# Teaching Current Directions in Psychological Science

March 30, 2016

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Correcting Our Stereotype of Stereotypes

Is Cognitive Control a Uniquely Human Capability?

## Correcting Our Stereotype of Stereotypes

*By David G. Myers*

**Jussim, L., Crawford, J. T., & Rubinstein, R. S. (2015). Stereotype (in)accuracy in perception of groups and individuals. *Current Directions in Psychological Science, 24*, 490–497.**

Among psychology's familiar lessons are:

Stereotypes are prejudice-supporting *misperceptions of groups*. They are biased beliefs, albeit sometimes exaggerations of "kernels of truth" (Allport, 1954).

As cross-cultural psychologists have repeatedly shown, *groups differ*. We humans are multicultural and should not hesitate to embrace our identities and affirm and respect our differences.

Humans are *natural social psychologists*. We observe and infer. Our ancestors survived by becoming reasonably accurate observers. They discerned what a facial expression predicts and whether to regard another group as friend or foe.

But consider: If the second and third lessons are valid, then might not our beliefs about groups — our stereotypes — often be accurate rather than biased? Such is the contrarian idea articulated by Yueh-Ting

Lee, APS Fellow Lee Jussim, and Clark McCauley (1995) in their edited volume, *Stereotype Accuracy: Toward Appreciating Group Differences*, now updated in this concise, thought-provoking essay by Jussim, Jarret Crawford, and Rachel Rubinstein (2015).

To introduce the reality of group differences, instructors could offer data from three domains for which we have both panhuman and cultural data:

- *Worldwide life expectancy* is 71 years but varies from 46 years in Sierra Leone to 84 years in Japan (World Health Organization, 2015).
- *Worldwide obesity* is 37% but varies from 3% in Timor-Leste to 85% in Tonga (Ng, 2014).
- *Worldwide religiosity* is 68% (those who agree that "Religion is important in my daily life") but varies from 16% in Estonia to 100% in Niger (Diener, Tay, & Myers, 2011).

Ergo, we humans are kin beneath the skin. But how we differ!

To introduce stereotyping, instructors might ask students to write down two things that come immediately to mind when thinking about these (or other) groups: *Japanese, football players, women, librarians.* Likely, they will have impressions of what's distinctive about these groups — impressions that may or may not be accurate.

## Measuring Stereotype Accuracy

So how might we assess the accuracy of stereotypes — of, say, a belief that men are taller on average, or more (or less) aggressive or socially connected, than women? In two ways, note Jussim, Crawford, and Rubinstein:

*Discrepancy scores* compare perceivers' stereotypes to a criterion, such as census data from different groups. For example, do people overestimate, underestimate, or accurately estimate the average male–female height difference?

*Correspondence scores* record the correlation between perceptions and criteria. Mindful of meta-analysis criteria for medium and large effects, Jussim et al. consider correlations below .25 as inaccurate, those of .40 and above as accurate, and those in between as moderately accurate.

Their bottom-line conclusion: "Stereotype accuracy is one of the largest and most replicable findings in all of social psychology." Although stereotypes are far from perfect, "accuracy dominates bias" (Jussim, 2012).

## Variations in Stereotype Accuracy

But some stereotypes are more accurate than others. Widely shared perceptions of race and gender differences in wealth, education, and other characteristics tend to be "highly accurate," conclude Jussim and colleagues. That's especially so among educated people, who seemingly have greater knowledge of group differences. Moreover, when people are inaccurate, Jussim and colleagues provocatively add, the stereotypes they hold tend most often to *underestimate* actual group differences.

On the other hand, widely shared stereotypes of national character traits (e.g., which countries have the most agreeable or conscientious people) have generally *not* been confirmed by Big Five trait assessments from various countries. So stereotypes can err. And stereotypes can feed polarization. Americans — especially extreme political partisans — have exaggerated views of their opponents' actual positions and moral values. Liberals and conservatives differ, but not by as much as they suppose.

