On the Ease of (Dis)believing:

The Role of Accessibility Experiences in Credibility Judgments

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Abstract

Credibility judgments are common and consequential in many applied settings. While much research has addressed human observers' ability to discriminate true and deceptive statements, less is known about the processes involved in such judgments. Here, it is proposed that the process of mustering evidence for or against credibility is reflected in a feeling-based form (ease-of-retrieval), and that such feelings can be used as a basis for credibility judgments. The results of an experiment show, as predicted, that the perceived ease with which participants could identify clues strongly influenced credibility judgments. Ironically, mustering more clues in support of a truthful account lowered credibility judgments; in contrast, mustering more clues in support of a deceptive account increased credibility judgments. Mediation analyses suggest that this is because participants relied on a feeling-based as opposed to content-based judgment strategy. Practical implications are discussed, and theoretical issues regarding the process of credibility judgment are raised.

Keywords: credibility, accessibility experiences, ease-of-retrieval, deception

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Credibility judgments are made on a daily basis in many applied settings, including the legal, business, medical, and political domains. Consider, for instance, a staff manager who makes hiring decisions based on information provided by job applicants. Because it is in the interest of the applicant to present him- or herself in a favorable light, the staff manager needs to judge whether the provided information represents the truth or is in fact an attempt to deceive. Moreover, credibility judgments often need to be backed up with supporting arguments. In many jurisdictions, for example, judges in criminal trials must give reasons for why a particular witness is deemed credible or not. These examples illustrate the consequential nature of credibility judgments, but also put the finger on an often neglected aspect of credibility assessments—the process of generating supporting arguments. Drawing on social-cognitive research on "accessibility experiences," we argue that the process of generating arguments *per se* may influence the perception of credibility. Specifically, the number (i.e., few vs. many) and type (e.g., for vs. against credibility) of reasons to be generated may systematically bias judgments, by influencing the perceived ease with which reasons come to mind. In the current paper, we present an experiment testing this possibility.

The Process of Credibility Attribution

The past few decades have witnessed a surge of research on human observers' ability to detect deception (for a review, see Vrij, 2008). This research has led to rather disappointing conclusions. When presented with true and deceptive statements, people distinguish these with an accuracy barely exceeding chance level (Bond & DePaulo, 2006). The process of veracity judgments or credibility attribution has been investigated from different theoretical perspectives (e.g., Bond & DePaulo, 2006; Forrest & Feldman, 2000; Hartwig & Bond, 2011; Levine, Kim, & Blair, 2010; Levine & McCornack, 2001; Levine, Park, & McCornack, 1999;

O'Sullivan, 2003; Masip, Garrido, & Herrero, 2009; Reinhard, 2010; Reinhard & Sporer, 2008, 2010; Reinhard, Sporer, Scharmach, Marksteiner, 2011). For instance, while some researchers have used basic assumptions of dual-process models (e.g., Chen & Chaiken, 1999; Petty & Wegener, 1999) to explain the process of lie detection (Forrest, Feldman, & Tyler, 2004; Masip, Garrido, & Herrero, 2009; Reinhard, 2010; Reinhard & Sporer, 2008, 2010), others have approached the topic from the viewpoint of attribution theory (O'Sullivan, 2003), investigated sender characteristics (Levine, Kim, & Blair, 2010; Levine & McCornack, 2001; Levine, Park, & McCornack, 1999), or focused on situational factors that moderate cue usage in deception judgments (Reinhard, Scharmach, & Sporer, 2012; Reinhard, Sporer, Scharmach, & Marksteiner, 2011; Stiff et al., 1989).

