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"One Word: Plasticity" – Social Cognition's Futures

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Social cognition is thriving, and not only in this *Sage Handboo*k. We are everywhere, popular now for fascinating factoids, thanks to our friends in science journalism (e.g., Brooks, 2005, 2011; Gladwell, 2000, 2005, 2008), as well as our talented peers who write for lay audiences (e.g., Feldman, 2009; Gilbert, 2006; Taylor, 1989). We twitter, we blog, we YouTube, and future media will doubtless go on loving us. We are simply too much fun to ignore. But our nuggets are nowhere without the science. We are not only fun but also too important to ignore, now and in the future. Social cognition research matters because it focuses on how people make sense of themselves and others. Social cognition is an everyday miracle: thinking for doing (Fiske, 1992, paraphrasing James, 1890). Social cognition homes in on that sweet spot, the center of people's lives, because we are about what matters to people. And, like people's sociality, we as a field are adaptive and pragmatic. If nothing else, our functional value guarantees our future as a field. In other words, people survive and thrive through social cognition, so our field has a bright future.

What is that future? In one word: plasticity. This is both a popular and a scientific reference. In the 1967 film *The Graduate*, a just-minted BA, Benjamin Braddock, played by Dustin Hoffman, during the party in his honor, is led outside by a family friend, Mr McGuire, who has noticed him wallowing in indecision and offers the avuncular advice: "Just one word." "Yessir." "Are you listening?" "Yes. I am.": "Plastics." A puzzled Benjamin asks for clarification, to which the response is,

"There's a great future in plastics. Think about it. Will you think about it?" Unlike Mr McGuire, I will not insist "Shh! Enough said"; instead, let's share our field's promising little secret.

We are already plastic, in three respects: people are plastic; our field is plastic; and the context is plastic. This malleability at all levels is our future, as the science appreciates more and more about human plasticity. Social psychologists can get people to do about anything, so in that sense we have always been about human plasticity. Our most influential work as social psychologists has dramatized the mighty-mouse phenomenon: how a small change in an independent variable can have huge effect on an important dependent variable. Social psychologists have classically known this, as in the iconic studies associated with great names in the field (Festinger, Tajfel, Milgram, Zimbardo, Cialdini, Aronson, Ross, Darley, et al.). And social cognition classics share the same magic, priming undergraduates to be elderly walkers or smarter trivial pursuers, recording split-second judgments that predict electing politicians or shooting suspects, or showing failures to predict happiness or suppress white bears (respectively, Bargh, Dijksterhuis, Todorov, Payne, Gilbert, and Wegner). In each paradigm, a small, subtle manipulation (e.g., remember this phone number) creates an interesting demonstration of people's plasticity.

Our field also is already plastic. Operationally, social cognition research often borrows or invents methods to examine fundamental processes of social understanding, focused on mental processes and internal representations. This will not change,

but our focus on sociality has made us avoid anything biology-related as too deterministic (evolution, genes, temperament, hormones, brains, bodies). But biology isn't destiny! Biology, too, reflects context (e.g., Taylor & Stanton, 2007). So we are now heading more in that direction.

Finally, the context itself is plastic. Our world is changing, and social cognitionists, like other social psychologists, acutely attune to social issues raised by the current human situation. For example, American social psychologists began, during World War II, by measuring attitudes for propaganda purposes and documenting stereotypes to understand the Holocaust and racial integration of the military. Attitudes and stereotyping research have continued to flourish under the social cognition umbrella, and, given globalization, this trend will doubtless continue. What's more, changing demographics predict changes to our field in the future. This chapter thus examines social cognition's future in plasticity three ways: human behavior's malleability; our field's nimble adaptation; and changing demographic contexts.