Both 20th- and 21st-century history offer many examples of prejudicial stereotype exaggerations: Nazi stereotypes of sinister Jews, racist stereotypes of African American welfare abusers, and fear-fueled stereotypes of Muslim immigrants as potential terrorists. Hatemongers spread pernicious stereotypes. And illusory correlations (inaccurate stereotypes) also can arise from the vivid juxtaposition of two comparatively infrequent categories (such as terrorist acts and American Muslims).

## Do People Use Stereotypes When Judging Individuals?

When a stereotype is highly diagnostic and we lack information about someone's personal characteristics, then reasonable people may apply their stereotypes. If "George" is known to be a football player, we may — knowing nothing more — infer that George is probably muscular, or perhaps a "dumb jock." But when individuating information is available (when we can look at and talk to George and judge for ourselves), then people generally use that information, ignoring their stereotypes.

To demonstrate that stereotypes generally do not entice people to ignore salient individual differences, Jussim will invite a very different-looking student of his gender to stand next to him. He then asks:

"Are we male or female?" (Everyone agrees they are both male.)

"Do people hold stereotypes about males and females?" (Again, students agree, yes.)

"Can you nevertheless see differences between us?" (Students laugh, acknowledging that any gender stereotypes do not preclude their seeing individuals for who they are.)

To further demonstrate that a stereotype can be valid even when some individuals do not fit it, Jussim suggests asking students, "Which is warmer, New Jersey or Alaska?" or "Which is colder, New Jersey or California?" He picks an example that allows noting (in this instance) an Alaskan city that is currently warmer than his own New Jersey town, or a California city that is colder. "So, is the generalization that Alaska is colder inaccurate?" (No.) "Why not?" (Because generalizations don't apply to all individual cases, and generalizations can never be assessed by individual anecdotes.)

Finally, instructors might reflect on and discuss our definitions of "stereotype" and "prejudice." Are stereotypes, as Jussim et al. and other social psychologists suggest, "beliefs about groups"? Or is a stereotype, as the *Oxford English Dictionary* says, a "fixed and oversimplified" idea?

In other words, is a stereotype a *generalized belief* about others (often accurate, but sometimes inaccurate), or is it (as implied by the 18th- and 19th-century metal "stereotype plates" cast for printing identical images) an *overgeneralized* idea that overestimates the similarity of out-group members (while recognizing the differences among people in one's own group)? (Jussim et al. note that if we were to define stereotypes as inaccurate or overgeneralized social beliefs, then no belief could be a stereotype

until shown to be inaccurate. Note also that neither of these definitions implies *essentialism* — the presumption that racial or gender group differences are inherent and immutable.)

Instructors also could note that even accurate stereotypes may predispose prejudice, as when dominant group members attribute real group differences to presumed deficiencies, such as laziness or irresponsibility.

## Conclusions

So what can we say about stereotypes? They are, if defined as generalized beliefs about social groups, often accurate and sometimes inaccurate, but are not inaccurate simply by virtue of being generalizations. The presumption that all stereotypes are inaccurate is, ironically, an inaccurate stereotype.

These data also speak to a widespread concern that social psychology is inherently liberal. Although social psychologists *are* mostly political liberals (Haidt, 2016), psychological science at its best checks its own biases against reality (Duarte et al., 2014). In response to attacks on their findings of faculty preferences for female candidates, Past APS Board Member Stephen Ceci and APS Fellow Wendy Williams (2015) reported that "Our guiding principle has been to follow the data where it takes us." In their research, as in these stereotype-accuracy studies, liberal assumptions (of rampant sexism and ubiquitous exaggerated stereotypes) have, the researchers argue, crashed against a wall of data.

In other cases, liberal assumptions fare better. Many data have affirmed progressive assumptions concerning the dynamics of prejudice and the social toxicity of economic inequality (Pickett & Wilkinson, 2011).

Ergo, it's neither conservative nor liberal for psychologists to follow the data, and for psychology's researchers and teachers to give the data a voice. Evidence-based psychological science at its best is humane, compassionate, and courageous in its pursuit of truth.

