Categorical Necessity and Utility of Stereotyping and Totemic Thinking: Analyzing and Reviewing the Stereotype Epa Theory, Social Perception Accuracy, and Female Hurricanes

By Yueh-Ting Lee

University of Toledo, United States

Abstract- Surprisingly, research scientists, scholars or lay people in the United States or elsewhere tend to see stereotypes as negative and inaccurate. Because stereotypes are regarded as taboos, we are usually told not to use them at all. Further, little research has been done on the relationship between stereotyping and totemic thinking. However, in order to survive and function well through millions of years, our ancestors and modern human beings unconsciously and consciously use stereotypes and totems almost every second of the day, which is consistent with Darwin's evolutionary science. This article addresses three aspects of the categorical necessity and utility of stereotypes and totems. First, I will address what totemic thinking is and how totems are related to stereotypes theoretically through evolution. Second, I will analyze and review Jussim's (2012) book on social perception and social reality, which tells us how modern social psychology fails to acknowledge the overwhelming evidence of stereotype accuracy research. Finally, I will critically examine a recent scientific article about gender stereotypes and female hurricanes by Jung, Shavitt, Viswanathan, and Hilbe (2014) in the Proceedings of the National Academy of Sciences (PNAS) of the United States of America.

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Abstract- Surprisingly, research scientists, scholars or lay people in the United States or elsewhere tend to see stereotypes as negative and inaccurate. Because stereotypes are regarded as taboos, we are usually told not to use them at all. Further, little research has been done on the relationship between stereotyping and totemic thinking. However, in order to survive and function well through millions of years, our ancestors and modern human beings unconsciously and consciously use stereotypes and totems almost every second of the day, which is consistent with Darwin's evolutionary science. This article addresses three aspects of the categorical necessity and utility of stereotypes and totems. First, I will address what totemic thinking is and how totems are related to stereotypes theoretically through evolution. Second, I will analyze and review Jussim's (2012) book on social perception and social reality, which tells us how modern social psychology fails to acknowledge the overwhelming evidence of stereotype accuracy research. Finally, I will critically examine a recent scientific article about gender stereotypes and female hurricanes by Jung, Shavitt, Viswanathan, and Hilbe (2014) in the Proceedings of the National Academy of Sciences (PNAS) of the United States of America. In brief, to function well or even survive, human beings have to count on categorical thinking (including stereotypes and totems) evolutionarily.

Keywords: *stereotype necessity and utility, totemic thinking, social perception accuracy, evolution.*

I. Introduction

" I took it for granted that the mind forms categories…People put things and other people into mental boxes, give each box a name, and thereafter treat the contents of a box the same." --- Pinker (1997, p. 306)

Stereotypes and stereotype accuracy are taboos today. When we talk about the validity and accuracy of stereotypical thinking, we need be to very careful because we may be easily accused of racism, sexism, ageism, classism, ableism, and numerous other types of "ism." Although, as human beings, we should be humanitarian and humanistic toward each other and oppose any form of social injustice (such as unfair discrimination, unjust racism, or unjust sexism etc.), the

Author: Department of Psychology University of Toledo, Ohio.
e-mails: yt.lee@utoledo.edu, liyueting@yahoo.com

truth is that we cannot function or even survive without stereotyping, totemic thinking, or other categorical information in our daily life as a human species. We use stereotypes, totems, or other ways to categorize both the human and physical world almost every moment. Thus, this article aims to address three major issues. First, I will address what totemic thinking is and how totems are related to stereotypes theoretically, which is essential to understanding how categorical thinking helps us to survive and function better. Second, I will review and analyze Jussim's (2012) book on stereotype accuracy, which tells us how modern social psychology fails to acknowledge the importance of stereotype accuracy research. Finally, I will critically examine a recent scientific article about gender stereotypes and female hurricanes by Jung, Shavitt, Viswanathan, and Hilbe (2014) in the Proceedings of the National Academy of Sciences (PNAS) of the United States of America.

