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DISPELLING MYTHS ABOUT THE RELATIONSHIP BETWEEN LANGUAGE AND THOUGHT

The Language Hoax: Why the World Looks the Same in Any Language

By John H. McWhorter. Oxford, England: Oxford University Press, 2014. xx + 182 pp. Paperback, $14.95.

It seems like only yesterday that our inquiry into the literature came from mainstream journals like this one and its many descendants. Included in the required literature were only a few books. For the cognitive psychology revolution, the most popular were Ulric Neisser's *Cognitive Psychology* and Don Norman's *Memory and Attention.*

Today our curiosity is fed more by the mass media than mainstream journals. When is the last time you picked up *The New York Times* or *The Wall Street Journal* and did not see an article reporting some behavioral or neuroscience discovery? Not to mention the many TED Talks that are required viewing to stay informed of the exponential growth in so many areas of inquiry. Admittedly, our behavioral science has become increasingly interdisciplinary, but this does not account for the pervasiveness of many of the innovations and new discoveries in behavioral science in our popular media. A couple dozen articles selected from *The New Yorker* alone could bring an undergraduate up-to-date on many of the domains of inquiry in our psychological science. Popular books such as the one being reviewed here also give behavioral scientists much food for thought.

Book, Author, and Thesis

John Hamilton McWhorter's little but thorough book, which he calls a manifesto, fits this mode of communication, although he is not a journalist by trade but is qualified as a bona fide linguist and certainly a brilliant and engaging one. McWhorter is an associate professor in the English and Comparative Literature department at Columbia University. He is a prolific author and political commentator on topics ranging from language to race relations. His specialty research studies how creole languages develop and their influences on language change. Although he is a senior fellow at the Manhattan Institute, a libertarian think tank, he characterizes himself as "a cranky liberal Democrat." His TED Talk (McWhorter, 2013) is an engaging treatise demonstrating that texting is an

interesting development in language use and does not forebode the end of good reading and writing skills.

McWhorter's writing is refreshing in a way that is rare in our mainstream journals. One finds statements such as "the mental candlepower required of doing that puts a temporary block on the processing of language" (pp. 8–9) or "To think of the most interesting thing about language as being how it sheds light on its speakers' thought processes is like cherishing Beethoven's Seventh Symphony not for its nimble melodies, richness of harmony, surging thematic progressions, and stirring orchestration, but for the handful of dimly flickering hints that it just might lend us about what Beethoven was like as a dude" (p. 58).

A central theme guides this excellent writing: Notwithstanding the huge diversity in human languages, we are all basically the same regardless of the language we speak. McWhorter takes on certain academics who propose that "people's languages channel the way they think and perceive the world" (p. ix). One of McWhorter's strategies is to use a reductio ad absurdum argument such as "Tribe without paper or pencils mysteriously weak at portraiture" (p. 12) and "Tribe without letters cannot write" (p. 14). Of course, if a person does not have the cognitive artifacts to support behavior, that person will not be likely to display that behavior.

Although McWhorter documents the huge diversity in the languages of the world in this book as well as his previous books (McWhorter, 2001, 2011), he consistently reminds us that this diversity should not lead us down the path of explaining why any language differs from another. An important point consistently made by McWhorter is that chance plays a much bigger role in the diversity of languages than most people are willing to accept.

His perhaps libertarian goal is to establish that all humans are mentally alike. Experimental evidence for the well-known Sapir–Whorf hypothesis that language influences thought is happily accepted and clearly explained but dismissed as miniscule in the grand scheme of language and thought. McWhorter's main point of contention throughout his review of the literature is that observed behavioral differences in the laboratory should not be considered psychologically significant.