# Is Cognitive Control a Uniquely Human Capability?

*By Gil Einstein and Cindi May*

**Beran, M. (2015). Chimpanzee cognitive control. *Current Directions in Psychological Science, 24, 352–357.***

Think about the last visit you had with old friends. You probably mentally traveled back in time and relived old experiences. While telling stories, you likely evaluated your friends' familiarity with the events in the stories and used this to provide enough context so that everyone understood them. When listening to your friends, you maintained your attention while ignoring background distractions. Despite your love of the chocolate truffles being served, you may have considered the consequences of eating too many (e.g., stomachache, extra work at the gym, concern about taking more than your fair share) and exercised self-control. Toward the end of the gathering, you probably thought about your future plans and then discussed possible opportunities to reconnect with your friends.

In interacting with your friends, you exercised a good deal of cognitive control, which generally refers to the ability to control your attention. Michael Beran (2015) defines cognitive control as including "a number of regulatory or executive processes that allocate attention, manipulate and evaluate available information (and when necessary seek additional information), plan future behaviors, and deal with distraction and impulsivity when they are threats to goal achievement" (p. 352). These are high-level processes that often are thought to be a hallmark of human intellectual functioning; an intriguing question is whether nonhuman animals also possess these higher-level cognitive capabilities. Beran, in his *Current Directions* article, reviews research at the Language Research Center that strongly suggests that chimpanzees possess at least some aspects of cognitive control.

In introducing this topic, you could ask students to form groups and think about how psychologists could go about designing behavioral experiments that would allow them to infer whether nonhuman animals can exercise self-control, defined as the ability to resist an immediate reward in favor of a delayed but more desirable reward. If students struggle, you can remind them of the concept of operational definitions and note that it is critical to develop a precise and empirically measurable definition of self-control.

After evaluating the suggestions of the student groups, you could tell them about classic research on self-control (using the marshmallow test) in preschool children by APS Past President Walter Mischel and colleagues (Mischel, Shoda, & Rodriguez, 1989). These studies presented children with the opportunity to have a smaller reward (e.g., one marshmallow) immediately or a larger reward (e.g., two marshmallows) later on. As can be seen in the video at tinyurl.com/SelfControlMarshmallow, many children were able to exercise self-control and delay their gratification. A provocative additional finding is that the successful children often developed self-distraction strategies (e.g., looking away or closing their eyes to avoid seeing the marshmallow) to help them regulate their self-control. Moreover, the more children delayed gratification, the more positive outcomes they showed years later in a variety of circumstances (e.g., higher self-control, higher SAT scores, and a better ability to cope with stress; Casey et al., 2011; Mischel et al., 1989; Shoda, Mischel, & Peake, 1990).

This child research offers a nice introduction to Evans and Beran's (2007) clever studies examining self-control in chimpanzees, highlighting how the same kind of question can be asked, but without need for verbal instructions. The basic procedure (which itself was an adaptation of a developmental testing paradigm; Toner & Smith, 1977) involved presenting chimpanzees with a desired food reward through an automated food tube. On each trial, some food was delivered early on and the food accumulated (up to a maximum amount) until the animal selected the food, at which point the trial ended and no more food would be delivered. Thus, chimpanzees could obtain a larger reward if they exercised self-control and waited. Evans and Beran found that chimpanzees waited (i.e., exercised self-control) in order to obtain more food.

To examine whether the chimpanzees strategically engaged in self-distraction activities to help themselves exercise self-control (as do young children), the researchers included an important additional condition. Specifically, the animals in this new condition were given the opportunity to distract themselves with objects (e.g., look at magazines, use a toothbrush or paper and crayons) during the delay interval. The critical question was whether the chimpanzees would take advantage of the objects to help maintain self-control. The answer: Yes! Chimpanzees who had access to food but could choose to wait for more did engage with objects, seemingly in an effort to distract themselves during the wait. In

support of this interpretation, chimpanzees in a control condition, who also had to wait but had no choice about waiting because the food was inaccessible, were less likely to engage with the objects. Thus, as seen in the video at tinyurl.com/ChimpSelfControl, playing with the objects was not simply a result of boredom or wait time; rather, it was an intentional diversionary strategy used by chimpanzees to help them exercise self-control.

