What it means to be "better": The role of comparison language in social comparison

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Abstract

Judgments of personal attributes are often informed by the social information available (Festinger, 1954). The results of social comparison can manifest as assimilation of judgments towards the comparison standard or the contrast of judgments away from the standard, and many theories attempt to describe the conditions under which the two patterns will occur (e.g. Mussweiler, 2003; Schwartz & Bless, 1992). Recent work on comparison-induced distortion (Choplin, 2007; Choplin & Hummel, 2002) highlights how the magnitude of difference implied by comparisons like "better" may influence estimates of the compared values and produce assimilation and contrast-like effects. We explored the influence of this *comparison-suggested difference* (CSD) on participants' performance estimates. In Experiment 1, we examined the effects of social comparison when the difference between participants' unbiased estimates and the standard did not agree with the CSD. Experiment 2 explored how comparison language (and the corresponding CSD) mediates the role of standard similarity in social comparison effects. Combined, these studies demonstrate that the outcome of social comparison can be influenced by the CSD of the comparison language applied.

Introduction

When a person compares herself to others, how does information about their attributes influence the way she understands or estimates her own? When objective information is unavailable, comparison with others may be sought to understand personal attributes (Festinger, 1954). For instance, understanding how liberal one is may involve comparing one's political opinions to the political opinions of one's social group. The effect of social comparison on evaluations of personal attributes is a well-established and active research area (Buunk & Gibbons, 2007).

Much of the research on social comparison can be characterized as an attempt to delineate conditions where social comparisons leads to bias away from the comparison standard in recall, estimation or judgment of personal attributes from conditions where social comparisons leads to bias towards the standard: these are respectively termed *contrast* and *assimilation* effects (e.g. Mussweiler, 2003; Stapel & Winkielman, 1998; Suls, Martin, & Wheeler, 2002). There are several cognitive accounts of these effects. For example, Mussweiler and his colleagues (Mussweiller, 2003; Mussweiler, Ruter & Epstude, 2004; Mussweiler & Strack, 2000) describe how a focus on similarities between one's self and a comparison standard leads to assimilation (the more similar one believes they are to the standard, the more similar judgments of one's personal attributes are to those of the standard), while focusing on dissimilarities leads to contrast. Schwartz and Bless (1992) appeal to the way in which comparison information is used to explain the different patterns: if the standard is used as a reference point against which to evaluate one's attribute, contrast results; if the standard is used to *interpret* one's ability or attribute, by including the standard information in the representation of the self, assimilation results.

Another factor that has not yet been considered in social comparison research is the role of comparison language and the magnitude of difference between compared values the language implies. Rusiecki (1985) found that participants interpreted comparison words like "taller" to imply a particular range of difference between values (e.g. 2-5 inches' difference for the women's heights), with substantial consistency across participants in the size of the inferred differences. The difference in magnitude implied by a comparison is the *comparison-suggested difference* (CSD) and can be estimated by asking pre-test participants to provide values that are, for instance, "much more" or "taller" than a comparison value: the difference between the median response and the comparison value is the estimated CSD for the comparison word or phrase (Choplin, 2007).

Recent research (Choplin, 2007; Choplin & Hummel, 2002) demonstrates that verbal comparisons and their comparison-suggested differences systematically bias evaluations, estimates and recall for compared values. The CSD for a comparison word (i.e. "smaller") determines how making a comparison will affect representation of the compared values. If two compared values differ by an amount less than the CSD, they will tend to be represented as further apart in magnitude than they actually are (Choplin, 2007). As a result, evaluations of the two values will be more different than they would have been if they were not compared, the values will be recalled as further apart than they actually were, and estimates of the values may be adjusted to be further apart. Similarly, two compared values that differ by more than the CSD will be represented as *closer* together in magnitude than they actually are (Choplin, 2007), and recalled, estimated or judged as closer together than if they had not been compared. This effect has been demonstrated with the recall of geometric shapes (Choplin & Hummel, 2002), estimates of building heights (Choplin & Tawney, 2005) and amount of food consumed (Choplin & Motyka, 2007).