II. Evolution, Stereotypes, Totems, and the epa Theory

In 1859, Charles Darwin described his observations of several animals as follows, "Cats with blue eyes are invariably deaf...Hairless dogs have imperfect teeth; long-haired and coarse-haired animals are apt to have, as is asserted, long or many horns; pigeons with feathered feet have skin between their outer toes; pigeons with short beaks have small feet, and those with long beaks large feet" (Darwin, 1859/2006, p. 456). These are just examples of categorical thinking that Darwin used to describe animals in evolutionary science at that time.

Judging from today's criteria, did Darwin use stereotypes (or categories) to describe the animal world? Absolutely he did. His observations were accurate stereotypes of animals. These observations are no different from the observations we usually hear stereotypically: White men cannot jump; East Asians (e.g., Chinese) have slanted eyes (Lee, 2011); and young women with blonde hair are dumb (Kanazawa, 2012; Miller & Kanazawa, 2007). These often-spoken stereotypes are negative and perhaps accurate

observations of human beings, which may have a biological, psychological and evolutionary complexity behind each of them. Though some researchers on stereotypes address the evolutionary basis of stereotype accuracy (see Barkow, Cosmides & Tooby, 1992; Baron, 1995; Fox, 1992; Kanazawa, 2007; Lee, Jussim & McCauley, 1995; Ottati & Lee, 1995; Miller & Kanazawa, 2007; Neuberg & Sng, 2013; Pinker, 1997, 2002, 2011), a cautionary note is in order. Even when we say White men cannot jump, it does not mean they cannot jump at all. Relatively, those White men whose ancestors were from Europe may not jump as well as those Black men whose ancestors were from Africa.

There are several more clarifications. First, stereotypes involve a comparison or reference group (e.g., black and white, female and male). Second, when we talk about stereotypes, it is not a zero-sum game but a matter of degree. Third, if accurate and still used, certain stereotypes may be related to biological, psychological, evolutionary and many other factors. Finally, as part of categories, stereotypes are functional (see Allport, 1957; Fiske & Taylor, 2013; Pinker, 1999, 2002). This is because categories are useful when they mesh with the way the world works. As Pinker (1997) put it,

Fortunately for us, the world's objects are not even sprinkled throughout the rows and columns of the inventory list defined by the properties we notice. The world's inventory is lumpy. Creatures with cotton-tails tend to have long ears and live in woodland clearings; creatures with fins tend to have scales and live in the water. Other than in the children's books with split pages for assembling do-it-yourself chimeras, there are no finned cotton-tails or floppy-eared fish. Mental boxes work because things come in clusters that fit the boxes. (p. 308)

From the clarifications above, we come to realize that stereotypes are more complicated than many scholars or lay people have thought.

Research on stereotypes and categorical beliefs is rooted in classic work in psychological perception and cognition, which is based on reality (Jussim, 2012; Lee et al., 1995; Lee, Ottati, Lin & Chan, 2014). James (1890/1980) conceived of beliefs as based in reality, and beliefs imply every degree of assurance, including the highest possible certainty and conviction (p. 913). Lippmann (1922/1965) first described stereotypes explicitly as "pictures in our heads" (p. 3), and they may "contain much that is profoundly and importantly true" (p. 80). Philosophically and psychologically (e.g., Campbell, 1967, Popper, 1979), for example, groups could be regarded as World 1; the thinking or mental processing of those groups could be seen as World 2. Though not always accurate, our stereotypic perceptions or human beliefs could be referred to as World 3. Based on Worlds 1 and 2, World 3 is probably the outcome of our physical and social reality.

