

Stereotyping: The Effect of Author's Education on Perceived Writing Ability

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The current study evaluated educational achievement stereotyping and its presence in reading. Ninety-one undergraduate participants read the same article with varying authors and answered the same questionnaire. There were nine conditions where authors varied by gender (male, female, or anonymous) and education level (high school senior, Ph.D., or anonymous). It was hypothesized that male participants would judge female authors more harshly than males, female participants would judge all authors less harshly than males, and that authors with a Ph.D. would receive higher scores than other authors. Results showed that male participants judged all authors, regardless of gender, more harshly than females. Authors with a Ph.D. received higher scores than high school students, who scored higher than authors without given educational information.

Stereotyping can be described as a set of ideas about a group of people that are based on the actions of an individual in that group, and are then generalized to all individuals who fall into that category, such as race or gender. These ideas are most likely false and are viewed as true regardless of what situation presents itself with a member of a stereotyped group. For example, a student's level of achievement in his/her education may override the amount of attention paid to his/her actual abilities, based on the stereotype that perhaps a college graduate is better at writing than the average high school student. This possible stereotyping might be seen frequently in job application situations. Whenever filling out a job application the question of educational background is assessed. Therefore stereotypes based on education are worthy of examination. In the current study, stereotypes about educational level were explored.

Prior studies by Devine (1989) found that the emergence of stereotypes could be either automatic or controlled. People who had more prejudice against others were more likely to let automatic stereotypes emerge than those with less prejudice. This was discovered after participants listed several components of the racial stereotype against Blacks and then filled out the Modern Racism Scale to gauge their level of prejudice. Based on their test scores, participants were split into high and low prejudice groups. Devine (1989) found that regardless of the

level of participant's prejudice, all participants were equally knowledgeable of stereotypes.

Other studies have looked at how attention affects stereotypes. Pratto and Bargh (1991) were able to show that stereotyping was present in every situation participants viewed. Participants were shown slides containing acts of a target person, described as either male or female and afterwards, participants answered a questionnaire that looked at the sex stereotypes of each target. The attention allotted was altered by changing the amount of time the slides remained on the screen. The type of stereotype changed depending on the amount of time given to the participant to read each slide. Pratto and Bargh (1991) showed that with more attention time given to a participant, the more specific to the person's traits the stereotypes. Participants unable to attend to the person were more likely to apply a global stereotype that fit less well with the target.

Studies have since been performed to find out if changing when the attention variable is placed, either while processing or applying stereotypes, would affect stereotypic beliefs (Gilbert & Hixon, 1991). In order to do this, participants were presented with distractor information while either viewing the target person, or while viewing and hearing the target person speak about his/her daily life. It was discovered that during the activation stage of stereotypic processing, participants needed to concentrate, but during the application phase they needed to be distracted in order to produce highly stereotypic responses (Gilbert & Hixon, 1991).

Other research has looked at the ratings given to individuals based on their intelligence and personality, by strangers, partners, self-rating, and actual test scores (Borkenau & Liebler, 1993). Participants viewed a target person and then answered a questionnaire about his/her personality and intelligence. The target person had previously answered a similar questionnaire about them and

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taken an intelligence test. Through the many tests and conditions that were employed it was seen that there was a positive correlation between the ratings given to an individual by a stranger, and the ratings the individual gave himself/herself. Evidence was shown that some information is passed between individuals and strangers unintentionally that has to do with personality and intelligence (Borkenau & Liebler, 1993).

More specific stereotyping research has looked at the effect of the perception of a topic by both the rater and writer on the scoring of the essay (Yun, 2003). Yun had teachers explain their position on a topic prior to rating an essay that was either similar or opposite to their opinion, and then they were allowed to score the essay. Yun (2003) showed that perception of the topic by the scorer in a writing sample did not affect the way in which the scoring was done. Related research on the “better-than-average effect” was completed by Alicke and Klotz (1995). The better-than-average effect implies that most participants will judge themselves above average (Alicke & Klotz, 1995). In order to show the better-than-average effect they had college students compare themselves with either an average college student or a specific target. Participants consistently rated lower than themselves the average peer but not the specific target. In other words, most participants will judge their own peers much lower than themselves. Given this information, the current study did not include authors who were in the same educational level as the participants, and authors were described by individual names instead of being identified as only male or female to avoid the better-than-average effect.

More directly related was research performed to test the perceptions of authors who leave spelling errors in their work. Multiple studies found that a large number of errors of any type will negatively affect an author’s perceived writing ability, but not one’s overall intelligence (Kreiner, Schnakenberg, Green, Costello, & McClin, 2002). These studies had participants read an article and then answer a questionnaire. In the article the amount of spelling errors was altered as well as the type of error, but the type of error did not have an effect separate from the effect of amount of errors.