Comparison-induced bias may produce *apparent* assimilation or contrast effects in social comparisons. For example, consider a comparison involving "taller." The median CSD for "taller" for a woman's height is 2 inches

(Choplin, 2007). If Jane is 5'7" and is compared to Beth who is 5'4" with "taller," the actual difference in their heights exceeds the CSD: the value that is a CSD greater than Beth's height is 5'6", shorter than Jane's height. In this case, comparison may result in Jane's height being estimated as closer to Beth's, an apparent assimilation effect. Conversely, if Jane were only 5'5", the difference between their heights would fall below the CSD. In this case, Jane's height might be estimated as taller than it is, contrasted away from Beth's height. Note that in both cases the compared value (i.e. Jane's height) is being assimilated towards the value that is a CSD from the standard, which is 5'6" in this case. Thinking about the outcome of social comparisons in terms of assimilation and contrast with regards to the *standard* may sometimes be misleading: adjustment may not be relative to the standard, but relative to the value a CSD away from the standard.

Comparison-suggested differences differ with the extremity of comparison language (e.g. "*a few* less" vs. "*a lot* less"), so this factor must also be taken into account when predicting the outcome of a social comparison. For example, we conducted a preliminary study examining how extremity of comparison language affected the outcome of social comparison. Sixty participants first estimated how many ads they had seen in the last 24 hours (their average first estimate was ~ 172 ads). The experimenter then told them that the average American sees roughly 3000 ads ever 24 hours. A language manipulation was introduced in the social comparison: half of the participants were told "you may see a few less ads than the average American;" the other half were told "you may see a lot less ads…" Pre-testing with a separate group of participants indicated that the comparison-suggested difference for "a few less" (median = 300) was smaller than that for "a lot less" (median = 1750). After hearing the comparison, participants gave a second estimate for observed ads: participants who heard "a few less" gave a second estimate closer to 3000 (M = 1513.17) than participants who heard "a lot less" (M = 655.17; $t(58)=3.361$, $p<.01$). In both conditions, the difference between the first estimate and the standard fell below the CSD, so both conditions produced apparent assimilation effects. However, the magnitude of these effects was determined by the CSD for the comparison.

As opposed to manipulating comparison language, the first experiment described below manipulated whether the difference between a participant's first estimate and the presented standard information fell below or exceeded the CSD. This manipulation should affect whether participants show assimilation or contrast towards the standard in making their second estimates. The second experiment manipulated the standard (more vs. less similar to participants) to examine the effects of standard similarity on the comparison language participants chose to make a social comparison (and the relevant CSD), and so the outcome of the comparison on their second estimates.

The task used in both experiments involved performance on a test of driving rules, a knowledge domain in which Windschitl et al. (2003) found the majority of their participants expected their performance to be superior to that of a competitor (the "better-than-average" effect; Alicke et al., 1995; Chambers & Windschitl, 2004). Using this domain allowed us to anticipate our participants' expectations for the ordinal relationship between their performance and that of the standard, and so provide appropriate comparison language.

Experiment 1

In Experiment 1, we explored the effects of social comparison on estimates of personal performance when the difference between unbiased estimates and the comparison standard was manipulated to be either less than the CSD or greater than the CSD for "better." We predicted that most participants would choose "better" to compare themselves to the average person on the driving test, activating the CSD for "better." We predicted that participants would adjust their first estimate down towards the average person's performance when the difference between the first estimate and the average person's performance was larger than the CSD for "better" and adjust up from the first estimate when the difference was smaller than this CSD. In this way, the same comparison standard and task description would produce both assimilation and contrast patterns of response.

Methods

Pre-testing

A group of 15 pre-test participants imagined that there was a multiple choice test about driving rules in the state of Illinois and stated how many questions they would answer correctly out of 50. They were then asked to imagine the performance level of the average person given that their performance was "better." The median percent difference between pre-test participants' estimates of their own performance and their estimate of the average person's performance was 17%. Thus, for Experiments 1 and 2, the estimated CSD for "better" was 17% more questions correct on the driving test.

