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Brief article

That certain something! Focusing on similarities reduces judgmental uncertainty

Ann-Christin Posten [a,b,*], Thomas Mussweiler [c]

[a] Harvard University, United States
[b] University of Cologne, Germany
[c] London Business School, United Kingdom

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ABSTRACT

Comparative thinking is an efficient cognitive strategy that reduces judgmental uncertainty. However, comparisons may be conducted with a focus on similarities or differences. Similarity-focused comparisons seem to facilitate information-transfer, which has been suggested to drive the uncertainty-reducing effect of comparisons. This implies that similarity-focused comparisons reduce uncertainty more than dissimilarity-focused comparisons. Two experiments examine this assumption. In Study 1, a similarity-focus (compared to a difference-focus and a neutral control condition) increased judgmental certainty when the comparison was based on confident standard-knowledge. However, when the comparison was based on vague standard-knowledge the uncertainty-reducing effect diminished. Study 2 shows that a similarity-focus increases information-transfer and that a similarity-focus particularly enhanced certainty for judgments for which a standard-to-target information-transfer had occurred. These studies suggest that similarity-focused comparisons reduce judgmental uncertainty through the mechanism of information-transfer.

1. Introduction

Uncertainty is a faithful companion of human life (Tversky & Kahneman, 1974). We may feel uncertain about how much someone likes us, when the next train will arrive, or how much to spend on a new house. Faced with uncertainty, people diligently strive to reduce it. One may observe another person's behavior, search the web for a train schedule, or consult a realtor. Obtaining information that helps to reduce uncertainty tends to consume time, money, and other resources. Nevertheless, people are typically willing to accept these costs to reduce uncertainty (Inglis, 2000; Tiedens & Linton, 2001).

Humans have developed an arsenal of tools to cope with uncertainty. Behavioral strategies such as experiential coping (Hogg & Mullin, 1999; Van Horen & Mussweiler, 2014), superstitious beliefs (Keinan, 1994), or behavioral routines (Czech, Ploszay, & Burke, 2004) constitute just few of them. Another class of strategies used to reduce uncertainty are specific cognitive information-processing mechanisms (Tiedens & Linton, 2001). One such strategy is comparative thinking, which is engaged during social as well as nonsocial judgment and decision-making (Festinger, 1954; Medin, Goldstone, & Markman, 1995; Tversky & Kahneman, 1986). Recent research demonstrated that engaging individuals in comparative thinking makes them more certain of their judgments. In one study, for example, participants merely compared two halves of a picture and afterwards completed an unrelated judgment task. The procedurally elicited comparative thinking style carried over to the subsequent task and influenced the participants' willingness to bet on their judgments (Mussweiler & Posten, 2012).

The uncertainty-reducing effects of comparative thinking have been suggested to result from comparing an unknown target with a well-known standard and transferring information from the standard to the target (Mussweiler & Epstude, 2009; Mussweiler & Posten, 2012). Using available standard-information as a proxy to compensate for missing target-information enriches one's judgmental base. Typically, information-rich and systematic standards are preferred as comparison bases to project information to the target, which contributes to its understanding (Bowdle & Gentner, 1997). For instance, when making a judgment about a vaguely known country, one typically does so in comparison to a routine-standard, for example one's home country, about which one has plenty of information readily available (Corcoran &

* Corresponding author at: University of Cologne, Social Psychology I, Richard-Strauss-Str. 2, 50931 Cologne, Germany.
E-mail address: a-c.posten@uni-koeln.de (A.-C. Posten).

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Mussweiler, 2009; Mussweiler & Rüter, 2003). More precisely, when thinking about how many years are between federal elections, one may rely on easily accessible information about elections in one's home country. This information may then be transferred and used to compensate for missing target-information. Mussweiler and Epstude (2009) tested this conjecture. They reasoned that transferring information from a comparison-standard to an unknown target results in the ascription of typical aspects of the standard to the target. The results showed that participants with a comparison mindset were more likely to transfer typical standard aspects to the target. This finding demonstrates that comparative thinking increases information-transfer from a comparison-standard to a target with incomplete information.

Theory and research on comparative thinking reveals that making a comparison involves judging the similarities as well as the dissimilarities of two or more entities (Navarro & Lee, 2004; Shepard & Arabie, 1979). The perception of (dis)similarity depends on the entities' overall shared and distinctive features (Markman & Gentner, 1996; Tversky, 1977) and the emphasis placed on them (Ritov, Gati, & Tversky, 1990). Furthermore, contextual cues (Wisniewski & Middleton, 2002) and prior comparisons may direct a judge's comparison focus toward similarities or dissimilarities and influence subsequent (dis)similarity perceptions (Mussweiler, 2001, 2003).