The most frequent source of information about the credibility attribution process, however, is people's self-reported lie-detection strategies. In a typical lie-detection experiment, participants are asked to report which information they used to arrive at their final judgment (Vrij, 2008). Moreover, numerous surveys have been conducted where people are asked to report to what extent they believe different behavioral cues are indicative of deception (e.g., Akehurst, Köhnken, Vrij, & Bull, 1996; Global Deception Research Team, 2006; Strömwall & Granhag, 2003). Implicit in such requests is the assumption that credibility judgments are the products of a deliberate integration of reasons favoring and opposing credibility. A recent series of meta-analyses by Hartwig and Bond (2011), however, suggests that people have limited insight into the actual processes underlying their credibility judgments, in line with what has been found for many other social judgments (Nisbett & Wilson, 1977). Credibility inferences, thus, appear to involve implicit processes that have only recently started to be explored (Albrechtsen, Meissner, & Susa, 2009; Ask & Reinhard, 2012). Moreover, despite the frequent use of self-report methods, it is worth noting that

merely requiring participants to provide self-reports may alter their perception of credibility. To explain how, we now turn to the literature on accessibility experiences.

Accessibility Experiences

Stylized in the notion of a "Homo economicus," sound judgments and decisions were long thought to be based on content information, such as arguments in favor or against a specific position. Over the last three decades, however, researchers in social cognition have marshaled strong evidence showing that judgments may also be formed on the basis of feelings (Schwarz & Clore, 2007). For instance, Schwarz and colleagues (1991) reported that the experienced ease or difficulty with which examples of one's own assertive behavior can be retrieved from memory influences judgments about the self. Relatedly, Wänke, Bohner, and Jurkowitsch (1997) showed that ease or difficulty associated with generating reasons in favor of a certain brand influences liking. It is by now well established that such feelings of ease or difficulty constitute an *independent* source of information that individuals may use in addition to, or instead of, content information to form judgments (e.g., Schwarz & Clore, 2007). Such feelings are referred to as "cognitive feelings," because they are associated with cognitive processing, but are felt much like affective or bodily feelings (Clore, 1992).

One cognitive feeling that figures particularly prominently is the experience of ease or difficulty when retrieving content information from memory, generally referred to as ease-of-retrieval or accessibility experiences (Schwarz et al., 1991; for reviews, see Schwarz, 1998, 2004). Research on accessibility experiences originated in the realm of frequency judgments, where researchers observed that a class of objects is judged to be more common the more easily according examples can be retrieved from memory (Tversky & Kahneman, 1973). Since then, accessibility experiences have been shown to influence many other types of judgments. For example, self-judgments (e.g., Greifeneder & Bless, 2008; Schwarz, et al., 1991) are more positive the more easily positive self- or other-relevant information can be

retrieved. Similarly, evaluations of objects have been shown to reflect the ease or difficulty with which information can be brought to mind (e.g., Novemsky, Dhar, Schwarz, & Simonson, 2007). Even abstract concepts, such as attitude strength (Haddock, Rothman, Reber, & Schwarz, 1999), memory performance (e.g., Winkielman, Schwarz, & Belli, 1998), and trust (Greifeneder, Müller, Stahlberg, van den Bos, & Bless, 2011), are influenced by accessibility experiences.

To date, however, research has not investigated the role of accessibility experiences in judgments of credibility. This is surprising, as cognitive feelings have been suggested to be a generally valid source of information on which individuals frequently rely (Greifeneder, Bless, & Pham, 2011). Moreover, because credibility judgments in applied settings are often associated with the generation of supporting arguments, knowledge about the role of accessibility experiences in this domain is of obvious practical relevance. The present research was designed to address this lack of research.

The Present Research

Participants in our study were presented with a videotaped account in a job interview setting. Before judging the credibility of the job applicant, they were asked to list few or many clues indicating that the applicant had given a truthful or deceptive account. Because recalling many clues is experienced as difficult, participants may conclude that there are not many clues available—why else would it be so difficult to name these? Conversely, because recalling few clues is experienced as easy, participants may infer that there are many clues available—why else would it be so easy to come up with exemplars? Thus, we predicted that participants generating many (vs. few) *truth* clues would perceive the target as *less* credible, because they would find it more difficult to come up with reasons to believe the statement. Following the same logic, we predicted that participants recalling many (vs. few) *lie* clues would perceive the target as *more* credible, because they would find it more difficult to come

up with reasons to disbelieve the statement. Note that this pattern of results is diametrically opposed to what would be expected if participants relied on a content-based judgment strategy, in which case recalling more information would yield judgments more in line with (and not opposite to) the recalled content. The few-versus-many recall paradigm was introduced by Schwarz and colleagues (1991) and has since been used as the standard manipulation in ease-of-retrieval research (for a recent discussion of the paradigm's validity, see Wänke, in press).

