

## Bridging Social and Cognitive Psychology?

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**W**hen I was asked to comment on the benefits and costs of bridging cognitive psychology, my own field of research, with social psychology, I thought this was easy—the more so as I have a social-psychological background myself (Schultz-Gambard, Feierabend, & Hommel, 1988; Schultz-Gambard & Hommel, 1987). However, addressing this issue requires one to define what a cognitive and a social psychologist is, and here my confusion began. Let me use an empirical example—an experiment that I conducted for my doctoral dissertation (Hommel, 1993)—to explain why.

### NO BORDERS HERE

It is well known that spatial stimulus-response compatibility affects human performance, even if stimulus location is irrelevant to the task—the so-called Simon effect. What I first did in the mentioned study was to replicate this effect (Hommel, 1993, Experiment 1). Subjects were to press a left response key as fast as possible whenever hearing a low-pitched tone and a right key whenever hearing a high-pitched tone. Even though the location of the tone varied randomly, subjects were faster if the low tone appeared in a loudspeaker on the left rather than the right side, whereas the opposite was true for the high tone. Hence, subjects were better if the stimulus appeared on the same side as the correct response. Next, I connected each key with a small LED (light-emitting diode) on the opposite side, in such a way that depressing the left key would flash a light on the right side and depressing the right key would flash a light on the left side. I reran the experiment and obtained basically the same



effect: Subjects were better if the stimulus appeared on the same side as the correct response. Then I ran another replication of the same experiment with only a slight change in the instruction. Instead of asking participants to “press the left or right key,” I asked them to “flash the right light” to the low tone and to “flash the left light” to the high tone. Obviously, this did not change the physical aspects of their task—the left light was flashed by pressing the right key, and vice versa—so that the new instruction implied exactly the same stimulus-key mapping as the old one. And yet the outcome was exactly opposite to what I observed before: Subjects were better if the stimulus appeared on the *opposite* side of the correct response key!

What had happened? One way to interpret this reversal of a well-established, commonly robust effect is in terms of socially shared, joint attention (Moore & Dunham, 1995). Every action we perform can be described in many ways and with regard to many levels: The same movement of one’s hand may be described in terms of the muscle movements involved, with regard to the emerging kinematic pattern, as the “signing of a contract,” or with respect to the socially defined meaning this signature has in the given context. Moreover, the most acceptable description of an action may vary from one situation to another, so that most people would consider a merely kinematic description of the signing of a peace contract between two countries inappropriate. This suggests that people create coherent social situations with a shared meaning by directing each other’s attention to particular events and to particular levels on how the relevant features of these events are defined (Tomasello & Call, 1997). Indeed, this is what must have happened in the Hommel (1993) study: Defining the action as “keypress” communicated a particular meaning of the required action and codirected the subjects’ attention to particular, socially relevant aspects of it. Defining the same action as “flashing a light” communicated another meaning and codirected attention to the visual effects the keypress created.

Apparently, then, even performance in something as unchallenging as a binary-choice reaction-time task reflects “the way in which people’s thoughts, feelings, and behaviors are influenced by the real, imagined, or implied presence of other people,” as the editors of this book, in their invitation letter, rephrased Allport’s (1985) definition of social psychology. Does this render people like me, who investigate the processes underlying effects of this sort, social psychologists? There are countless phenomena that would lead to the very same question. Take, for instance, the recent hints to so-called mirror neurons in the human premotor cortex. Using single-cell recordings in the macaque premotor cortex, Rizzolatti and colleagues showed that at least some of the neurons that mediate the performance of particular goal-directed actions, such as grasping an object, are also involved in perceiving the same action being performed by someone else. Brain-imaging techniques have revealed that humans possess comparable neural structures, that is, neural codes that mediate both perception and planning of actions (Rizzolatti, Fogassi, & Gallese, 2001). Obviously, these observations have enormous im-

plications for our understanding and the interpretation of a whole number of social phenomena ranging from imitation, mind reading, and empathy, and to verbal and nonverbal communication. Interestingly, even though most of the researchers investigating these issues are very aware of the social nature of their topic, they are likely to consider themselves cognitive (if not neurocognitive) rather than social psychologists.

