consistent with De Bruin and Van Lange's (2000) demonstration that people select communal over agency information to find out about a future interaction partner, and spend more time reading the communal information.

GENERALITY OF NEGATIVITY

Negativity effects are quite general. Klein (1996) showed that negative personality traits were more predictive of overall evaluations and voting behavior than positive traits. And negativity effects go beyond impression formation. Baumeister, Bratslavsky, Finkenauer, and Vohs (2001) and Rozin and Royzman (2001) offered wide-ranging surveys of the ways in which negative information dominates positive. Baumeister et al. (2001) reviewed research on relationships, emotions, learning and memory, neuroscience, the self, health, and so forth. Rozin et al. (2001) were even broader, drawing on literary, historical, religious, and cultural material. They note four ways in which negative events have more weight. Negative events are more potent than equally positive events; they have steeper gradients, in that negativity increases more rapidly with approach in space or time; they dominate equally positive events when information is integrated (seen clearly in impression formation); and they are more differentiated and complex. This last feature is seen in the 20 languages Rozin, Berman, and Royzman (2010) surveyed, in that negative events are more likely to be lexicalized and are described by marked rather than unmarked adjectives.

Compelling as this generality is, it is unclear how much these negativity effects are based on the same processes. After all—as with assimilation and contrast effects—dividing phenomena into dichotomous categories such as positive and negative is almost guaranteed to combine outcomes with diverse origins. Yet negativity in all its varieties is widespread. The search for unifying processes, more specific than general appeals to evolutionary survival, will continue.

Goals: Conscious and Nonconscious, Present and Absent

Goals have top-down effects on a wide variety of psychological processes (see Chapter 23) and impression formation is no exception. They create expectancies, make relevant concepts selectively active or inactive, shape interpretations and memories, entail standards of comparison, and so forth. In an early symposium at Harvard University on person perception, Jones and Thibaut (1958) emphasized the importance of situations, roles, and goals for impression formation. They described value maintenance, causal-genetic, and situation-matching goals as each producing its unique "inferential set." Cohen (1961) looked at goals' effects on the resolution of inconsistent trait information. Those presented with trait lists and given the goal of conveying their impressions to others were more likely to ignore inconsistent information and form extreme impressions. Hoffman and colleagues examined effects of goals on how others are construed from behaviors. Hoffman, Mischel, and Mazze (1981) showed that memory and empathy goals favored construal in goal terms, whereas impression formation and prediction goals favored trait terms. Hoffman, Mischel, and Baer (1984) showed that verbal (vs. nonverbal) communication goals make perceivers more likely to use trait constructs.

Hilton and Darley (1991) summarized the effects of a variety of interpersonal goals on impression formation. They distinguish between action and assessment "sets," and within assessment, they distinguish between effects of global and circumscribed

sets. Not surprisingly, different sets have different effects. One influential example concerns power, defined and manipulated in various ways. Fiske initially looked at effects of powerlessness, that is, being dependent on others for desirable outcomes (Erber & Fiske, 1984; Neuberg & Fiske, 1987), and followed up with studies of effects of power and dominance in producing biased perception and inequality (Goodwin, Operario, & Fiske, 1998). Since then, studies of effects of power, powerlessness, and differential status on impression formation have multiplied, adding to a still-developing and complex picture (e.g., Overbeck & Park, 2006; Vescio & Guinote, 2010; see also Chapter 28).

NONCONSCIOUS GOALS

Much of the early work manipulated goals explicitly, or put participants into situations in which they were presumed to have various goals. But the number of possible goals is innumerable, and simply describing effects of various classes of goals—from Jones and Thibaut's (1958) through Hilton and Darley's (1991) to Fiske's (2004) classifications, to say nothing of McDougall's (1908) teleological instincts—can be tedious and arbitrary, unless one is interested in particular goals. However, the study of goals' effects on impression formation took a whole new turn with the advent of modern approaches to unconscious goals (see Chapter 23; see also Dijksterhuis & Aarts, 2010).