Method

Participants and Design

Eighty-seven students at the University of Mannheim (38 females; $M_{age} = 22.6$ years) participated in the experiment on a paid voluntary basis. Participants were randomly assigned to conditions specified by a 2 (number of clues: few vs. many) × 2 (type of clues: truth vs. lie) × 2 (video content: truth vs. lie) factorial design. Three participants expressed suspicion about the true purpose of the experiment and were excluded from analyses.

Procedure and Materials

Upon arrival, participants received written instructions for the experiment. They were told that they would watch a video recording of a job interview, and that the applicant would talk about a previous internship. Participants were asked to assume the role of the recruiter. Moreover, participants were told that it is equally likely that the applicant is telling the truth (i.e., talking about an actual internship) as it is likely that he is lying (i.e., talking about a fictitious internship). The video recording was then presented on a laptop computer.

Video material. The video material was originally developed for a study on lie detection (Reinhard, Greifeneder, & Scharmach, 2012). Eight male students of economic sciences, aged 22–29 years, posed as stimulus persons on the video recordings. The students had been asked to recount in front of a digital video camera (a) their most recent internship

and (b) one fictitious, randomly assigned internship. Stimulus persons were given 5 minutes to prepare before the recording, and were asked to base their stories on three questions ("When, where, and for whom did you do your internship?", "What exactly did you do in the internship?", and "What did you like/dislike about the internship?"). The resulting 16 accounts were detailed and comprehensive ($M = 228$ s, $SD = 37$).

For the current experiment, eight accounts—four truthful and four deceptive—were selected; each stimulus person was featured once. Participants were shown a randomly selected truthful or deceptive account, depending on experimental condition.

Manipulation of accessibility experiences. Immediately after participants had watched the video recording, accessibility experiences were manipulated. Participants in the truth clues condition were instructed to write down two or six clues indicating that the job applicant had told the truth about the reported internship. Participants in the lie clues condition were instructed to identify two or six clues indicating that the job applicant had lied about the reported internship. A pretest ($N = 30$) using the manipulation check items of the present study (see below) had indicated that generating two clues for truth/deception was perceived as relatively easy ($M = 5.35$), whereas generating six clues was perceived as relatively difficult ($M = 3.02$), $t(28) = 3.83$, $p < .001$.

Manipulation check. As a manipulation check for accessibility experiences, participants were asked "How difficult or easy was it to list the clues?", "How difficult or easy would it have been to mention additional clues?", and "How difficult or easy was it to come up with the last clue?" Answers were given on 9-point rating scales (1 = *very difficult*, 9 = *very easy*). The three items were averaged to form a single index variable (Cronbach's $\alpha = .88$).

Credibility judgments. Participants then rated the perceived credibility of the job applicant, by indicating their agreement with two statements: "As staff manager I would

doubt the applicant's account of the internship" and "As staff manager I would fully trust the applicant's account of the internship." Ratings were made on scales from 1 (*disagree*) to 9 (*agree*). The first item was reverse-scored and averaged with the second item to create a credibility index variable (α = .92).

Results

Preliminary Analyses

The index variable representing accessibility experiences was entered in a 2 (number of clues: few vs. many) × 2 (type of clues: truth vs. lie) × 2 (video content: truth vs. lie) analysis of variance (ANOVA). As expected, generating few clues (*M* = 5.08, *SD* = 2.21) was experienced as easier than generating many clues (*M* = 3.29, *SD* = 1.77), $F(1, 76) = 16.78$, $p < .001$, $\eta^2_p = .18$. No other main or interaction effects were significant.[1]