Materials

The experimental materials described a multiple-choice test of driving rules in the state of Illinois with 50 questions. Participants estimated their own performance on this task and then heard comparison information. Participants in the *large difference* condition heard that the average person's performance was 25% less than their first response (recall that the CSD for "better" was 17%). Those in the *small difference* condition heard that the average person's performance was 2 questions less than their own first estimate. The reason for using a percentage rather than an absolute difference in the *large difference* condition was to prevent our large difference from being less than participants' actual first estimate; this practice was difficult to apply in the *small difference* condition, however, as for

some participants a very small percentage difference would be less than a 1-question difference. For this reason, we used an absolute difference of 2. Thus, in both conditions, participants were "better than average" in light of the comparison information. Participants were asked to choose a phrase to compare their anticipated performance on the test with that of the average person:

> *Compared to the average person, how do you think you would perform, approximately the same or better?*

Participants then provided a second personal performance estimate.

Procedure

All materials were presented verbally by the experimenter. Participants were randomly assigned to one of the difference conditions. They were to estimate how many questions they would answer correctly on the test of driving rules. After giving this estimate, participants were told the average person's score and asked to state "better" or "approximately the same" as their comparison with the average person's performance. After providing a second estimate, participants were thanked and dismissed.

Participants

The experimenter approached potential participants in public locations in the Chicago area. One-hundred eighteen people agreed to participate after being approached in this manner. The data of two participants were excluded due to experimenter error, leaving 57 in the *large difference* condition and 59 in the *small difference* condition.

Results

Choice of comparison phrase did not differ significantly between the *large* and *small difference* conditions ($X^2(2, N=116)=1.31$, $p=.25$). Participants showed a slight tendency across conditions to choose "better" as the comparison (54%). This was not significantly different from 50% (by binomial test, $p > .20$). Six participants opted to choose "worse" as their comparison, though this was not offered as an option. Only one of these participants provided a second estimate that was lower than the average person's performance. Excluding this participant from analyses did not change the pattern of results.

The average first estimate did not differ across conditions (40.3 in the *small difference*, 40.6 in the *large difference*). Figure 1 shows the average difference between first and second estimates for each condition (negative numbers indicate a second estimate higher than the first) overall and by comparison choice. Difference condition significantly affected the adjustment from first to second estimates ($F(1, 114) = 19.19$, $p<.001$): participants in the *large difference* condition decreased their second performance estimate from their first ($t(56) = 3.65$, $p < .01$), while those in the *small difference* condition increased their second estimate ($t(58) = -2.40$, $p < .05$).

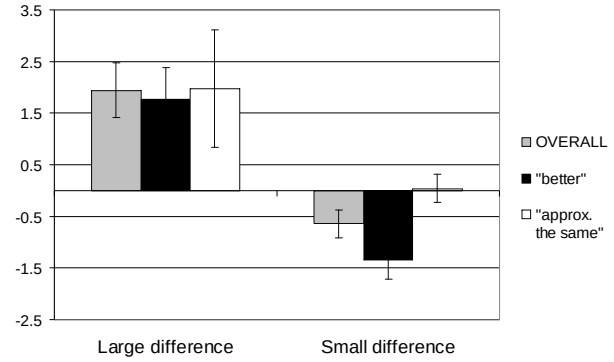

Figure 1. Average difference between estimates (first–second) in Experiment 1 by condition and comparison.

Although comparison language was not manipulated, it is worth noting that participants' second estimates reflected their comparison choice. Participants in the *small difference* condition who chose "better" adjusted their second estimate up from their first by an average of 1.3 questions; those choosing "approximately the same" tended to not adjust the second estimate (indicating that a 2-question difference was within the range of "approximately the same"). Participants in the *large difference* condition who chose "approximately the same" adjusted their second estimate down from the first by an average of 1.97 questions, whereas those choosing "better" adjusted their second estimate down by an average of 1.76 questions. The difference in adjustment for participants who chose "better" and those who chose "approximately the same" was significant in the *small difference* condition ($F(2, 56) = 3.57$, $p < .05$) but not in the *large difference* condition ($F(2, 54) = .24$, *n.s.*). The lack of a significant difference in the *large difference* condition is likely due to the CSDs for "better" and "approximately the same" both being less than the difference between participants' first estimate and the standard (the CSD for "approximately the same" would be ~ 0 questions). Thus we would predict that either comparison would be associated with adjustment down towards the standard, differing only in the degree of the adjustment. In the *small difference* condition, however, the direction of adjustment would be expected to differ with comparison, resulting in a more obvious difference between participants who chose "better" and those who selected "approximately the same."