SOCIALLY ATTUNED: PEOPLE ARE INCREDIBLY PLASTIC

The term *plasticity* is far more state of the art in cellular neuroscience, where the first demonstrations are Nobel Prize material. Instead of neurons' numbers being fixed at birth, as assumed for decades, neuronal firing increases neuronal wiring and even neurogenesis. According to a now-established perspective, brain plasticity results from experience (for reviews, see Kolb & Whishaw, 1998; McEwen & Gianaros, 2011). Most relevant here, social experience shapes hormones (Carney, Cuddy, & Yap, 2010) and neuro-plasticity itself (Stranahan, Khalil, & Gould, 2006). For example, parenting is intensely affected by hormones such as oxytocin and affects other hormones such as testosterone. Overall, social encounters also deeply involve the influence of hormones in attachment, trust, dominance, sexuality, stress, social support, and more. Social cognition researchers have opportunities here.

Extrapolating upward several levels of analysis, and admittedly linking loosely, social cognition research illustrates other versions of plasticity, finding that people modify their responses with remarkable alacrity. Closer to the neural plasticity metaphor, we are also capable of developing new social-cognitive habits. Human social cognition is plastic in both senses.

Humans are socially agile, even on automatic

Because humans are famously social, our everyday adaptation and our long-term viability both depend on getting along and playing nicely with others. Being warm and trustworthy is a primary dimension of social cognition, for good reason. Much evidence indicates that humans do best when they cooperate (Fiske, 2010). Being responsive to others requires being attuned. Thus, we adjust to each other, to our immediate social context. Social psychologists know this; it is our stock-in-trade. Social cognition research will continue to examine the fine-grained mechanisms of sociality.

Human are socially agile, and in that sense plastic. We are hard-wired to be attuned, but not precisely how to respond, which depends on context. Social cognition appreciated this most eloquently when one of our most cherished "universal" principles yielded to culture context. We learned – and we thought we knew it was fundamental – that people are biased to view behavior as a product of the actor's predispositions, neglecting situational constraints (Gilbert, 1998). We even do this automatically. According to an ad hoc PsychNet search (January 2011), our articles on social attribution accelerated from about zero in the 1960s to nearly 2000 per year in 2010. But articles showing cultural variations, while about a tenth of the total, show that our earlier results may have described WEIRD (Western, educated, individualistic, rich, democratic) people more than the rest of the world (Henrich, Heine, & Norenzayan, 2010a, 2010b). Other people, maybe even most, understand the power of the situation more than we do (A. Fiske et al., 1998). So while all of us are socially agile, responding to the situation, some cultures recognize this more than others do.

Social agility overthrew another thing we thought we knew. Automatic priming of behavior boasts some of our most amazing, "science is stranger than fiction" demonstrations. People easily respond to social demands even without knowing what influenced them. We thought this was an inevitable situational control, but now we find out that even automaticity is – paradoxically – malleable too. In this volume, Keith Payne (Chapter 2) describes how automatically we respond, at the same time that neither our automaticity nor our control is absolute. The future of research on automaticity will be in understanding just how plastic it is. Also in this volume, Ezequiel Morsella and Avi Ben-Zeev (Chapter 14) describe how not only cognitive representations but also action representations impel behavior. The future of social cognition

predicting action lies in the flexibility and attunement of these varied knowledge formats.

Even our automatic cognition and behavior depend on goals and motivation, as Henk Aarts shows in Chapter 5. Just as people are swayed by shortcuts, environmental anchors, accessible information, and confirmatory evidence, and biased toward immediate, certain, loss prevention, we also are swayed by emotional states; all this nudges us to some reflexive judgments and decisions over others, as David Dunning notes (Chapter 13). The future of motivated thinking and doing lies in better understanding these intrapersonal dynamics.

Perceiving other people likewise is remarkably automatic but also remarkably plastic. Perceiving faces, as Alexander Todorov shows in Chapter 6, is special: rapid and consequential, with dedicated neural networks, reflecting the peculiar importance of other people as objects of perception. In addition, we readily infer traits, status, and intents from other people, which Daniel Ames and Malia Mason demonstrate in reviewing mind perception (Chapter 7): how, how well, and where we mind-read. Social perception per se enters the first really early moments of perception (e.g., neural systems), and much remains to clarify and specify about how we represent other faces and other minds.