In social psychology, research on stereotypes and stereotyping is complicated but fruitful (e.g., Fiske, 1998; Jussim, 2012; Lee, Jussim & McCauley, 1995, 2013; Lee, McCauley & Jussim, 2013; Nelson, 2009; Pinker, 1997, 2002; Ryan, 2002; Schneider, 2004). However, due to the scope and nature of this article, I will only focus on the cubic EPA theory of stereotypes and stereotyping (Lee, 2011; Lee, Bumgarner, Widner & Luo, 2007; Lee, Jussim, & McCauley, 1995, 2013; Lee, Ottati, Lin, & Chan, 2014; Lee, Vue, Seklecki, & Ma, 2007) to understand the complexity and challenge in relation to totems and other categories. In this EPA theory, three dimensions of stereotypes are identified in Figure 1 (see Figure 1). "E" represents evaluation or valence (ranging from positive to negative emotion). "P" represents potency or latency of activation or knowledge (ranging from automatic activation to little or no activation). "A" represents accuracy (ranging from accurate to inaccurate). Evaluation (positive-negative), Potency (active-inactive), and Accuracy (accurate-inaccurate) are not dichotomous, but continuous dimensions (McCauley, Stitt, & Segal, 1980; Osgood, 1952, 1979).
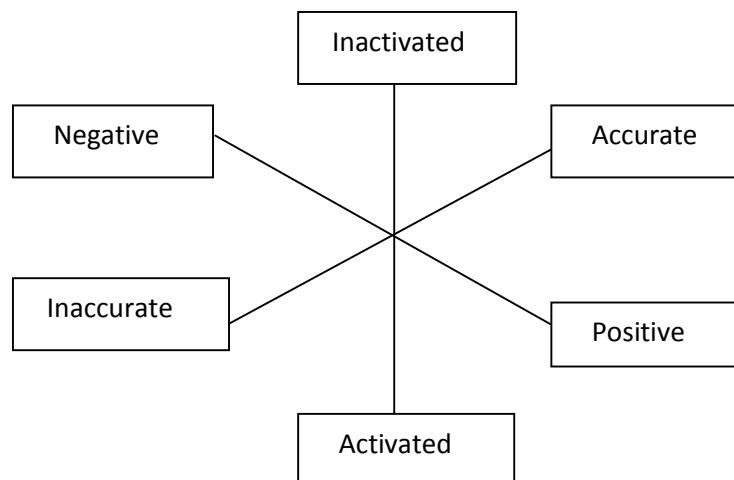

Figure 1 : Cubic EPA Model of Stereotypes (i.e., shown as corners of a cube)

The impact of any stereotype or human categorical belief (including totems or religions) is determined by its combination of evaluation (or valence), potency (knowledge), and accuracy. Assume that an individual is a Christian. S/he might think that the categorical belief in Christianity is more positive for a devout Christian (who may have a positive emotion for Jesus) than a non-Christian individual (i.e., evaluation). S/he may know much more about the Bible and retrieve more information about the Bible than the non-Christian person (i.e., potency). The accuracy is cultural and spiritual correspondence between what s/he believes and what s/he experiences in reality (i.e., experiential accuracy or truth), or accuracy may indicate that Christians read or use the Bible more often than non-Christians (i.e., behavioral accuracy—see Funder, 1987; Jussim, 2005; Lee & Jussim, 2010; Lee et al., 1995; Kenny, 1994; Oakes, Haslam, & Turner, 1994; Pinker, 2002; Triandis, 2009; Triandis & Vassilisou, 1967).

If the above chart (see Figure 1) on the EPA theory is indirect, we can better visualize stereotypes when we break it down into two dimensions (evaluation and accuracy) in Figure 2 (see Figure 2) as follows.
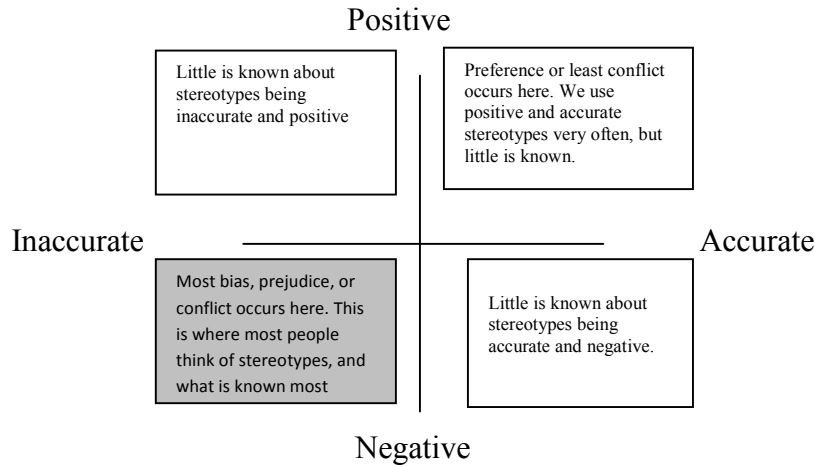
Positive