Discussion

The results of Experiment 1 show that the outcome of social comparison depends in part on how the magnitude of the difference between the unbiased estimate of performance and the comparison standard matches up to the comparison-suggested difference for the comparison language. When the unbiased estimate is far away from the comparison standard (more than the CSD), participants adjust their estimate towards the standard, as in *assimilation* effects; when the difference between the unbiased estimate and the standard is less than the CSD, participants adjust their estimate away from the standard, as in *contrast* effects. Adjustment

towards or away from the standard did not occur because of changes in standard identity (e.g. a standard more likely to be used as a reference point vs. one more likely to be included in the self representation) or a change in focus on similarities vs. differences between the self and the standard, and so is not easily explained by current theories of social comparison (e.g. Mussweiler, 2003; Schwartz & Bless, 1992). Experiment 1 showed that responses consistent with assimilation and contrast can be found with social comparisons differing only in the magnitude of difference between a participant's unbiased estimate and the standard.

Experiment 2

Experiment 1 showed that when the magnitude of difference between participants' unbiased estimates and the comparison standard did not agree with the CSD for the comparison language, participants adjusted their estimates accordingly. This study focused on manipulating the degree of difference between unbiased estimates and the standard to be more than or less than the CSD for "better." In contrast, Experiment 2 manipulated the description of the comparison standard and so the language that participants were likely to choose for comparison with the standard. If participants use different comparison language for different comparison standards, this will affect CSDs and result in different patterns of adjustment for different standards.

In social comparison, standards who are more similar to the participants generally lead to assimilation patterns (e.g. Hoffman, Festinger & Lawrence, 1954). Conversely, standards more dissimilar to the participants often produce contrast patterns (e.g. Brown et al., 1992). The question we ask here is whether standard similarity also affects the language a person uses to compare herself to the standard. More dissimilar standards may prompt comparisons with larger CSDs (e.g. "much more," "better"), leading to estimates further from the standard; more similar standards may lead to comparison with smaller CSDs (e.g. "slightly more," "approximately the same"), encouraging estimates to be closer to the standard. The result of this comparison effect would be contrast patterns in the former case and assimilation patterns in the latter. Experiment 2 examined the potential mediating role of comparison language in the effect of standard similarity on social comparison effects.

Methods

Materials

The materials in Experiment 2 were identical to those in Experiment 1 except for the description of the comparison standard. After providing their unbiased estimate of performance, participants heard a performance level for either "the average Chicago, IL area resident" or "the average London, England area resident." Because participants were approached in the Chicago area, "the average Chicago, IL area resident" presented a more similar standard, while "the average London, England area resident" presented a dissimilar standard. As in Experiment 1, participants provided a first estimate, selected "better" or "approximately the same" to compare themselves with the standard, and made a second estimate. Also, as a manipulation check, participants provided a rating of how similar the standard's performance would be to theirs (1-10 scale, with 1 = not at all similar, 10 = completely similar).

Procedure

All materials were presented verbally by the experimenter. Participants were randomly assigned to the *London* or *Chicago* conditions. After providing their unbiased estimate, participants provided a similarity rating for the standard. They were then told that this standard answered 4 fewer questions correct that their first estimate. The difference size of 4 was selected because the results of Experiment 1 indicated that a difference of 2 questions fell within the range of the CSD for "approximately the same." With a difference of 4, participants choosing either "better" or "approximately the same" would be likely to adjust their second estimate from their first (though in different directions), as this difference magnitude was unlikely to meet the CSD for either comparison. After hearing this information, participants selected a comparison phrase to compare their anticipated performance to that of the standard and made a second estimate of their performance.

Participants

Participants were approached in a manner similar to those in Experiment 1. Ninety participants agreed to participate, with the data of one participant excluded due to experimenter error (45 in *Chicago*; 44 in *London*).

Results

Rated similarity differed significantly between standard conditions ($t(87) = 5.447$, $p < .001$). The similar standard ("average Chicago, IL area resident") received higher similarity ratings on average ($M = 5.16$, $SD = 2.48$) than did the dissimilar standard ("average London, England area resident;" $M = 2.52$, $SD = 2.06$). If the results here follow past findings, (e.g. Hoffman et al., 1954; Brown et al., 1992) participants in the *Chicago* condition should show more adjustment of their estimates towards the comparison standard (i.e. assimilation) than participants in the *London* condition, and those in the *London* condition should show more adjustment of their estimates away from the comparison standard (i.e. contrast) than participants in the *Chicago* condition.