Conversely, an increasing number of social psychologists are investigating phenomena that have very little to do with “the way in which people’s thoughts, feelings, and behaviors are influenced by the real, imagined, or implied presence of other people.” This applies in particular to the area of human emotion, which has seen a real boom in the last decade or so. For unobvious reasons, many of the landmark papers creating this boom were authored by social, not cognitive, psychologists, and were published in social-psychological, not cognitive-psychological, journals—just take the studies of Strack, Martin, and Stepper (1988) on James’s facial-feedback hypothesis, of Murphy and Zajonc (1993) on subliminal emotional priming, or of Chen and Bargh (1999) on the direct impact of emotion on manual action.

These and more observations make me doubt whether there still is a clear-cut border between social and cognitive psychology and, by implication, whether there is something to be bridged at all. In fact, I find it hard to think of “purely cognitive” phenomena that would not reflect “the way in which people’s thoughts, feelings, and behaviors are influenced by the real, imagined, or implied presence of other people” along the lines already discussed. Reversibly, I do not know of much evidence suggesting that the processing of social stimuli and the performance of social actions would be cognitively any different from the processing of not-so-social stimuli and the performance of not-so-social social actions, however they may look. Hence, even if one might think of extreme examples where the mutual interest of cognitive and social psychologists is likely to be low (say, early vision and group dynamics), I do not see any empirical evidence of, or theoretical need for, a clear-cut separation of these two groups in terms of the empirical phenomena they want to understand.

### HOWEVER ...

And yet, I suspect that retaining some sort of distinction between cognitive and social psychologists is important—not with regard to the investigated issues, phenomena, and processes, but in terms of scientific perspective. Notably, the two communities differ, at least on average, with respect to the preferred level of analysis and the grain size of explanation that is considered satisfactory. Take, for instance, the (relatively) automatic impact of stimulus attributes on human actions. Cognitive psychologists have suggested and are discussing a whole number of processing models to account for such effects, especially of spatial stimulus features (for an overview, see Prinz & Hommel, 2002). These models include assumptions about how stimuli and the actions

they affect are cognitively represented, how and when the former impact the latter, and whether and how this impact can be modulated by intentional processes and task goals. One might expect that much could be learned from these modeling efforts to account for the impact of emotional stimulus attributes, but with a few—very interesting—exceptions (e.g., Bargh & Chartrand, 1999; Beckers, De Houwer, & Eelen, 2002; Neumann, Förster, & Strack, 2003) there are not many attempts to exploit these parallels.

There may be many reasons for this reluctance of social-psychological researchers to take up more concrete, finer grained processing models. One good reason is that coarser grained models are often fully sufficient to explain the phenomena of interest: If one can predict the likelihood and degree of activation of behaviorally relevant social stereotypes, say, why bother about how these stereotypes are cognitively represented, how they were acquired, and how their activation takes place? Another related good reason is that maintaining a relatively coarse level of theorizing makes it easier to relate the mechanisms of interest to other phenomena that are defined at more molar levels. For instance, knowing the environmental trigger conditions for automatic stereotype activation may suffice to contribute substantially to understanding the inner workings of group dynamics, whereas a complex network model of how stereotypes are represented in memory is likely to only complicate matters.

Obviously, researchers of social cognition are facing a dilemma: The more fine-grained their models get, the more closely they can connect to cognitive psychologists but the more difficult it is to relate their ideas to social or even sociological phenomena defined at more molar levels. And, reversibly, the more coarse-grained their models get, the better they can relate to molar phenomena but the wider the communicative gap to cognitive psychologists. Clearly, the most interesting and fruitful alternative is to place one's level of analysis right in the middle so to keep in touch with either community, a challenge shared by cognitive psychologists: Going for more fine-grained models makes it increasingly easy to talk to other "cognitive neurosciences," whereas getting more abstract facilitates communication with other psychologists, philosophers, anthropologists, and students of law.

The—for our present purposes—central implication of all this is that cognitive and social psychologists should try to keep talking and learning from each other but they should not, in my view, give up their own unique perspectives. On the one hand, maintaining these unique perspectives necessarily implies limitations of communication and theoretical exchange: the average cognitive-psychological model is likely to stay too concrete, too fine-grained for social-psychological purposes, and the average social-psychological model will remain too abstract, too general for cognitive-psychological aims. This means that the interest cognitive psychologists will have in social psychology, and vice versa, will remain limited. However, I think that the tension that emerges from these limitations in the compatibility of theoretical language and preferred analytical grain size creates a healthy challenge to either subdiscipline, a challenge

that will help prevent cognitive theories from losing themselves or even dissolving into mere physiology and social-psychological theories from losing touch with the actual mechanisms underlying the regularities they intend to explain. A good example for how important it is to keep in touch and find a common theoretical language is the recent book project of Maasen, Prinz, and Roth (2003), which contrasts accounts of human intentional action from numerous disciplines, ranging from physiology to sociology. Taken together, the contributions demonstrate that true insights into the workings of goal-directed behavior presuppose a deeper understanding of how neurophysiological and behavioral evidence of a large degree of automaticity and unconscious goal-striving gets together with the doctrine of will and self-determination that underlies social interaction and legal decision making in at least Western societies. Other multifaceted topics that call for a broad, interdisciplinary approach are the (individual and social) control of attention or the acquisition and cognitive representation of the meaning of objects, events, and acts.