Lastly, it was previously discovered that white males rate white females lower on writing clarity than other participants (Surmann, 1997). Also female participants did not score the articles as harshly as the male participants. Surmann’s study exemplifies the research that has been continued in the current study.

The current study analyzed the effects of educational stereotyping on an author’s perceived writing ability. The independent variable of educational level was operationally defined as the type of degree received, with high school diploma, Ph.D., and unspecified, as the three levels. The dependant variable, of author’s writing ability, was judged using a 6-point Likert scale ranging from lowest ability to highest. The author was also judged, with the same scale type, for the dependant variables of clarity, logic, intelligence, and writing ability. The independent variable of gender, of both author and participant, was taken into account to see if gender differences would occur as seen in Surmann (1997). Thus, for the author’s gender an anonymous condition was included.

It was expected that participants would rate higher on intelligence, logic, and clarity as well as overall writing ability the author with a Ph.D. than for the author with only a high school diploma. It was also expected that these differences in ratings would be largest in situations where the participants claimed to have little to no comprehension of the article being read. Conversely, it was expected that when the participant claimed to have a high level of article comprehension, the effects would not be seen to such an extent.

Method

Participants

Ninety-one undergraduates at a public northeastern university volunteered to participate in this study. Of the 91 participants, 32 were male, 53 were female, and six did not provide their gender. The participants ranged in age from 18 to 44 years. Seven participants were removed from certain analysis because they did not respond to all four rating questions.

Materials

The article “Knowing the Universe in Detail (Except for that Pesky 96 Percent of It)” (2006, October 24) was the primary stimulus (see Appendix A). Every copy of the article was identical, except for the author information, which was altered to create nine separate conditions. The author possibilities included: John Smith, John Smith West Haven High School Senior, John Smith Ph.D., Sarah Smith, Sarah Smith West Haven High School Senior, Sarah Smith Ph.D., West Haven High School Senior, the author has a Ph.D., and anonymous. The questionnaire (see Appendix B) included four questions pertaining to the participant, including age and gender. There was also a section concerning their comprehension which asked if they understood the article, (yes/somewhat/no), and an item asking them to describe the main point of the article. Finally there were four 6-point Likert scales addressing the author’s clarity, logic, intelligence, and overall writing ability.

Procedure

Participants signed an informed consent sheet as well as a research credit form. Through random assignment, 27 participants were in the male author condition, 30 were in the female author condition, and 27 were in the anonymous gender condition. Also, 28 participants were in the Ph.D. condition, 28 were in the high school condition, and 29 were in the anonymous education condition. The researcher then gave participants the article to read (see Appendix A) and questionnaire (see Appendix B) to complete. Once the questionnaire had been completed, participants were given a debriefing statement describing the purpose of the study and were then allowed to ask questions. During the scoring process, the Likert

scale results were averaged both as individual questions and overall for each condition, and compared with each other.

Results

A repeated measures and between-subjects factorial, with a .05 alpha level, was used to discover both the main effects and interaction of author education, author gender, the gender of the participants, and a rating manipulation check. The variable of educational level was explored through comparing three groups. As Table 1 shows, authors with a Ph.D. were perceived as more intelligent than high school authors. When comparing the averages of all four score sets, a significant difference was found, $F(2, 66) = 4.27, p = .018$. A Tukey's B post hoc test found that authors with a Ph.D. scored significantly higher than high school students who scored significantly higher than authors without given educational information.

Table 1
Rating Scores based on Educational Level

Educ. Level	N	Clarity		Logic		Intelligence		Writing Ability	
		M	SD	M	SD	M	SD	M	SD
H.S. Senior	28	3.39	1.10	3.45	1.02	4.34	1.08	3.86	1.06
Ph.D.	28	3.36	1.06	3.86	.848	4.86	.803	4.04	1.17
Anony-mous	29	2.96	1.13	3.36	.951	4.21	1.17	2.82	1.34

Also tested in the repeated measures general linear model was the variable of the authors' genders. As Table 2 shows, there was no significant difference amongst the scores given to authors based on the authors' genders, $F(2, 66) = .26, p = .772$.

Table 2
Ratings based on Author Gender

Author's Gender	N	Clarity		Logic		Intelligence		Writing Ability	
		M	SD	M	SD	M	SD	M	SD
Male	27	3.26	1.13	3.41	1.05	4.56	1.19	3.48	1.45
Female	30	3.37	1.03	3.67	.959	4.67	.922	3.63	1.19
Anony-mous	27	3.07	1.07	3.57	.879	4.18	1.02	3.61	1.29

The final main effect tested by the repeated measures general linear model was the effect of participant gender on the scores given to the authors. As Table 3 shows, male participants rated authors significantly higher than female participants did, $F(1, 66) = 4.27, p = .043$.