Using priming methods, Bargh (1990) and his colleagues showed how to activate specific goals without participants' awareness, thereby avoiding effects of demand characteristics and participants' theories of goals' effects. In contrast to primed semantic concepts, primed goal effects persist over time unless and until the goal is satisfied, and also differ in other ways. In a now-classic demonstration, Chartrand and Bargh (1996) showed that impression formation and memorization goals could be primed unconsciously and that these unconscious goals had the same effects on memory for person information—in both amount and clustering in free recall—that Hamilton et al. (1980) showed for conscious goals.

Moskowitz, Gollwitzer, Wasel, and Schaal (1999) were interested in the ways that chronic egalitarian goals may inhibit the activation of stereotypes. They first established that those with and without chronic egalitarian goals had the same knowledge of stereotypes. Then they showed that priming these stereotypes reduced response times to stereotype features among those without chronic egalitarian goals, but not among those with such goals. Thus, chronic egalitarian "goals are activated and used preconsciously to prevent stereotype activation, demonstrating both the controllability of stereotype activation and the implicit role of goals in cognitive control" (p. 167). Moskowitz, Li, and Kirk (2004) demonstrated how nonchronic goals that one temporarily adopts, but then from which one consciously disengages, can continue to operate preconsciously. They call this "implicit volition," and it represents another instance of nonconscious goals. Although most of the work on conscious and nonconscious control of the effects of beliefs and expectancies on impression formation has occurred in the context of stereotyping (because controlling stereotypes is both desirable and problematic), the nonconscious activation and control processes it delineates are more broadly applicable to impression formation. (For much more on inhibiting or counteracting the effects of beliefs and expectations, especially stereotypes, on impression formation; see Chapter 5).

IMPRESSIONS WITHOUT GOALS; SPONTANEOUS TRAIT INFERENCES

Srull and Wyer (1979) were interested in the conditions under which traits are inferred from behaviors. They posited that such inferences required, among other things, the goal of forming an impression. Winter and Uleman (1984) doubted this. They presented a set of trait-implying sentences to participants who were merely asked to memorize them. Cued recall results indicated that trait inferences did occur, and other tests showed that participants were unaware of inferring them. These unintended and unconscious inferences were dubbed spontaneous trait inferences (STIs). Subsequent studies showed that they occur under other goal instructions, such as identifying the gender of each pronoun in the sentences, or judging whether you would do the behaviors described. These and other goals affect the likelihood of STIs, even as they remain unintended and unconscious (Uleman & Moskowitz, 1994). Although most STI research has used verbal descriptions of behavior, visual presentations also support them (Fiedler, Schenck, Watling, & Menges, 2005). And not surprisingly, individual differences play a role. Participants who differ in authoritarianism also differ in their inferences (Uleman, Winborne, Winter, & Shechter, 1986), and those high on the personal need for cognition are more likely to make STIs (Moskowitz, 1993).

Other inferences occur spontaneously, including causes, goals, beliefs, counterfactuals, and values (see

Uleman, Saribay, & Gonzalez, 2008, pp. 335–336, for a review), all with clear implications for impression formation. Furthermore, Ham and Vonk (2003) have shown that traits and situations can be inferred simultaneously, as when "John gets an A on the test" implies both *smart* and *easy*. These inferences are likely inputs to conscious attributional and impression formation processes. Trait inferences from behaviors can also become erroneously associated with informants rather than actors (Skowronski, Carlston, Mae, & Crawford, 1998), in which case they are called spontaneous trait transferences (STTs). That is, if I tell you that John is smart, I am more likely to be judged as smart later. An interesting research literature explores the processing differences between STIs and STTs (Carlston & Skowronski, 2005).