Little is known about stereotypes being inaccurate and positive	Preference or least conflict occurs here. We use positive and accurate stereotypes very often, but little is known.

Inaccurate ———————————+——————————— Accurate

Most bias, prejudice, or conflict occurs here. This is where most people think of stereotypes, and what is known most	Little is known about stereotypes being accurate and negative.

Negative

Figure 2 : Valence (or Evaluation) and Accuracy of Stereotypes

Whenever we think about stereotypes, we typically mean the bottom-left quadrant—i.e., inaccurate and negative stereotypes. However, according to Lee, Jussim & McCauley (1995, p. 17; Lee, 2011), social scientists need to understand mental representations of social groups in the other three quadrants, which is essential. This is because stereotypes are not necessarily negative or inaccurate (i.e., prejudice). Prejudice is not equal to stereotyping but just a small portion of negative and inaccurate stereotypes. Positive and accurate perceptions about individuals in certain groups or categories could help us to understand and appreciate human differences socially, culturally, and/or biologically (Lee, 1996; Lee et al., 1995). Even negative but accurate perception of certain individuals may help us to deal with some social problems more realistically and effectively rather than denying real social problems. For example, how much do we understand stereotypes being positive and accurate (see the upper-right quadrant) and being accurate and negative (see the bottom-right quadrant)?

Regardless of valence or evaluation (i.e., the level of positive or negative emotion), we have to depend on categorical stereotypes. Our decisions and judgments have to be made "with finite time and resources," (Pinker, 2002, p. 148), and they may have high costs for certain kinds of errors. We therefore must use some common traits or properties to make some decisions or judgments about people or things--i.e.,

based on our conscious or unconscious categorical stereotypes.

From a perspective of Darwinian evolutionary science, human beings cannot function efficiently or hardly survive without categorical thinking and beliefs, including our daily stereotypes and totems, given limited lifetime, limited resources, much uncertainty and/or great danger facing us as humans. Unfortunately, little attention has paid to the accuracy, valence (or evaluative emotion) and knowledge (or potency) simultaneously of these categories (Lee, 2011; Lee, Jussim, & McCauley, 1995, 2013; Lee, McCauley & Jussim, 2013) from an evolutionary perspective. If stereotypes involve perceptions of certain social categories (Eiser & Stroebe, 1972; Pinker, 1997, 1999, 2002; Tajfel, 1981), evolutionarily, totems might be the earliest categorical representations of animals, plants, and inanimate objects in essence (Descola, 2013; Durkheim, 1915/2008; Freud, 1913/1950; Lee, 2010, 2014; Levi-Strauss, 1962, 1966; Palmer, Steadman, Cassidy, & Coe, 2008; Pedersen, 2001; Wundt, 1912/1916). Totems are perhaps the origins of our categorical thinking including stereotypes, our names, and religions or spiritual beliefs (see Lee, 2014).