The average first estimate was 38 questions correct in the *Chicago* condition and 36 questions correct in the *London* condition ($t(87)=1.32$, *n.s*). Figure 2 shows the average difference between first and second estimates by standard condition and comparison choice. The overall difference for each condition can be seen by examining the gray bars. Regressing the second estimate on the first estimate provided and standard condition revealed a significant effect of standard condition ($\beta = .145$, $t(86) = 2.93$, $p < .01$) and

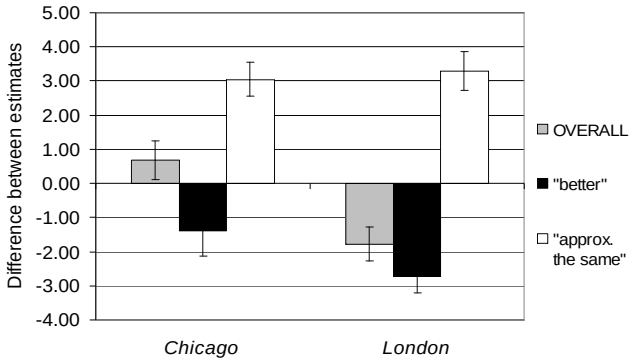

Figure 2. Average difference between first and second estimates (first–second) by condition and comparison in Experiment 2.

indicated that the two factors accounted for a significant portion of the variance (R^2 = .794, $F(2, 88) = 166.04$, $p <$ .01). Participants in the *London* condition adjusted their second estimate up from their first an average of 1.80 questions, while those in the *Chicago* condition adjusted their second estimate down from their first an average of 0.70 questions. Thus, Experiment 2's results are consistent with past evidence showing assimilation-like patterns for similar standards and contrast-like patterns for dissimilar standards (Hoffman et al., 1954; Brown et al., 1992).

Though comparison language was not directly manipulated, the average difference between first and second estimates in both conditions was consistent with the comparison chosen ("better" or "approximately the same"). Participants who chose "better" made a higher second estimate (1.4 questions in the *Chicago* condition, 2.7 questions in the *London* condition). Participants choosing "approximately the same" made a lower second estimate (3.0 questions in the *Chicago* condition and 3.3 in the *London* condition). Adjustment following comparison was significantly different across chosen comparison in the *Chicago* ($F(1, 43) = 23.17$, $p < .001$) and *London* conditions ($F(1, 42) = 28.79$, $p < .001$).

Figure 3 shows the proportion of comparison choices for the *London* and *Chicago* conditions. Choice of "better" predominated in the *London* condition, while a more even split between the two comparisons emerged in the *Chicago* condition. This difference in proportion of comparison choices was significant by logistic regression (b=1.53, SE=.509, $p<.01$). This establishes a significant effect of standard on comparison language. To examine the extent to which choice of comparison mediates the effect of standard condition on the second estimate given the first estimate, we regressed the second estimate on the first estimate given, comparison choice and standard condition and found that the three factors accounted for a significant proportion of the variance in difference size (R^2 = .880, $F(3, 88) = 207.70$, $p < .001$); however, the effect of standard condition was no longer significant ($t(85) = .93$, *n.s.*), while the effect for comparison language was significant ($\beta = .311$, $t(85) = 7.79$, $p < .001$). A Sobel test found that comparison choice significantly mediated the effect of standard condition on second estimates (Sobel = 2.84, $p < .01$). After accounting for the influence of comparison choice, standard condition no longer significantly affected how participants adjusted their estimate after receiving comparison information.

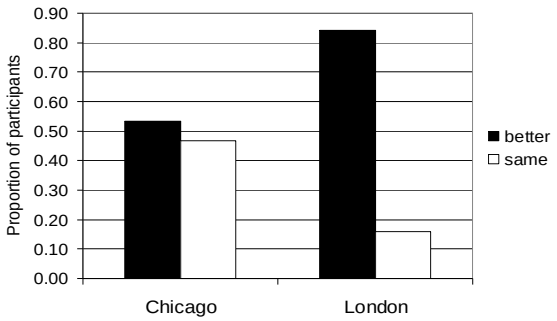

Figure 3. Proportion of each comparison chosen for the *London* and *Chicago* conditions in Experiment 2.