Are STIs about actors or merely their behaviors? Some of the paradigms used to detect STIs (e.g., lexical decision, and probe reaction time) merely detect concept activation, and results from the cued recall paradigm were ambiguous with regard to reference. These paradigms were not developed to detect relations between actors and trait concepts. This changed with Carlston and Skowronski's savings-in-relearning paradigm (Carlston & Skowronski, 1994). In it, participants "familiarlized themselves" with photo–behavior pairs. Then after some intervening tasks, they studied pairs of photos and traits, some of which reflected the STIs presumably made earlier and some of which were novel. When tested on these paired associates, learning was better for the pairs reflecting initial STIs than for the other pairs. This "savings" shows that STIs are about actors because the savings is specific to trait–actor pairs. Todorov and Uleman (2002) used a false recognition paradigm to make the same point. They had participants study photo–behavior pairs for a subsequent memory test, and after some delay, presented photo–trait pairs and asked whether the traits had appeared in the sentences with the photos. (Some of the sentences contained traits, and others did not.) False recognition rates were higher when implied traits were presented with the photos about whom the traits were implied than with other familiar photos.

Recently, researchers have recognized that paradigms tapping trait activation and trait binding to actors tap separable stages of the impression formation process. First, trait concepts are activated by behaviors, and then they are bound to the actor. Finally, explicit trait inferences may (or may not) occur. This is illustrated in two lines of research. Saribay, Rim, and Uleman (2012) primed either independent or interdependent self-concepts. Using stimulus material affording both trait and situation inferences, they found that priming had no effect on spontaneous activation or binding of traits or situations. But it did affect explicit inferences. Priming independence increased explicit trait relative to situation inferences, whereas priming interdependence did not.

In a series of studies of the effects of unconscious goals on STI, Rim, Min, Uleman, Chartrand, and Carlston (2012) primed an affiliation goal, without participants being aware of the prime's effects. Using a lexical decision STI task, they found that primed participants took longer to recognize nontrait concepts, relative to participants not so primed. This "goal shielding" thereby focused attention on affiliation relevant concepts, namely traits, and left other concepts relatively inaccessible. In a second study, they used the false recognition STI task and found that affiliation priming bound positive traits to actors more than negative traits. Thus, the unconscious affiliation goal produced goal shielding (which was insensitive to trait valence) at the activation stage, and trait binding that was sensitive to trait valence at the binding stage. This suggests that the well-known positivity bias in affiliation is due to selective binding of positive inferences to actors and not to selective activation of positive traits.

The "stages" approach to STI and impression formation in general can become quite complex. In the Rim et al. (2012) work referred to above, there are three stages: unconscious goal activation, selective focusing on traits (vs. nontraits), and selective binding of positive traits. If these feed into subsequent explicit inferences, a fourth stage is added. Recent work by Ferreira et al. (2012) throws light on the transition to this last stage by identifying an "inference monitoring process" that is engaged by conscious impression formation goals. This process produces "awareness and monitoring of otherwise unconscious inferences "…so they can be "used toward attaining conscious goals" (p. 2). Evidence for this process came to light in a series of studies that addressed the following paradox. Hamilton et al. (1980) found clustering in free recall when target behaviors were learned under impression formation but not memory instructions, suggesting that trait-based clusters only formed under impression formation. But Winter and Uleman (1984) found that people infer traits even under memory instructions. So why was there no such clustering by traits in Hamilton et al. (1980) under memory instructions? The inference monitoring process provides a tentative answer.