As an essence of human categorical representations, much interdisciplinary research has been done on totems and totemism for 150 years (McLennan, 1869, 1870; Morgan, 1877/1974; also see Boas, 1916; Durkheim, 1915/2008; Frazer, 1910; Freud,

1913/1950; Goldenweiser, 1910; Jones, 2005; Lang, 1905; Lee, 2010, 2013; Levi-Strauss, 1966; Wundt, 1912/1916). Originally, a totem was seen as a belief regarding certain categorical things (e.g., animals, plants, or objects) that are commonly and sacredly shared and worshipped by a group of people (family, clan, tribe), specifically including primary "features of the relations between human beings and the classes of animals, plants or inanimate objects which constitutes the essence of totemism" (Rivers, 1909, p. 156). Today a totem or totemism may also be a link from the natural world (e.g., animals, plants, or objects) to the human world (e.g., humans themselves, social divisions or categories/kinships), though it may have a religious nature when people of certain groups show respect to their totems (i.e., positive affiliation or evaluative emotion about the natural world). For example, according to Levy-Strauss (1962, 1966), totems are the fundamental ways human beings categorize the physical world in order to survive and function. More recently, Bateson (2002) described totemism as "much more like an incorporation or marriage of ideas about the world with ideas of self" (p. 131).

In relation to stereotypes, totems are common and important not only because they are elements of religious life (Durkheim, 1915/2008), but also because today they are the expressions of the marriage between the natural world and human world, including the self. Can we function well without totemic classifications? Perhaps we cannot. Totems linking the natural world with the human world help us to categorize animals, plants, objets/things, and humans cognitively. Totems and stereotypes serve the same categorizing function. Examples include but are not limited to: a sport team's mascot, the family name, the flag or symbol, a Christian's God , a society's icon, or other common features of any group (e.g., a family, clan, tribe, nation, company, institution, club, and/or any other types of group or organization).

Further, if social representations aim to "make something unfamiliar, or unfamiliarity itself, familiar" (Moscovici, 1984, p. 24; Moscovici, 1973, 1988) via anchoring and classifying ideas or things in relation to everyday categories (p. 29), then totems are excellent examples to make something unfamiliar familiar. If one of the primary functions of stereotypes is to categorize individuals of groups based on certain properties or identities (Lee et al., 1995; Pinker, 1999, 2002; Tajfel, 1981), then stereotypes, totems and other cultural beliefs are the outcomes of human categorizations and representations (Moscovici, 1984, 1988). Therefore stereotypes (or stereotyping), totems (or totemic thinking) or other categories are much needed if we human beings continue to function or even to survive as individuals and as a species.

Do we see totems every day in our modern life? Absolutely we do. For example, in addition to our names

and religions as traditional totemic vestiges, a natural flag is no different from a totem or a totem pole (see Durhheim, 1915/2008; Lee, McCauley & Jussim, 2013). How is it related to the EPA theory of stereotypes? As we can see in Figure 3 (American Flag Eagle: Pictures & Images, 2014), this flag with an eagle is more positive to Americans than to non-Americans (i.e., evaluation)—see Figure 3. Emotionally, many Americans may feel angry or upset when this flag is being burnt by non-Americans (e.g., those people in the countries of the Middle East).

Figure 3 : American Flag with a Bald Eagle (cited from American Flag Eagle: Pictures & Images, 2014).

With regard to potency, Americans can immediately recognize the American flag more easily or effortlessly when seeing it than when they see the national flag of other countries (e.g., China or Russia). It is related to accuracy when an individual says that the American flag has stars and stripes with red, white, and blue colors and that it is a star-spangled banner. It is inaccurate if s/he says the American flag has a yellow color with a moon on it. Thus, a national flag is a totem that, as analyzed above, is consistent with the EPA theory categorically.

In summary, consistent with Darwinian evolutionary science, we cannot function or survive without categorical thinking including stereotypes and totems as a human species. The EPA theory can be applied to stereotypes and totems as categories. We also attach our emotion or valence to those categories (Evaluation), and they are also stored in our memories (Potency). Both are valid and accurate categorical entities that help us to understand the human and physical world (Accuracy) so that we can survive and function well, which is necessary and useful.

Stereotype Accuracy over Inaccuracy: Reviewing and Analyzing Jussim's (2012) Book on Social Perception and Social Reality.

In the history of psychology, especially social and personality psychology, no one has done a better job than Lee Jussim who recently published a book on social perception accuracy and social reality (Jussim,

2012). It is a milestone not only for scientists, pundits, and other scholars but also for lay persons.