Being able to delay gratification is just one aspect of cognitive control that seems to be present in chimpanzees. These chimpanzees also have demonstrated some metacognition, or the ability to know what they know and what they do not know (Beran, Smith, & Perdue, 2013; Beran et al., 2015), as well as the ability to anticipate information that they will need in the future and to encode that information before moving forward (Evans, Perdue, & Beran, 2014). Given that these abilities in humans are associated with conscious awareness, this could lead to an interesting discussion of whether nonhuman animals have conscious experiences and possible methods for approaching this fascinating question. œ

## References

Allport, G. W. (1954). *The nature of prejudice.* Reading, MA: Addison-Wesley.

Beran, M. (2015). Chimpanzee cognitive control. *Current Directions in Psychological Science, 24*, 352–357.

Beran, M. J., Perdue, B. M., Futch, S. E., Smith, J. D., Evans, T. A., & Parrish, A. E. (2015). Go when you know: Chimpanzees' confidence movements reflect their responses in a computerized memory task. *Cognition, 142*, 236–246.

Beran, M. J., Smith, J. D., & Perdue, B. M. (2013). Language-trained chimpanzees name what they have seen but look first at what they have not seen. *Psychological Science, 24*, 660–666.

Casey, BJ, Somerville, L. H., Gotlib, I. H., Ayduk, O., Franklin, N. T., Askren, M. K., … Shoda, Y. (2011). Behavioral and neural correlates of delay of gratification 40 years later. *Proceedings of the National Academy of Sciences, 108*, 14998–15003.

Ceci, S. J., & Williams, W. M. (2015, September 10). Passions supplant reason in dialogue on women in science. *The Chronicle of Higher Education.* Retrieved from chronicle.com/article/Passions-Supplant-Reason-in/232989

Diener, E., Tay, L., & Myers, D. G. (2011). The religion paradox: If religion makes people happy, why are so many dropping out? *Journal of Personality and Social Psychology, 101*, 1278–1290.

Duarte, J. L., Crawford, J. T., Stern, C., Haidt, J., Jussim, L., & Tetlock, P. E. (2014). Political diversity will improve social psychological science. *Behavioral and Brain Sciences, 38*, 1–13.

Evans, T. A., & Beran, J. J. (2007). Chimpanzees use self-distraction to cope with impulsivity. *Biology Letters, 3*, 599–602.

Evans, T. A., Perdue, B. M., & Beran, M. J. (2014). The relationship between event-based prospective

memory and ongoing task performance in chimpanzees (*Pan troglodytes*). *PLoS ONE 9*: e112015. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4221201/

Haidt, J. (2016, January 7). New study indicates existence of eight conservative social psychologists. *Heterodox Academy*. Retrieved from http://heterodoxacademy.org/2016/01/07/new-study-finds-conservative-social-psychologists

Jussim, L. (2012). *Social perception and social reality: Why accuracy dominates bias and self-fulfilling prophecy*. New York: Oxford University Press.

Lee, Y. T., Jussim, L., & McCauley, C. R. (Eds.) (1995). *Stereotype Accuracy: Toward Appreciating Group Differences.* Washington, DC: American Psychological Association.

Mischel, W., Shoda, Y., & Rodriguez, M. L. (1989). Delay of gratification in children. *Science, 244*, 933–938.

Ng, M. (2014). Global, regional, and national prevalence of overweight and obesity in children and adults during 1980–2013: A systematic analysis for the Global Burden of Disease Study 2013. *The Lancet, 384*, 766–781.

Pickett, K., & Wilkinson, R. (2011). *The spirit level: Why greater equality makes societies stronger.* New York: Bloomsbury.

Shoda, Y., Mischel, W., & Peake, P. K. (1990). Predicting adolescent cognitive and self-regulatory competencies from preschool delay of gratification: Identifying diagnostic conditions. *Developmental Psychology, 26*, 978–986.

Toner, I. J., & Smith, R. A. (1977). Age and overt verbalization in delay-maintenance behavior in children. *Journal of Experimental Child Psychology, 24*, 123–128.

World Health Organization. (2015, accessed December 31). Life expectancy. World Health Organization. Retrieved from www.who.int/gho/mortality_burden_disease/life_tables/en/