Credibility Judgments

A 2 (number of clues: few vs. many) × 2 (type of clues: truth vs. lie) × 2 (video content: truth vs. lie) ANOVA was performed on the credibility index. As predicted, the Number of Clues × Type of Clues interaction was significant, $F(1, 76) = 9.07$, $p = .003$, $\eta^2_p = .11$. The interaction is illustrated in Figure 1. In the lie clues condition, participants judged the target as more credible when asked to generate many (*M* = 5.13, *SD* = 2.28) as opposed to few (*M* = 3.66, *SD* = 2.26) clues, $F(1, 76) = 4.71$, $p = .033$, $\eta^2_p = .06$; presumably, this is because they relied on perceived ease or difficulty and not on the content of the recalled clues. Conversely, in the truth clues condition, participants judged the target as less credible when asked to generate many (*M* = 3.50, *SD* = 1.66) as opposed to few (*M* = 4.93, *SD* = 2.35) clues, $F(1, 76) = 4.39$, $p = .039$, $\eta^2_p = .05$; again, presumably reflecting a feeling-based judgment strategy. Moreover, when asked to generate many clues, participants generating lie clues judged the target as more credible than did participants generating truth clues, $F(1, 76) = 5.19$, $p = .025$, $\eta^2_p = .06$. In contrast, when asked to generate few clues, participants

generating lie clues judged the target as marginally less credible than did participants generating truth clues, $F(1, 76) = 3.91$, $p = .052$, $\eta^2_p = .05$. No other main effects or interactions were significant in the omnibus analysis, all Fs < 1.

Mediation Analysis

Additional analyses were performed to further explore the role of accessibility experiences in credibility judgments. As expected, the perceived ease of generating clues was positively correlated with credibility judgments in the truth clues condition, $r = .41$, $p = .007$, and negatively correlated with credibility judgments in the lie clues condition, $r = -.70$, $p < .001$. A series of regression analyses further supported the mediating role of accessibility experiences. First, replicating the main analyses, a Number of Clues × Type of Clues interaction contrast significantly predicted credibility judgments, $B = 0.72$, $SE = 0.23$, $p = .003$.[2] Second, the interaction contrast significantly predicted accessibility experiences, $B = -0.41$, $SE = 0.10$, $p < .001$.[3] Third, accessibility experiences significantly predicted credibility judgments, $B = -1.19$, $SE = 0.22$, $p < .001$. Finally, when controlling for accessibility experiences, the Number of Clues × Type of Clues interaction effect on credibility judgments dropped to non-significance, $B = 0.24$, $SE = 0.22$, $p = .292$, indicating that the interaction was fully mediated by accessibility experiences. The mediation was confirmed by a significant Sobel test, $z = 3.19$, $p = .001$.

<div align="center">**Discussion**</div>

The present study was designed to investigate the role of accessibility experiences in judgments of credibility. We found, as predicted, that the felt ease with which clues in support of a specific position could be mustered influenced the perception of credibility. Importantly, it was not the actual content of the generated clues that influenced judgments; if this were the case, mustering more evidence in support of a specific position would have shifted judgments in the corresponding direction. Instead, mustering more evidence in support of a specific

position shifted judgments in the direction *opposite* of the recalled content information.

Similarly, this pattern of results is diametrically opposed to what would be expected if

increased time spent ruminating on specific clues were to produce directionally more

consistent judgments, as would be predicted from information integration theory (Anderson,

1981) and from research on the effects of time and thought on the formation of attitudes

(Tesser & Conlee, 1975). Arguably, it took our participants longer to generate six as opposed

to two clues, but judgments were nonetheless more consistent with the clues generated in the

latter condition. Instead, in line with the logic of Schwarz and colleagues' (1991) ease-of-

retrieval paradigm, our pattern of results suggests that individuals recruited feelings of ease or

difficulty associated with the process of generating clues as direct input to credibility

judgments. The present evidence, thus, stands in contrast to the implicit assumption that

people arrive at credibility judgments by weighing and integrating cues in a deliberative

fashion.

In professional settings, where credibility judgments are routinely backed up by

supporting arguments (e.g., in court, prosecutorial decision making), the precise nature of the

argument generation process may have significant consequences for the resulting judgments.