Are we really irrational and heuristically biased in our decisions, social judgments, and perceptions? Are our stereotypes inaccurate and false? Are self-fulfilling prophecies as powerful as those scholars reported? Mainstream psychology tends to agree. But since the systematically scientific publication on accuracy by Lee, Jussim, and McCauley (1995), Jussim (2012) has reviewed and analyzed much more studies on stereotype accuracy and provided "No's" to all those questions. Further, he examined the condition in which people do not use stereotypes and still make accurate judgments and perceptions (i.e., when individual information is available) and the condition in which people indeed use stereotypes and still have accurate perception (i.e., when no information, no useful information, or ambiguous information is provided). Like the yin-yang perspective, biases and accuracy occur simultaneously right alongside one another, but research evidence reviewed by Jussim (2012) showed that bias is generally small compared to accuracy. Although people are not perfectly rational and unbiased, they are frequently pretty darn good. Thus Jussim's research seems to raise a scientifically strong voice against those mainstream social psychologists or other pundits who have a deep-seated "social psychological bias in favor of bias" (Jussim, 2012, p. 423).

Further, Jussim's writing is courageously ingenious and uniquely critical and insightful. For example, according to Jussim (2012) science is never pure but value-laden. In a sense, this is similar to Kuhn's view that science is socially constructed and culturally received (see Kuhn, 1962; Voosen, 2014). Jussim (2012) stated that certain scientists' agenda or motivation may affect how and why they present scientific data and how and why they include inaccuracy or bias-oriented researchers as in-group members while marginalizing research findings of stereotype accuracy--i.e., "intellectual imperialism" referring to "the occasional tendency in intellectual/scholarly circles to attempt not only to promote one's favorite theory, perspective, or methodology, but also to denigrate, dismiss, and in effect, quash alternative theories, perspectives, or methodologies" (Jussim, 2012, p. 148).

Stereotypes and stereotyping are negatively or inaccurately sensitive words as recognized by Nobel Prize Winner D. Kahneman (2011) and most scientists or lay persons in today's society. Though acknowledging stereotyping as "neutral," Kahneman (2011) put stereotypes connotatively in a negative and inaccurate way. Much different from Kahneman's research and other mainstream psychology, Jussim (2012) boldly and ingeniously addressed that research on stereotype accuracy (or even talking about stereotype accuracy) does NOT enhance racism, sexism, ageism, classism or other social injustice. In fact, it helps us to appreciate diversity and multiculturalism and solve real social problems between groups with differences, which may be consistent with other classical research on stereotype accuracy (Lee, 1996; Lee & Jussim, 2009).

However this does not mean there is no malicious racism, sexism, ageism, classism, or other social injustice that may be related to inaccurate stereotypes. As acknowledged by Jussim (2012), not all stereotypes are accurate, and those that are inaccurate may be the most damaging, especially those politically manufactured ones which are intentionally designed to despoil the reputation of particular groups.

A cautionary note is in order here. Jussim is very candid and honorable when presenting a list of its limitations (see Jussim, 2012, pp. 390-391). For example, though Jussim did a superb job in reviewing almost all major studies on stereotypes and self-fulfilling prophecies, his coverage was primarily limited to personality and social psychology. It would be much nicer to also include stereotype accuracy studies perhaps from other fields. Also Jussim claimed that prejudice and discrimination are quite important and can be very destructive. It would be more scientific to state that socially unjust prejudice or discrimination is terribly destructive. In addition to categorical stereotypes, human beings do have categorical prejudice and do need categorical discrimination in order to function and survive as discussed above. For instance, some Asians have prejudice toward cheese while certain Europeans may have negative attitudes toward tofu. As far as I know, many Asians (including myself) have lactose intolerance when they eat much dairy food. Thus it is normal and unavoidable to have prejudice (Lee, 1996). Also, we do use discrimination daily, from manuscript screening, personnel selection, mating, dating, to reading books or articles. All this shows an observed range of discriminative human behaviors (Lee et al., 1995; 2013; Pinker, 1997, 1999, 2002, 2011). As a step toward rational ordering and thinking, human categorization or classification (e.g., totems, stereotypes, and discrimination) has helped humans to function well and survive efficiently for millions of years (Levy-Strauss, 1962, 1966).