Antithesis

But language can have important consequences. More than eight decades ago, Carmichael, Hogan, and Water (1932) illustrated the impact of language on memory. Their participants viewed drawings of several different ambiguous objects and were asked to reproduce them at a later time. If a name or description was paired with a drawing, the participants drew an object representing the name rather than the object itself. For example, when shown an object that could easily be interpreted as crescent moon or the letter C, they later drew the object as a less ambiguous token of how it was labeled during its original presentation. When no name was given, the drawing remained ambiguous. This result, as simple as it seems, reveals that language does influence thought when thought is defined as how we remember. The experiment also anticipates the plethora of research showing how malleable memory is and how it is dramatically influenced by accompanying linguistic narratives during the original event or some time afterwards (Loftus, 2005). In one episode of *M*A*S*H,* Hawkeye and Trapper create a fictional Captain Tuttle whose fame proliferates within the unit, culminating in General Clayton's decision to award him a medal. Furthermore, specific language characteristics appear to play a role in terms of what people remember when using English, which does not always note the intent of an action, and Spanish, which does (Fausey & Boroditsky, 2011). This can lead to differences in how people remember what they saw, which is potentially important in eyewitness testimony.

Let us consider a prototypical neo-Whorfian experiment in color processing, a popular domain for investigating the relationship between language and thought. In an early study, Kay and Kempton (1984) tested participants from two languages that either had two words for blue and green colors or had just one word. They found that the subjective distance between colors along the green–blue continuum depended on the rater's language. English participants perceived a larger difference between greens and blues than Tarahumara speakers, who have just one word, *siróname,* for these colors.

Imagine 20 different patches of blue colors ranging from a light or powder blue to a dark or navy blue (see Winawer et al., 2007). Observers are shown a target color and pair of colors below the target color and indicate as quickly as possible which of these two colors matches the target color. Different languages, such as English, call all of these colors blue. Russian, on the other hand, has different color terms for the "light" (*goluboj*) and "blue" (*siniy*) colors. When the two alternative colors have the same name, both the

Russian- and English-speaking observers are 124 ms slower than when they have different names.

McWhorter claims that finding a 124-ms difference in an experiment showing that language influences perception is insignificant in the grand scheme of language and thought. As an example, can we expect that having one or two words for blue or even absence of a word for blue "really impact[s] one's experience of a Chagall more than education, experience, or even mere variation between individuals' receptivity to art?" (p. 12). Would the different shades of blue in his *Time Is a River Without Banks* have dramatic consequences for viewers armed with different vocabularies for the blue section of the color spectrum? One could measure artistic experiences of viewers with different blue vocabularies. For McWhorter, the differences would be no more meaningful than the very small differences you experience between two very similar lenses your optometrist shows you during an eye exam. We agree because the many possible influences on experiencing art would probably overwhelm any impact of the viewer's vocabulary for colors. More generally, depending on the task, the individual draws on different resources, including the lexicon, in a Bayesian fashion, to generate some behavior or have a particular experience.

For us and for front-line experimentalists, however, one-eighth of a second is an eternity during which significant processing can occur. Experimental research has repeatedly shown that this time period can be sufficient for resolving the meaning of an input, switching attention between events, or retrieving an event from memory. Although the reader might be convinced by McWhorter's captivating analysis, the Sapir–Whorf hypothesis should not be so easily dismissed. There is no doubt that language attunes us to many aspects of our world. Perhaps the best evidence for this proposition is found in the domain of language acquisition, rather than in cross-linguistic comparisons.

Research has documented that children use perceptual, linguistic, and conceptual information to impose meaning on linguistic input, for example in the acquisition of new vocabulary. These multiple sources of information continue to play a role in our everyday interaction with the world around us. How language attunes a child to an event is convincingly illustrated by an experiment carried out with 9-month-old infants (Balaban & Waxman, 1996). After familiarization with a set of pictures, the infants were shown a picture paired with a spoken word (a picture of a rabbit paired with the spoken word "rabbit"). Other infants had the same procedure, but the pictures were now paired with a tone. When the infants were later shown an exemplar from a new category (e.g., a pig), only the infants in the label category preferentially looked at this new category compared with a new exemplar from the old category (e.g., a new rabbit). These results can be interpreted to mean that in the presence of a label, infants group together two similar exemplars into a single category more readily than in the absence of a label.