The distinction between the two fundamental comparative foci begs the question of whether they differentially affect judgmental uncertainty. Theoretical reasoning proposes that to be able to compare entities, one first needs to identify common and alignable structures. An initial focus on similarities promotes structural alignment and facilitates the identification of shared dimensions along which one may then compare (Gentner & Markman, 1994; Markman & Gentner, 1993; Mussweiler & Epstude, 2009). The notion that similarity-focused comparisons facilitate information-transfer is empirically supported: Overall, similarity-judgments are particularly helpful to understand abstract and difficult relational structures (Higgins & Ross, 2011). The more similar entities are, the more likely corresponding information will be mapped and transferred from one to the other (Wisniewski, 1996). Likewise, similarity facilitates the use of categorical information to predict unknown target features (Hampton & Cannon, 2004), and directing a judge's focus toward similarities leads to efficiency advantages that resemble those of information-transfer (Corcoran, Epstude, Damisch, & Mussweiler, 2011). This evidence suggests that a similarity-focus facilitates information-transfer.

The implications for how similarity-focused comparisons influence judgmental uncertainty are clear: If a focus on similarities facilitates information-transfer and information-transfer reduces judgmental uncertainty, then similarity-focused comparisons should reduce judgmental uncertainty more than dissimilarity-focused comparisons. The present research tests this hypothesis. In two experiments, participants engaged in similarity- versus dissimilarity-focused comparisons before making judgments about complex targets. Specifically, participants engaged in a procedural priming task and listed either similarities or dissimilarities between pictures (Mussweiler, 2001; Mussweiler & Epstude, 2009). Because such a procedurally activated thinking style carries over to subsequent tasks (Corcoran et al., 2011; Mussweiler, 2001), we expected the induced (dis)similarity-focus to influence information-processing during a subsequent judgment task, in which we assessed judgmental (un)certainty. Furthermore, to explore the role of information-transfer, Experiment 1 differentiates between judgments that are based on either confident or vague standard-knowledge. Experiment 2 assesses whether a similarity-focus increases information-transfer and whether for transferred items a similarity-focus increases certainty in the target judgments.

2. Experiment 1

Experiment 1 investigates whether a similarity-focus increases certainty compared to a dissimilarity-focus and a control condition. Additionally, the study sheds light on the hypothesized mechanism of information-transfer. Our reasoning holds that the certainty for target judgments strongly depends on the confidence associated with the respective standard-knowledge. If one has confident standard-knowledge, confident knowledge can be transferred to the target and the target judgment will increase in certainty. However, if one has vague knowledge about a standard feature, one can only transfer vague knowledge and the target judgment will remain vague. For example, when thinking about how many years are between elections in a vaguely known country, one may think about the well-known years between elections in one's home country. Transferring this confident knowledge to the target country should result in higher judgmental certainty. However, when thinking about the number of light bulb factories in the unknown country, one typically has only vague standard-information for one's home country available. Transferring this vague standard-knowledge to the target adds only vague information to the judgment. Hence, confidence should barely increase. Experiment 2 follows this underlying logic by comparing judgments for which standard-knowledge is confident with judgments for which standard-knowledge is vague. We hypothesize that a similarity-focus particularly reduces uncertainty when individuals have confident standard-knowledge available.

The participants completed a similarity-focus, a dissimilarity-focus, or a control manipulation. Subsequently, they engaged in a trivia quiz about Canada and indicated their degree of answer certainty. All recruited participants were US residents. Hence, we reasoned that the US would likely function as a natural routine-standard for the target, Canada. The judgments about Canada were designed in a way that US residents feel confident (vs. non-confident) about the respective answer for their home country, the comparison-standard.

2.1. Method

We recruited 123 participants (71 female; M_{age} = 37.34, SD = 12.30) via Amazon's Mechanical Turk (MTurk).[1] We consecutively presented three colored pictures to the participants. Participants in the similarity-focus condition compared the two vertical halves of each picture and listed three similarities between them. Participants in the dissimilarity-focus condition listed three differences. Participants in the neutral control condition named any three features of each picture (Crusius & Mussweiler, 2012).

Afterwards, all participants engaged in the critical judgment task, a trivia quiz about Canada with 20 questions. For each judgment, participants indicated their degree of certainty on an answer-slider (1 = *very uncertain*; 100 = *very uncertain*). Two types of judgments existed: One type for which confident standard-knowledge existed (e.g., years between federal elections) and one type with vague standard-knowledge (e.g., number of light bulb factories). To distinguish between these types of judgments, we conducted an independent study with 49 US residents (15 female; M_{age} = 37.12, SD = 13.04) on MTurk. Participants answered 20 questions about their home country and indicated their degree of

[1] Participants were eligible to engage in the MTurk study if they had a minimal approval rate of 95% in previous MTurk tasks and were located in the United States. For this and all of the subsequent studies, we report all data exclusions, all manipulations, and all measures. The sample size of each study was set in advance. We restricted our analyses a priori to native speakers who completed the experiment (Meade & Craig, 2012). This led to the exclusion of five participants in the pretest of Study 1, 39 participants in Study 1, and 33 participants in Study 2.