In summary, while mainstream social psychology ignores accuracy research, Jussim (2012) has documented a tremendous amount of research evidence of stereotype accuracy over inaccuracy since the earlier publication by Lee, Jussim and McCauley (1995). Learning about this book and his other research on social perception accuracy is like taking a wonderful vacation--a great intellectual and scholarly vacation for the minds of all people, not only for scientists --e.g., any psychology students, faculty, researchers and other scientists or pundits, but also for professionals, practitioners, policy-makers, and lay persons.

Categories of knowledge mismatched—Examining Jung et al. (2014)'s PNAS article on female hurricanes.

Recently Jung, Shavitt, Viswanathan and Hilbe (2014) published an article titled "Female hurricanes are deadlier than male hurricanes" in the Proceedings of National Academy of Sciences (PNAS) of the United States of America. They reported six experiments. This research is very interesting, and the authors brought up a very good point--female names of hurricanes made people act less quickly (e.g., delay to evacuate) and thus there were more deaths, which is probably related to gender-expectation, sexism, or implicit gender bias.

Given the findings and statistical data by Jung et al. (2014), the conclusion about gender-related stereotypes that caused more death is far from definitive or premature. There are so many other confounding variables involved than the gender expectations or stereotypes that may cause people to lower perceived risks or to be less prepared (also see Bower, 2014). There was no way to measure the seriousness and rapidity of each hurricane. There are some severe flaws with this research as can be seen below.

First of all, the researchers (see Jung et al., 2014) only examined the hurricanes in the USA (1950-2012). Why did they not examine the hurricanes in the past 100 or 150 years? Why did they not examine the hurricanes beyond the USA (i.e., worldwide data)? If other countries do not use gender-related names (say using animals or plants etc.) for hurricanes, does this mean that people can increase their perceptions of risk and be better prepared? Their research could not provide us with natural meteorological data outside the USA or the American data in the past 100 or 150 years. The sixty-year data with gender names cannot be conclusive statistically. Perhaps the death rate of American hurricanes might have nothing to do with sexism or implicit bias.

Second, those six experiments by Jung et al. (2004) have several limitations. First, if hurricanes are part of Mother Nature, to what extent did their participants (Ps) in those experiments understand this? In other words, how positive and negative were their Ps toward hurricanes? The authors have never examined this. Assume that all their Ps are negative (say M= 1.1) toward hurricanes on a seven-point scale from 1 (negative) to 7 (positive). How about their positivity and negativity toward those human names? In fact, in their Table S3, the authors stated in their notation, "Overall, perceived masculinity-femininity of the names was not correlated with attractiveness" or "with intellectual competence." In other words, their Ps were very neutral toward both male and female names (with a mean of approximately 3 or 4). This shows that Ps showed no sexism or implicit bias in terms of the preference for male or female names unless there was a social desirability or political correctness among the Ps.

Third, conceptually, natural disasters (e.g., hurricanes) are not equal to actual human beings. Giving any human male or female names may lead some people to an association with gender stereotypes or expectations. To a certain extent, it may be correct. Let us focus on the relationship between stereotypes and totemic psychology (see Lee, 2014; Lee, McCauley, & Jussim, 2013). Let us forget male or female names. Hypothetically, we will run an experiment on Hurricane Pigeon (that is peaceful) and Hurricane Tiger (that is aggressive). Chances are we may get the same results. Thus it is not gender but the fear that might make people act faster psychologically. In fact, their Experiments 5 and 6 measured female warmness and male aggressiveness, but their interpretation did not touch human fear, which may have nothing to do with gender (also see Bower, 2014).