For instance, if a judge focuses selectively on support for either truth or deception, any extra-

legal factor that influences the perceived ease or difficulty of generating such support may

have a profound biasing impact. If, in contrast, there are incentives to focus on support for

both positions, the perception of both alternatives should be equally influenced by

accessibility experiences, thus canceling out any bias. The implications may be even greater

in the context of criminal investigations, which are typically carried out under strong

institutional time pressure (Ask & Alison, 2010). Social-cognitive research has shown that the

impact of accessibility experiences is more pronounced in conditions of high (vs. low) time

pressure (Greifeneder & Bless, 2007). Moreover, perceived time pressure greatly reduces

criminal investigators' ability to entertain multiple hypotheses, and exacerbates the tendency to focus on support for a single hypothesis (Ask & Granhag, 2007). Taken together, these findings suggest that investigators focusing selectively on the guilt of a particular suspect, or the credibility of a specific witness, are particularly likely to have their judgments influenced by factors related to the ease or difficulty of retrieval.

A question with great relevance for the deception detection literature concerns the validity of accessibility experiences. In our experiment, accessibility experiences and truth status of the judged accounts were manipulated orthogonally, so that perceived ease was rendered non-diagnostic of actual truth or deception. In real life, however, accessibility experiences may serve as a useful indicator as to the veracity of a statement. In other settings, cognitive feelings have been suggested to be a generally valid source of information (Greifeneder, Bless, & Scholl, in press; Herzog & Hertwig, in press), since experiences of ease or difficulty often reliably reflect actual frequencies in the environment. When ease-of-retrieval experiences lead astray in scientific experiments (as in the current study), it is because researchers devise methods producing error to demonstrate underlying psychological processes, much in the same way as researchers create optical illusions as a means to elucidate perceptual processes. Experimentally induced biases, thus, are not indicative of the potential for ecologically valid inferences. At present, there is only limited empirical evidence concerning the validity of cognitive feelings in relation to credibility judgments. In a meta-analysis, DePaulo, Charlton, Cooper, Lindsay, and Muhlenbruck (1997) found that, although increased confidence was not associated with more accurate deception judgments, people tended to be more confident when judging true as opposed to deceptive accounts; that is, people expressed greater certainty in their judgments of actual truths (vs. lies), independently of whether or not they correctly identified them as true. Moreover, Reinhard, Sporer, and Scharmach (in press) recently found that confidence and lie detection accuracy were better

calibrated when judges felt highly familiar (vs. unfamiliar) with the judgment situation. This suggests that meta-cognitive experiences (e.g., confidence, accessibility experiences) may be valid indicators of truth and deception. We believe this is a possibility worth exploring in future research.

The current findings also raise important questions regarding the process of veracity judgments. Our manipulation checks indicate that generating reasons in support of veracity judgments may be a difficult task *per se*; participants asked to generate only two reasons barely reached the midpoint of the difficult–easy rating scale. Possibly, this is because argument generation is not the default mode of judgment formation, but rather a secondary, effortful process that may override spontaneous, global impressions (see Uleman, Saribay, & Gonzalez, 2008). Indeed, recent meta-analytic findings show that actual credibility judgments are largely determined by observers' global impression of the judgment target (e.g., ambivalent, competent, cooperative), and that some specific cues that people frequently mention when reporting cues to deception (e.g., lack of eye contact, fidgeting) are in fact only weakly related to perceived credibility (Hartwig & Bond, 2011). The relative contribution of spontaneous impressions and deliberate processes probably depends on the precise nature of the judgment task, varying along dimensions such as accountability, perceived importance of the judgment, availability of content cues, and the observer's ability and motivation to engage in effortful deliberation. Consistent with this assumption, Ask and Reinhard (2012) recently found that people low in the need for cognition (see Cacioppo & Petty, 1982) based their credibility judgments on their current inclination to approach or avoid the target person, whereas people high in need for cognition were unaffected by their approach/avoidance state.

Finally, a possible limitation of the current research should be mentioned. In generalizing the current findings to applied settings, one must consider whether professionals assessing veracity on a regular basis would display the same pattern as the student participants

did in our study. It could be argued that formal training and established guidelines serve to

minimize the role of subjective feelings in judgments. In the case of credibility judgments,

however, there is little to suggest that this should be the case. In fact, there are few formalized

procedures for assessing credibility, and those that do exist (e.g., Statement Validity

Assessment, Reality Monitoring; Vrij, 2008) are laborious and therefore rarely used.