Table 3
Ratings based on Participant Gender

Participant's Gender	N	Clarity		Logic		Intelligence		Writing Ability	
		M	SD	M	SD	M	SD	M	SD
Male	32	3.59	1.04	3.88	.751	4.78	1.04	3.63	1.34
Female	52	3.02	1.09	3.35	1.03	4.29	1.04	3.52	1.28

Multiple interactions were analyzed using a repeated measures general linear model that did not produce any significant effects on the ratings of clarity, logic, intelligence, and writing ability of the authors, all F values < 1 .

Discussion

These findings suggest that there was stereotyping applied to the different authors' writing, which was based on their educational background. As hypothesized, authors with a Ph.D. were rated as having better writing skills and more overall intelligence than authors who were seniors in high school. The lack of significant interactions implies that the only aspect that created the main differences in scores was the educational background of the author. Since all articles were identical it can be assumed that participants based their ratings on the identifying information of the author and not the actual writing.

There was no apparent stereotyping of gender of the author. This shows a leap forward from the past when common belief was that men were superior to women and would be stereotyped as more intelligent to their female counterpart. The author was still stereotyped but not because of gender. Males and females achieved nearly equal ratings on writing ability, as long as they reached the same level of educational achievement, at least according to this sample.

The hypothesis about comprehension was not fully tested because none of the participants claimed they could not comprehend the main point of the article. In other words, none of the participants were confused as to the article's thesis statement. However, the hypothesis stated that the effects of stereotyping would not be seen if participants had a good understanding of the article. Therefore it can be assumed that comprehension did not affect the stereotyping of authors. Further research should be able to better test this hypothesis by using a more complex article or participants who will not fully comprehend the article. Once there are low and high comprehension groups, the two can

be compared side by side to get a better test of the hypothesis.

Inconsistent with Surmann's (1997) results, male participants in the present study, were easier raters than the female participants for all authors. Surmann (1997) found that male participants were harsher on females than any other authors, and female participants were easier on all authors than the male participants. These differences between studies could imply that such differences could be due to sample differences with the male participants selected, especially since males were under represented in contrast to the female participants in this study.

Future studies should also compare the differences that may be caused by having a picture as opposed to a name to identify the author. It is possible that seeing the image of the author as well as his/her name and credentials impacts the way that the reader rates his/her writing ability. There may be a correlation with the age that is assumed for a high school senior and a Ph.D. recipient that may also impact the stereotyping of the author's ability to write. There is a definite lack of research previously done on this topic that should be investigated more thoroughly.

It may be possible that the stereotyping employed by the participants of this study can also be seen in different situations presented when educational information is given about an individual. Would someone stereotype another whom they met on the street as more reliable, intelligent, capable, and/or morally corrupt simply based on his/her educational background? Are potential employees stereotyped by the amount of education they have received regardless of actual knowledge, ability, and/or experience? Could this mean that writing samples or essays are not necessary for job applications and position appointments?

The written word is not free from stereotyping as may have been previously believed. Further research will help us understand this phenomenon better. Possibly there will be no stereotyping in the future in any context, but until that day comes we can only hope to understand the how and why behind it, then maybe we can change it.

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Appendix A

Knowing the Universe in Detail

Written by: David Overbye

Hardly anyone remembers now, but 1991 was a bad year for the Big Bang. Astronomers were having more and more difficulty reconciling their models of the explosion that gave birth and impetus to the expanding cosmos with the structure of the modern universe, in particular the discovery of strings of clusters and so-called superclusters of galaxies going hundreds of millions of light-years across the sky. There was a rash of articles in prestigious journals like *Science* saying that major elements of the model, or even the Big Bang itself, might have to be junked. But in April 1992, George Smoot from the University of California, Berkeley, announced that the NASA satellite Cosmic Background Explorer, or Cobe, had detected faint irregularities in a bath of microwaves that pervade space. The microwaves are presumed to be cooling radiation from the original fireball, and the splotches were the right size to one day grow into giant clusters of galaxies. "If you are religious, it is like looking at God," Dr. Smoot said. This month Dr. Smoot and John Mather, of the Goddard Space Flight Center, the head Cobe scientist, were awarded the Nobel Prize in Physics. There was much talk that Cobe had marked a turning point, the beginning of a "golden age," in which cosmology went from a collection of vague ideas to a precision science. Indeed, subsequent observations have parsed the meaning of those lumps, allowing cosmologists to converge on a remarkably detailed picture of the universe. The Big Bang, they now say, happened 13.7 billion years ago, plus or minus 150,000 years. That is a far cry from the days when some astronomers were ready to go to the mat over whether it was 10 billion or 20 billion years ago and when others shrugged and said a factor of two was pretty good in cosmology. Moreover, they