These social cognitive representations are not only mental, as a growing mountain of evidence shows, but also embodied cognition, emotion, and attitudes show how plastic our forms of representation can be. As Gün Semin, Margarida Garrido, and Tomás Palma show (Chapter 8), cognition emerges from sensorimotor interactions with the environment, in dynamic and adaptive ways, challenging received wisdom in social cognition research. As in cognitions, so too in emotions: Autumn Hostetter, Martha Alibali, and Paula Niedenthal (Chapter 11) link social cognition, emotion, and gesture to understand embodied social thought. From such controversial, forward-thinking provocations come the next bandwagons.

Regardless of representational format, social cognition operates at varying levels of abstraction, be they long-term new habits or back-and-forth switching. People regulate their own construal levels, depending on context, as Oren Shapira, Nira Liberman, Yaacov Trope, and SoYon Rim explain in Chapter 12. Also, social cognition operates at varying levels of consciousness, from unconscious to meta-conscious, as Piotr Winkielman and Jonathan Schooler review in Chapter 4.

To illustrate how far we have come: social cognition research used to be viewed as reductionist and determinist, insufficiently social. But as the future fades into the present, the field shows more and more just how socially adaptive we are, for most everyday purposes. Evolutionary perspectives, as Joshua Ackerman, Julie Huang, and John Bargh point out (Chapter 23), link adaptive processes within individuals' and species' social development.

For an example of social adaption from our lab, prior work had shown that social interdependence makes people pay attention to others and think about their predispositions, presumably for adaptive control. An independently identified area of the medial prefrontal cortex differentiates partners one needs for a goal, and especially the most diagnostic information for making sense of them (Ames & Fiske, 2011). People's socially attunement starts at the most fine-grained levels, as we collectively learn to measure them.

OUR NIMBLE FIELD

Our field is incredibly plastic, as befits researchers who study attunement to situations. Our nimble science adapts to new trends and adopts new theories and methods; this is our rapid response to new insights, shifting with exhilarating speed for an academic discipline. Several classic social cognition topics have ebbed and flowed accordingly, suggesting alternative future worlds.

Oldies and goodies

Our field is constantly discovering new functions served by social cognition. At first, social thinkers seemed to be cognitive misers who simply conserve scarce mental resources. Then, the field turned to viewing thinkers as motivated tacticians, who chose among processes. Recently, we have viewed social thinkers as activated actors, who must both think and behave in the course of social interaction (Fiske & Taylor, 2008, Chapter 1).

Constant among these views of the social perceiver are nevertheless some key factors. One key functional representation, the expectancy, dates back to the earliest social cognition research (Bruner & Postman, 1949). Expectancy has gone by various terms such as *schema* and *prototype* in the thick of the cognitive revolution, and for the last few decades, they yielded to frameworks such as the social categories documented in Chapter 16 by Galen Bodenhausen, Sonia Kang, and Destiny Peery. Social categories serve various functions for perceivers, consistent with the theme that perceivers adapt to contextual contingencies. Bodenhausen and colleagues suggest that the

future must tackle both the intersection of multiple categories and the possible ambiguity in category membership, for example, in multi-racial individuals, or immigrants balancing old country and new identities. Besides new problems to tackle, as new methods continue to emerge – such as neuroimaging over the last decade – our understanding of expectancies' processes and representation will grow.

More than just a shift in terms or in methods, social psychology as a whole has moved from studying initial *attraction* and *first impressions* to study ongoing *close relationships*. Social cognition research has informed this transition. As reviewed by Susan Andersen, Adil Saribay, and Elizabeth Przybylinski (Chapter 18), people's stored knowledge about significant others is evoked by context, with important consequences for beliefs, feelings, and actions in social responses even beyond the close relationship itself. The future, informed by new methods such as experience sampling and diary studies, as well as the multilevel modeling needed to analyze such data, promises to be productive.

Another topic, *attitudes*, foundational to the field of social psychology, has shifted focus several times over the decades, and doubtless will continue to do so. In the context of cognitive approaches to attitudes, the biggest recent and ongoing impact has been indirect measures of attitudes. As Brian Nosek, Carlee Hawkins, and Rebecca Frazier note (Chapter 3), measures can catalyze theories of mechanisms and applications to new domains. Methods that started in controversy have resolved into a bandwagon, judging not least from PsycNet hits, and doubtless the upward trend in implicit attitudes research will continue.