Xu (2002) provides a convincing demonstration of how language influences word learning in 9-month-old infants. Infants watched the experimenter pull an object from behind a screen that was hiding the object. In one condition, two different objects were given different spoken names when the objects were pulled from behind the screen. Thus, the little tykes saw and heard "duck" on one trial and saw and heard "ball" on another. A second condition was identical to the first except the two different objects were given the same name. In both conditions, the trials were repeated a few times to ensure the baby's familiarity with the routine. During the test, the screen was lifted, exposing just one or both of the objects that the child had seen. The infants in both conditions should have expected to see both objects behind the screen, not just one. But, in fact, the infants in the two-word condition learned more about the objects: They looked longer when only a single object was exposed, indicating that they were puzzled given their expectation of two objects. The infants in the one-word condition, on the other hand, looked longer when two objects were revealed, indicating that they were puzzled given their expectation of just a single object.

A word is very important for understanding how something works. Even though his father cautioned him that simply naming a thing is not sufficient for understanding, Richard Feynman's father understood how a word can embellish thought. The Eskimos may not have 100 words for snow (Pullum, 1988) but their day-to-day life depends on being able to discern subtle differences in the weather, and much of it revolves around snow. So it would not be surprising that their linguistic repertoire might consist of some important aspects of snow, which would facilitate a child's learning of these features of her environment.

There is even strong evidence demonstrating that labels can facilitate category learning in adults (Lupyan et al., 2007). Participants were asked to learn to categorize pictures representing two groups of "aliens" as those to be approached or those to

be avoided. They were given accuracy feedback on each response: One set of participants also received a nonsense label defining each group of aliens, and the other set of participants did not. Although the labels were redundant given the accuracy feedback, they significantly improved category learning. The participants in the no-label condition needed about 15–20% more learning trials to achieve asymptotic performance than that needed by those in the label condition. Furthermore, the linguistic label appeared to be the critical feature responsible for the learning advantage because a second study demonstrated that simply learning a nonverbal association did not facilitate categorization. A speaker's language can be considered a cognitive artifact in the same manner as other more apparent artifacts such as pencils, bicycles, and a Google search query. Language embellishes the range of behavior, learning, and experience.

Ecological Validity

To capture McWhorter's attention, should psychologists spend more effort at discovering how language influences thought in the real world rather than simply demonstrating how it does in a narrowly defined situation? McWhorter certainly devotes more effort to addressing the putative relationship between future-marking languages and savings rates in Keith Chen's study. Chen analyzed the savings rates of dozens of countries and whether their languages marked the future in their grammar. He found that people who speak languages that do not mark the future save 4.75% more of their income than those who speak languages that do mark the future. This counterintuitive finding did not sway Chen from proposing that somehow languages that do not mark the future make people pay more attention to the future (Whorf would not be happy because he implied that the many words for snow are responsible for the Eskimos attending to snow). McWhorter dissects Chen's findings country by country to make transparent the inconsistencies in these data. Just as importantly, he argues that deciding whether a language marks the future is just as dangerous as determining how many words a language has for a concept such as snow (Pullum, 1988).

McWhorter might be questioning the ecological validity of the neo-Whorfian demonstrations of linguistic influences on perception, memory, and thought. After exemplary careers in experimental psychology and like the conversion of Paul on the Damascus Road, Ralph Haber (1983) and Ulric Neisser (1976) rejected the ecological value of most prevalent laboratory experiments. Their argument includes the futility of using tachistoscopic (short duration) presentations of letters and words in isolation to shed light on the process of reading continuous text. Since that time, however, results of many eye movement studies during continuous reading have fundamentally reinforced most of the findings from these early experiments. The psychological phenomena of persistence, backward masking, priming, and the influence of orthographic, lexical, and sentential constraints have been verified in both domains of inquiry. Contrary to our reading experience, we actually do read in a lightning storm. Notwithstanding this example, perhaps throwing an ecological validity dimension into the mix would contribute to a better understanding of the issues and help pave the way to progress in the Whorfian debate. Eskimos need all the cognitive resources they can muster to estimate the affordances of that patch of snow or ice they are about to step on.