Moreover, survey findings show that professionals, at least in the legal domain, hold beliefs

about cues to deception similar to those reported by lay people (Akehurst, et al., 1996;

Strömwall & Granhag, 2003). Hence, it seems probable that our findings would replicate in a

professional sample. Perhaps more critical from an applied perspective is the extent to which

our findings would generalize to other types of lies than the one studied here. When assessing

a defendant's credibility, for instance, jurors and judges typically have access to a fuller body

of background knowledge (e.g., witness statements, physical evidence) against which the

defendant's statement can be gauged. This provides a richer repertoire of clues that can be

recruited in support of lie or truth judgments. It is unclear whether a larger available

information base would attenuate the ease-of-retrieval effect (because it is always easy to

come up with clues) or create greater latitude for such an effect to take place (because the

potential span between few and many clues is increased). Hence, it remains important to

investigate the applicability of the current findings in naturalistic settings.

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Footnotes

[1]Unexpectedly, the three-way Number of Clues × Type of Clues × Video Content interaction approached significance, $F(1, 76) = 3.22$, $p = .077$, $\eta^2_p = .04$; the difference in ease of generating many versus few clues was slightly, but not significantly, smaller for participants who watched an actually deceptive video and generated truth clues, compared with participants who watched an actually truthful video or were asked to generate lie clues. No other interaction or main effect approached significance, ps > .33.

[2]Consistent with the predicted pattern of means, the interaction contrast was coded as follows: few truth clues (+1), many truth clues (-1), few lie clues (-1), many lie clues (+1).

[3]Because perceived ease was related to credibility judgments in opposite directions in the lie clues and truth clues conditions, the accessibility experiences index was reverse scored in the latter condition.
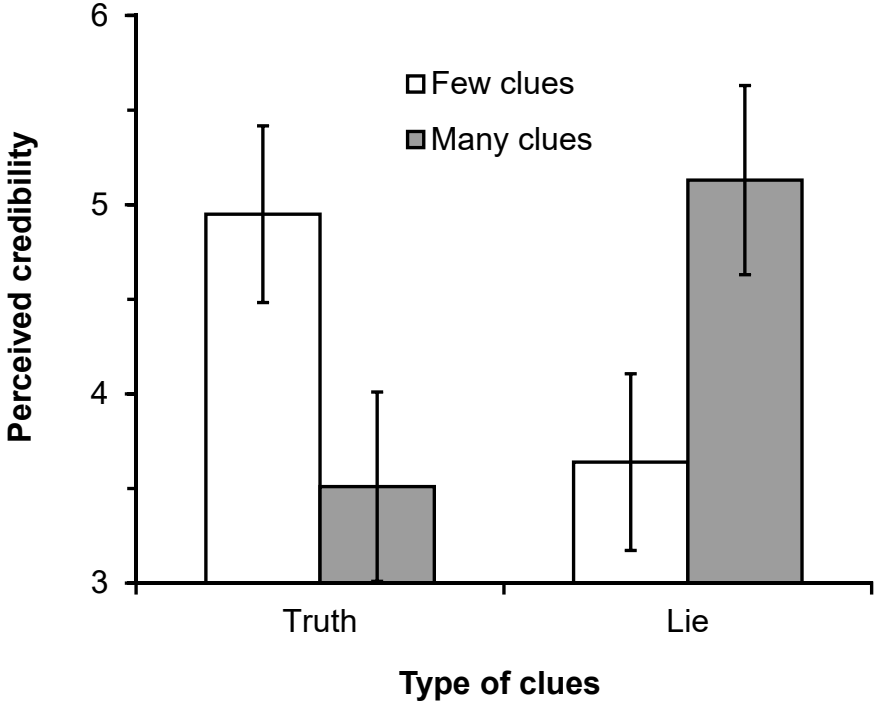
Figure 1. Ratings of target credibility as a function of type and number of clues generated (means and standard errors).