Even the core topics in attitudes acknowledge the newest indirect measures of attitudes but, as related to social cognition, delve further into representation and process. Melissa Ferguson and Jun Fukukura document in Chapter 9 that likes and dislikes form easily but predict judgment and behavior, varying across time and situation. We probably know more about attitude representation and process than any other social psychological concept, and its futures expand still farther into contending with neural correlates, peripheral physiology, and subtle links to behavior.

Moving to more general feeling states, another established area, *emotions*, has bright social-cognitive futures. Emotions in social contexts reflect motivating social cognitions, as Batja Mesquita, Claudia Marinetti, and Ellen Delvaux remind us in Chapter 15. Feeling, like thinking, is for doing, and in particular social doing, whether in dyads or groups, even though people sometimes fail to respond adaptively.

Much emotion is communicated nonverbally, as Nora Murphy's account of cues, perceivers, targets, and interactions shows (Chapter 10). The social-cognitive angle focuses on accuracy in complex and nuanced decoding. *Nonverbal behavior* will continue to be important, as we measure ever-more subtle expressions, e.g., using EMG (electromyography), and as we measure ever-more subtle perceptions, e.g., using eye-tracking of facial stimuli.

Psychology and physiology marry also in continuing work on the *self-concept*. People evaluate and know themselves, Jennifer Beer notes (Chapter 17), through both internal and external sources of information, and social-cognitive approaches examine neural, cognitive, and bodily representations. We will not stop studying the self anytime soon, as is true of other classics – expectancies, relationships, attitudes, emotions, and nonverbal communication – all seen in new ways.

Taboo topics

How will we know when these social cognitive foundations are shifting as the future temblors shake us? Like earthquakes, tectonic shifts in the field are unpredictable except that we know they will happen. The intellectual shake-ups matter not for their speed but for re-orienting the landscape. Feeling unsettled is a good predictor of magnitude, as in the notion (urban myth?) about animals sensing earthquakes before people do. Discomfort can index an idea whose time may have come to shake things up a bit (Fiske, 2003).

Uncomfortable new ideas often overcome old taboos. In social cognition (as in much of social psychology), personality sometimes is relegated to the error heap. Arie Kruglanski and Anna Sheveland (Chapter 24) argue that personality is not anti-social, or a-social, but that both domains can operationalize the same conceptual variables. Sense-making varies as a function of both perceivers and situations, disciplinary chauvinism aside.

In another resolution, ideology and science need not oppose each other. Social-cognitive scientists can study ideological knowledge not as rigid, fixed ideas, but instead as flexibly activated concepts, depending again on both person and situation, as Aaron Kay and Richard Eibach note (Chapter 25). While the field rethinks its relationship to politics, science can adapt older concepts (e.g., chronic and temporary accessibility) to new domains. Deeply divided political times need all the scientific insight we can get.

Politics aplenty have come into nature–nurture debates of the past, now mostly behind us, fortunately. As gene × environment interactions

demonstrate, the twain shall indeed meet. We have not only biological but social brains, as described by Joan Chiao, Bobby Cheon, Genna Bebko, Robert Livingston, and Ying-yi Hong (Chapter 26) examining the gene–culture mix in social cognition.

From controversy to bandwagons

Not every controversy produces a parade, marching bands, and a crowd of followers. But, safe to say, researchers greet noisy new ideas with skepticism, as indeed we should. Why rearrange the traffic patterns unless we must? Our field's flexibility is impressive but not unbridled. It's a fine line between same-old science (Have we learned anything new here?) and far-out anomalies (ESP, Bem, 2011).

The rocky road toward new approaches used to include social cognition research, strange as that may seem now. Social psychologists originally found social cognition research too asocial and reductionist, whereas cognitive psychologists found it insufficiently cognitive and rigorous. Before enough people joined up, social cognition researchers were caught in heavy crossfire. History has repeated itself with social neuroscience, now well accepted. Doubtless, the future will bring more such public disturbances. We can only hope.