Fourth, numerous studies in psychology and evolutionary science showed the accuracy of gender stereotypes that males are more aggressive than females, who are more caring (see Eagly & Wood, 2012; Jussim, 2012; Kanazawa, 2012; Lee, Jussim, & McCauley, 1995, 2013; Lee, McCauley, & Jussim, 2013; Miller & Kanazawa 2007; Pinker, 2002). For example, according to Sarah B. Hrdy's (2009) evolutionary research, the mothers of the majority of primates were found to care for their children and fathers were found to engage in fierce contests or competitions with other males:

To put men in perspective, step back for a moment and consider paternal behavior in broad comparative perspective, across all 5,400 or so species of mammals in the world. In the majority of them, fathers do remarkably little beyond stake out territories, compete with other males, mate with females. With outlandish auditory and visual displays which often entail specially evolved weaponry, bellowing, barking, or roaring, males engage in fierce contests to rout their competitors. Then 'Slam, bam and thank you ma'am ' and the inseminator is off. Male caretaking is found in only a fraction of mammals. (Hrdy, 2009, p. 159)

If males are basically more aggressive while females are warmer and more caring, this accurate categorical thinking or stereotype has a biological and evolutionary basis. Based on our EPA theory as described above (evaluation-potency-accuracy--see Lee, McCauley & Jussim, 2013), accuracy and positive emotion (or evaluation) of ethnic or gender stereotypes may be more related to evolution as can be seen in Hrdy's work (2009) and may also be related to cultural or gender role or identity rather than racism or sexism (also see Lee & Duanas, 1995). It is very unfortunate to mismatch positive gender role (e.g., warmness or caring of females) with the negative fearful natural disaster (e.g., to name a hurricane Alexandra).

Finally, there is a very important point that is worth mentioning. Cognitively and evolutionarily, we

cannot function without totems as much as we cannot function without stereotypes, which can help us to survive and function well (Lee, 2014). As discussed above, both stereotypes and totems are based on categories (see Lee, McCauley & Jussim, 2013; Lee, 2014). Much research has shown that a totem is a connection between ourselves as humans and nature itself (see Durkheim, 1915/2008; Freud, 1913/1950; Levi-Strauss, 1962; Wundt, 1916). One of the totemic perspectives is nominalistic theory (see Lee, 2014). We need to differentiate among human beings by using animal or plant names for ourselves, and our last name is still the vestige of totems (e.g., Rose or Rosemary, Wolf, Eagle, Rice). In the meanwhile, there are so many hurricanes, and thus we need to differentiate them by giving each a name categorically. Therefore Jung et al. (2014) picked up a right question but perhaps gave a wrong answer when overstating the influence of gender bias. In all fairness, it might be better to avoid giving hurricanes human names (either male or female). Instead, we may use fearful animals or thorny plants to name hurricanes in order to arouse human fear and reduce death. In brief, Jung et al.'s (2014) recent report might have nothing to do with sexism or implicit bias, but negative damage-related category of hurricanes should NOT be associated with the positive caring/warm category of females. It is better not to use gender to name a hurricane if we want to respect and protect life.

III. CONCLUSION

If "categories have stereotyped feathers: traits that everyone associates with the category" (Pinker, 1999, p. 274), totems are the earliest representations of categorical thinking (i.e., totemic mind, see Lee, 2014). Human beings cannot function well or even survive without categorical thinking including stereotypes or totems. This article first focuses on the EPA theory that is used to analyze stereotypes and totems as valid/accurate and evaluative categories that are stored in our mind (or in our memory as a potency). Also Jussim's (2012) recent work on social perception accuracy demonstrated much more evidence of stereotype accuracy than inaccuracy in social psychology, which has been unfortunately marginalized by mainstream psychology. Finally, I critically examined the recent research by Jung et al. (2014) and found the names of female hurricanes may have nothing to do with sexism or implicit bias. Inaccuracy or invalidity may occur when categories are mismatched. However, research on stereotype accuracy is politically and scientifically no easy task. Our EPA theory is a unique contribution to science and the academic field. As time goes, more and more scientists and lay people may agree that we cannot survive or function without categorical thinking (including stereotypes and totems), which is consistent with evolutionary science.

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