## CONCLUSIONS

To summarize, I doubt that characterizing and distinguishing between cognitive and social psychology in terms of the phenomena looked at makes sense. I do think, however, that these two subdisciplines differ with regard to the way they look at their phenomena—hence, in their perspective. I think this is good. What we could improve, though, is the effort we put into confronting these perspectives, and into confronting them in a goal-directed, collaborative fashion. Sharing common research goals and, ideally, the impressive grants necessary to reach them, will stimulate and reward the efforts required to listen and trying to understand each other, and to eventually overcome the still existing conceptual and terminological barriers—not to become and do the same, but to enrich each other's perspectives and, thereby, to highlight and set into perspective one's own limitations.

## REFERENCES

- Allport, G. W. (1985). The historical background of social psychology. In L. Gardner & A. Elliot (Eds.), *The handbook of social psychology* (Vol. 1, pp. 1–46). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Bargh, J. A., & Chartrand, T. L. (1999). The unbearable automaticity of being. *American Psychologist*, *54*, 462–479.
- Beckers, T., De Houwer, J., & Eelen, P. (2002). Automatic integration of non-perceptual action effect features: The case of the associative affective Simon effect. *Psychological Research*, *66*, 166–173.
- Chen, M., & Bargh, J. A. (1999). Consequences of automatic evaluation: Immediate behavioral predispositions to approach or avoid the stimulus. *Personality and Social Psychology Bulletin*, *25*, 215–224.
- Hommel, B. (1993). Inverting the Simon effect by intention: Determinants of direction and extent of effects of irrelevant spatial information. *Psychological Research*, *55*, 270–279.

- Maasen, S., Prinz, W., & Roth, G. (Eds.). (2003). *Voluntary action: Brains, minds, and sociality*. Oxford: Oxford University Press.
- Moore, C., & Dunham, P. J. (1995). *Joint attention: Its origins and role in development*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Murphy, S. T., & Zajonc, R. B. (1993). Affect, cognition, and awareness: Affective priming with optimal and suboptimal stimulus exposures. *Journal of Personality and Social Psychology*, *64*, 723–739.
- Neumann, R., Förster, J., & Strack, F. (2003). Motor compatibility: The bidirectional link between behavior and evaluation. In J. Musch & K. C. Klauer (Eds.), *The psychology of evaluation: Affective processes in cognition and emotion* (pp. 762–768). Mahwah, NJ: Lawrence Erlbaum Associates.
- Prinz, W., & Hommel, B. (Eds.). (2002). *Common mechanisms in perception and action: Attention & performance XIX*. Oxford: Oxford University Press.
- Rizzolatti, G., Fogassi, L., & Gallese, V. (2001). Neurophysiological mechanisms underlying the understanding and imitation of action. *Nature Reviews*, *2*, 661–670.
- Schultz-Gambard, J., Feierabend, C., & Hommel, B. (1988). The experience of crowding in real-life environments: An action oriented approach. In D. Canter, J. C. Jesuino, L. Soczka, & G. M. Stephenson (Eds.), *Environmental social psychology* (pp. 94–105). Dordrecht: Kluwer Academic.
- Schultz-Gambard, J., & Hommel, B. (1987). Sozialpsychologie und Umweltgestaltung: Der Beitrag der Crowdingforschung. In J. Schultz-Gambard (Ed.), *Angewandte Sozial-psychologie: Konzepte, Ergebnisse, Perspektiven* (pp. 251–264). München: Psychologie-Verlags-Union.
- Strack, F., Martin, L., & Stepper, S. (1988). Inhibiting and facilitating conditions of the human smile: A nonobtrusive test of the facial feedback hypothesis. *Journal of Personality and Social Psychology*, *54*, 768–777.
- Tomasello, M., & Call, J. (1997). *Primate cognition*. New York: Oxford University Press.