Finally, consider automatic processes, their role in STI, and their definition. Much of the initial work on STI in the mid-1980s sought to examine whether or not it is automatic, according to the criteria delineated by Bargh (1994) 10 years later: awareness, intention, efficiency, and control. STI is clearly unconscious, unintended, and relatively (but not completely) efficient. But it is subject to at least indirect control, as noted above (e.g., Rim et al., 2012; Uleman & Moskowitz, 1994). Part of the problem is that Bargh's four criteria do not always covary; thus, "automatic" in this sense in not a unitary concept (see Chapter 12). It also has the disadvantage that any task shown to be automatic, even in part, becomes viewed as beyond conscious control. This has been particularly true of research on stereotyping (e.g., Bargh, 1999), but it occurs elsewhere too. The solution is to abandon the dichotomous and mutually exclusive definitions of automatic and controlled processes and to adopt a model and procedures that recognize that both automatic and controlled processes operate in almost any task of sufficient complexity to be of interest to social psychologists. Jacoby's (1991) process dissociation procedure (PDP) does this. It was used to examine STI first by Uleman, Blader, and Todorov (2005), and most recently by McCarthy and Skowronski (2011a). These results show that STI involves both automatic and controlled processes, operating together. Thinking of automatic and controlled as a dichotomy is less useful than conceiving of them as independent processes that both contribute to social cognition.

There is much more to STIs (as well as the other topics we have touched on). A more complete version of the STI story was recently published by Uleman, Rim, Saribay, and Kressel (2012).

Other Topics

These are only a few topics illustrating the social cognitive approach to impression formation. Here are three others that we might have covered more fully, had there been more space.

SOCIAL COGNITIVE TRANSFERENCE

Rather than conceiving of impressions as formed from observations of behavior and inferences of traits, this work takes existing conceptions of significant others as the starting point for forming impressions of strangers. If a stranger shares some features with a significant other, additional features of the significant other are assumed or extrapolated onto the stranger. This holds for traits, evaluations, and the other usual features of impressions, but also for a wide range of the perceivers' other responses to strangers, including emotions, aspects of the perceivers' self-concepts (relational selves) when with the significant other, and perceivers' behaviors. Thus, social cognitive transference engages a wider range of dependent variables and extends the usual definition of an "impression" (see Andersen, Reznik, & Glassman, 2005).

IMPRESSIONS OF PERSONS AND GROUPS

How is impression formation of persons similar to and different from impressions of groups, and how are these related? This is an old set of questions related to stereotyping (e.g., Rothbart, 1978) that has acquired new life in research by Hamilton, Sherman, and colleagues on group entitativity, that is, group cohesion, longevity, impermeability of boundaries, and so forth (e.g., Lickel, Hamilton, & Sherman, 2001). In an interesting connection with STIs, Crawford, Sherman, and Hamilton (2002) showed that spontaneously inferred traits about one member of a group are generalized to other group members if the group is high in entitativity, but not otherwise.

PEOPLE AS MORAL AGENTS AND OBJECTS

Judging people on a moral dimension has long been recognized as a high priority of perceivers. What is less clear is how targets' morality is judged, that is, what constitutes morally good and bad behavior, and when judgments based on behaviors (or group membership, etc.) affect perceptions of targets' temporary states of mind or enduring traits. To what degree are these judgments cognitive versus affective or emotional? To what extent are the inference processes conscious or nonconscious, deliberate or spontaneous, automatic and controlled, or post hoc justifications? And who is accorded the status of a moral agent, rather than being dehumanized? The social cognitive approach to impression formation (along with, e.g., experimental philosophy, social neuroscience, and developmental psychology) are contributing much to addressing and refining such questions. A quick overview of some recent viewpoints in this area is provided by Gray, Young, and Waytz's (2012) target article and reactions to it.

The Future of Social Cognition and Impression Formation

Social cognition is an experimental approach to understanding our thoughts (conscious and not)

about social events. Historically, it has focused on measures such as memory performance and response times, and on concepts such as automaticity and implicit cognitive organization (e.g., Uleman, Saribay, & Gonzalez, 2008). These methods and concepts continue to be adopted more and more widely, and newer methods (e.g., social neuroscience) that give us better tools to investigate processes are becoming part of the social cognitive approach. At the same time, conceptions of what "impression formation" is about have broadened well beyond traits and social preoccupations of the Western college sophomore. The legacy of social cognitive research on impression formation is secure, and the future is wide open.

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