NPR's show called "How Language Seems to Shape One's View of the World" (2014) includes a story about famed author Vladimir Nabokov. Nabokov was fully trilingual in English, French, and Russian. He wrote three memoirs. He first published one in English, and when another publisher asked for one in Russian, he accepted, thinking he would simply translate his first memoir. When he began the translation into Russian he started to remember things he had not recalled when writing in English. Thus the Russian version became a different book. So the version of his autobiography we know now is actually a third attempt, where he had to recall more things in Russian and then retranslate them from Russian back into English.

Proper Inquiry

McWhorter provides a cautionary tale to those who want to contrast different languages along some dimension and then offer a rationalization of why these languages differ. Consider the following scenario. We know that the pace of life differs across different nations, and we could hypothesize, analogous to Chen, that the difference might be related to how quickly the nation's language is spoken. Spoken languages are produced at rates that can differ by about a factor of two (Pellegrino, Coupé, & Marsico, 2011). A Whorfian-style hypothesis would claim that speaking rate depends on the pace of life in the nation speaking it. However, the reason for these different rates appears to be due to the information density of the speech: Some languages are more informatively

dense than others, and it appears that all (probably with some exceptions) languages are spoken at a rate to have about the same density. If your language is less dense, you speak more quickly so your listener stays attentive. This example illustrates that contrasting behavior from different language groups is not necessarily futile, as long as multiple hypotheses can be tested.

As expected, there is evidence from many situations in which language does not make a difference. As an example, Li, Abarbanell, Gleitman, and Papafragou (2011) studied an indigenous Mayan language, which uses directions that roughly correspond to compass points rather than left or right. Researchers asked people, most of whom knew only this language, to do tasks such as memorizing how a ball moved through a maze, which might have been easier had they thought about it in terms of left and right rather than compass points. The participants were just as good at these tasks and sometimes better, leading the experimenters to conclude they were not constrained by their language. Our behavior is influenced by many different information sources, which could easily overwhelm the impact of a person's language.

Retrospective

The bottom line is that McWhorter accepts "academic neo-Whorfianism" but rejects how it is commonly interpreted outside the laboratory. For McWhorter, thought is not shaped by language, nor is a person's thinking limited by her language. The existing language is an outcome of a long history of multiple influences interacting with sensory, perceptual, and cognitive systems well below the consciousness of current interlocutors and also largely immune to experimental enlightenment. He adds a caveat that this solipsistic view does not open the door to a system that is encapsulated from other systems, as for example in Chomsky's "language acquisition device." Perceptual capacity does not vary across languages, even though, as discussed in the previous presentations of neo-Whorfian results, the linguistic armor hosted by a speaker will necessarily heighten his or her attention to some aspects of the world relative to others. His advice for scholars is that finding relationships between culture and language among just a few languages is not productive and in most cases is misleading. Any correlations that are revealed will easily be contradicted by finding other languages that show a different relationship.

To close, we applaud the depth of the author's manifesto in terms of the expansive literature cover-

age, historical developments, and implications for social science. We recommend it to anyone with an interest in language and thought who also likes a good read. In retrospect, we hope we have stepped up the dialog between McWhorter and the neo-Whorfians by not only adding to the experimental literature that language makes a difference but also addressing relevant metatheoretical issues. Although McWhorter questions whether language differences amount to different ways of experiencing existence, we wonder whether he can give an accounting for the quite significant differences in worldviews between cultures (e.g., Nisbett, 2003). Does he really believe that various cultural events and evolving linguistic norms do not recursively feed back on each other, producing, at any point in time, a language that constrains and guides behavior according to that history?

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