SHIFTING DEMOGRAPHICS

People, in general, and in our field, in particular, adapt to change. Our field always responds to social change – war, racism, environment, gender roles – with relevant theory-based research. In that sense, our larger social–political–economic world is plastic, too. Hence, changing demographics predict the topics of the future: globalization, immigration, aging boomers, changing family patterns, earlier diagnosis of mental disorders, and overall economic volatility, especially income inequality. Let's speculate about each in turn.

Globalization, the shrinkage of distance and boundaries, expands opportunities for contact across cultures. As cultures collide, the field will increasingly address the formative power of culture, as Beth Morling and Takahiko Masuda aptly describe it (Chapter 22). Cultures, of course, shape all humans to adapt to their immediate context, in order to survive and thrive. And specific cultures transmit guidelines for psychological functioning, including the lens of social cognition.

We are only beginning to understand the alternative realities that cultures constitute.

Although not appearing in this volume, immigration provides an opportunity for social cognition research, but not just in terms of immigrants as objects of attitudes and stereotypes. Immigration oversees an abrupt change in social cognitions about culture, identity, goals, ideology, and more. If we can address people's transitions to new cultures, and the duality of the immigrant experience, social cognition researchers will access countless natural experiments on change in the content, representation, or even the processes of social thinking.

Our population is aging. Hence, another kind of natural experiment is also occurring within-subject, and that is the natural aging process. Reviewed in Chapter 20 by William von Hippel and Julie Henry, social-cognitive aging demonstrates decline in some mechanics of social cognition, especially certain controlled processes and the speed of automatic ones, but also an increase in experience, resulting in a lifetime's accumulation of knowledge. The interplay among these processes and contents provides a window on distinct processes perhaps otherwise hard to dissociate. The aging demographic bulge provides an opportunity also for focusing on intergeneration tensions that are unique among in-group–out-group dynamics because of the moving window of this boundary (North & Fiske, 2011). Interactions between generations often occur within families, an understudied site for social cognition.

Simultaneously, social cognition research is moving downward in age, as well as upward in age. The growth area of social-cognitive development, reviewed by Talee Ziv and Mahzarin Banaji (Chapter 19), explores the origins of the processes and knowledge that appear throughout this volume. Changing family patterns here present the opportunity for exploring the role of different caretaker patterns (e.g., by gender, by sheer number) in developing early-childhood social cognition.

Younger research participants also enter specifically into the origins of atypical social cognition, described in Chapter 21 by Elizabeth Pellicano. As the larger field learns more about autism, for example, diagnoses increase and start earlier. Autism, deeply implicated in social-cognitive processes, focuses attention on the building blocks of interpersonal perception: for example, intention, biological motion, and communication signals.

Standing back from age and culture, economic issues provide a larger context for social cognition. Social cognition researchers have many opportunities here. Income inequality predicts a

nation's lay theories of how society and its groups operate (Durante et al., 2011). Economic volatility creates uncertainty that undermines health and well-being (Wilkinson & Pickett, 2010), and uncertainty exaggerates toxic status divides (Fiske, 2011). Social class is one such status system that influences formal social-cognitive training in school, but also less formal world views that construct everyday social encounters (for a collection of initial endeavors, see Fiske & Markus, 2012).

Besides globalization, immigration, aging baby boomers, changing family patterns, earlier diagnosis of mental disorders, and overall economic volatility, especially income inequality, the larger scientific context provides new opportunities for our field. As illustrated throughout, new methods and theories cross the borders from adjacent fields to social cognition, enriching and growing the endeavor.

REPRISE: PLASTICITY FUTURES

Humans are socially agile, providing constant opportunity for social cognition researchers to document people's functional and dysfunctional adaptations. Doubtless, this dominant trend will continue to value human malleability. Our science has displayed its nimble adoption of new paradigms that move from controversy to bandwagons; so as scientists too, we are agile, and alert to new opportunities that the context offers. One potent predictor of societal and therefore scientific context is demographic shifts. If we pay attention to these larger contexts, we will see even more opportunities on the horizon.
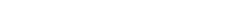
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