Discussion

The results of Experiment 2 show that, in some cases, similarity of the standard to the decision maker affects social comparison because it affects comparison language. Participants who estimated their own performance to be "approximately the same" as the standard moved their final estimate to be closer to the standard for both the similar and dissimilar standards (an assimilation pattern); those participants who chose "better" to compare themselves to the standard adjusted their estimate to be further from the standard, again for both a similar and dissimilar standard (a contrast pattern). The difference in proportion of participants choosing "approximately the same" to compare themselves to the standard gave rise to the effect of standard on difference between estimates: the more similar the standard was, the more likely participants were to choose "approximately the same" as the comparison phrase, and the more likely they were to move their estimate towards the standard. Once the influence of comparison choice was accounted for, standard identity had no significant effect on adjustment of the second estimate from the first estimate.

General Discussion

Experiments 1 and 2 demonstrate that the agreement between the difference magnitude implied by a comparison (CSD) and the difference between the unbiased estimate and the standard affect the outcome of a social comparison. These results highlight a new factor to be considered in this area of research: the language used by people to compare themselves to a standard and their resulting expectations of how different they will be. Further, the results of Experiment 2 indicate that it is important to consider how identity of the standard might affect the language people use to compare themselves to that standard.

In cognitive theories of social comparison, the effect of a comparison standard on estimates of one's own attributes is dependent on how people use the comparison information (Schwartz & Bless, 1992) or which aspects of the

comparison standard they focus on (Mussweiler, 2003). Experiment 1 manipulated the size of the difference between compared values and found that the difference size between the participant's initial estimate of their ability (their *unbiased estimate*) and the standard's value affected how participants adjusted their personal estimate after comparison. This study demonstrated that both assimilation-like and contrast-like effects are possible in a particular comparison situation depending on the language people use to compare themselves to others, the CSD for this comparison language, and the extent to which the standard is a CSD from the participants' unbiased estimate. These findings also show that the extent to which people forecast their performance to be better than average is affected by the difference they interpret as "better:" the corresponding *ordinal* difference in performance is not sufficient.

Experiment 2 further demonstrated that the language participants choose to compare themselves to the standard influences social comparison effects. While more similar standards often lead to assimilation-like patterns in social comparison effects (e.g. Hoffman et al., 1954), the similarity of the standard also influences comparison language: participants were more likely to choose "approximately the same" to compare their estimated performance to a similar standard than a dissimilar standard and participants who selected "approximately the same" tended to adjust their final estimate to be closer to the standard's performance level (because the CSD for this phrase is 0). After accounting for the choice of comparison language, standard similarity no longer significantly affected how participants adjusted their second estimate.

The results of Experiments 1 and 2 are not only relevant for examining the role of standard characteristics in social comparison, but also for work looking at which attributes of a standard are emphasized in a comparison. Mussweiler and his colleagues describe how a focus on similar attributes rather than dissimilar attributes between the self and the standard leads to assimilation (Mussweiler, 2003; Mussweiler et al., 2004; Mussweiler & Strack, 2000), but this focus is also likely to result in comparison language that implies a smaller or no difference (e.g. "approximately the same"). We predict that participants who focus on similarities between themselves and the standard will be more likely to show assimilation patterns in their responses in part because they will use small-CSD comparison language to compare themselves to the standard. Equally, participants who focus on dissimilarities will be more likely to use large-CSD comparison language (e.g. "better"), and this will contribute to contrast patterns in their responses. Our findings demonstrate that comparison language is a factor that should be considered when examining how a similarity vs. dissimilarity focus affects social comparison.

Conclusion

Comparison language conveys information about the magnitude of difference between the compared values (Choplin, 2007). Someone who describes herself as "better" than average also has an idea of what "better" entails. If the difference between average and her initial estimate disagrees with this difference, she may reassess her estimate. Because comparison language imparts information about more than just ordinal differences, the language used in making a comparison is an important factor to consider in predicting how social comparison will influence judgments.

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