Individual differences in the susceptibility to confirmation bias

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Confirmation bias refers to the tendency to prioritise confirming over disconfirming information. A closer look reveals that confirmation bias actually consists of various aspects such as ignoring disconfirming evidence, underweighting such evidence, and a reluctance to change one's mind. Although confirmation bias has been studied in some detail, to date, there is no measure of individual differences in confirmation proneness. This absence is unfortunate, because it hinders scientific progress. In addition, measures of confirmation proneness could be fruitfully applied in various situations in psychological practice. In the current research, a 10-item self-report measure of confirmation proneness (the Confirmation Inventory: CI) was developed (Study 1). In Study 2, the CI was found to possess adequate test-retest reliability. In Study 3, higher scores on the CI were found to be associated with confirmatory decision-making in several decision-making paradigms. (*Netherlands Journal of Psychology*, 64, 87-93.)

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When testing a hypothesis, people tend to favour confirming over disconfirming evidence. This so-called positive test strategy (Oswald & Grosjean, 2004) can readily become problematic if the disconfirming information is in fact more diagnostic than the confirming information. For example, imagine a game in which the game host has written down a simple rule about three numbers. He informs the contestant that the sequence 2-4-6 complies with this rule. The contestant now has to produce a triplet after which the host will tell him whether or not that triplet complies with the rule. In this way, the contestant has to discover which rule the host has written down, preferably needing as few trials as possible. In this situation, the majority of contestants will produce sequences similar to the one already given by the host (e.g., 8-10-12, and other triplets in line with the obvious rule 'add 2 to the previous number'). It is likely that contestants get increasingly assured that the 'add 2' rule is indeed the right one. However, producing triplets that are in line with the contestant's hypothesis ('add 2') does not really deliver any further information compared with what is already known. It would be better to produce triplets that contradict the assumed rule (e.g., 5-5-6). If

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such a triplet is said to be in contradiction with the rule, the contestant gathers extra support for the hypothesised rule. However, if such a triplet is declared to comply with the rule, the contestant finds his hypothesis to be falsified. By exclusively producing confirming triplets, the contestant robs himself from the possibility of finding out that his hypothesis is flawed. In fact, the rule written down by the host is always broader than the one implied by the original 2-4-6 series (e.g., 'any number must be equal to or bigger than its predecessor', or 'all numbers must be bigger than zero'). Hence, producing triplets that disconfirm the contestant's hypothesis is always more diagnostic than producing confirming triplets. Nevertheless, contestants rarely produce such disconfirming triplets, which results in needing more trials to solve the riddle, if they do so at all (see Baron, 2000).

It is important to note that the confirmation bias is a ubiquitous phenomenon, in that it manifests in different ways, and it can occur in any decision-making process. In the words of Kassin: 'a warehouse of psychology research suggests that once people form an impression, they unwittingly seek, interpret, and create behavioural data that verify it (2005, p. 219). Or, as Nickerson puts it: 'if one were to attempt to identify a single problematic aspect of human reasoning that deserves attention above all others, the confirmation bias would have to be among the candidates for consideration' (1998, p. 175). The latter author discusses various manifestations of confirmation bias. For one thing, confirmation bias can influence our perception. For example, the expectation that a certain stimulus is present can actually lead us to see that stimulus, while, in fact, it is not present at all (cf. an illusion). Also, ambiguous stimuli are perceived in a hypothesis-congruent way (Risinger, Saks, Thompson & Rosenthal, 2002). Lastly, confirmation bias can lead us to concentrate so strongly on confirming evidence that disconfirming and peripheral information is literally overlooked (see Deffenbacher, 1980).

Besides effecting perception, confirmation bias manifests in differential judgement and decision-making situations. First, it seems to result in a motivated neglect of disconfirming evidence. Sweeney and Gruber (1984) compared the opinion of Nixon voters and McGovern voters on the Watergate affair. Compared with those who had voted for Nixon, it seemed that those who had voted for McGovern in 1972 were much more interested in the media reports on the Watergate affair. This difference resulted in an actual lack of knowledge with respect to the Watergate affair on the part of the Nixon voters, compared with their McGovern voting peers. Ultimately, the Nixon voters saw less reason for the president to resign, compared with McGovern voters. A classic study by Lord, Ross and Lepper (1979) gave rise to the conclusion that if people cannot avoid disconfirming evidence, they tend to give less weight to such information than to the confirming information. In this study, 24 students in favour of the death penalty and 24 against it were exposed to a number of short research reports. The reports were fabricated for this study in a way that they were all of equal quality. Some of the reports produced results supporting the crime-reducing effect of death penalties, whereas others produced opposing findings. Participants were instructed to rate the quality of all research reports. Indeed, participants rated reports producing results in line with their personal opinion to be better than those describing conflicting findings. In addition, at the end of this study, participants were even more pronounced in their opinion compared with the beginning of the experiment. Hence, the confrontation with disconfirming evidence was not merely ineffective but even counterproductive.

Another manifestation of the confirmation bias dictates that it is very hard for people to change their opinion, even when faced with clear contra-evidence. This phenomenon has also been dubbed belief persistence (Nickerson, 1998). Ross, Lepper and Hubbard (1975) asked 60 participants to differentiate between 25 actual suicide notes and 25 fabricated ones. Participants subsequently received false feedback about their accuracy. Some of them were told that they had performed well, while others were told they had performed badly. After a short delay, participants were informed that this feedback was false and that it was part of the experimental procedure. Participants were asked to verify that they understood that the feedback had in fact been false. Nonetheless, participants' responses to subsequent questions indicated that the feedback still influenced their self-perceived accuracy as well as their self-efficacy as to future performances in similar assignments. In other words, the original feedback could not be undone by subsequent overriding information, even though participants were unaware of this.

The research on confirmation bias to date employs paradigms in which participants are brought in contexts in which they fall prey (experimental condition) or not (control condition) to confirmation bias. Both between- and within-subject designs have been used. All research to date shares an ignorance of possible *a priori* individual differences in confirmation proneness. Hence, there is currently no insight into possible personality factors that predict confirmation bias. The ignorance of possible individual differences has lead to an absence of measures of confirmation proneness. The present research sought to explore individual differences in confirmation proneness. Specifically, a measure of confirmation proneness was developed in three

stages. First, items measuring various manifestations of confirmation bias were created (Study 1). Next, test-retest reliability of the scale was explored (Study 2). Finally, validity of the scale was tested, employing a handful of decision paradigms in which participants can choose between confirmation and disconfirmation of a hypothesis (Study 3).

Study 1: Construction of the confirmation inventory

Some characteristics are more readily measurable by self-reports than others (see Nisbett & DeCamp Wilson, 1977; Schwarz, 1999). For example, people are able to report on their tendency to comply, but they are almost by definition unable to estimate the extent to which they are susceptible to the development of false memories. Put simply, if one knew one's memory to be false, it would no longer be a false memory, even though one would have experienced the susceptibility to false memories (see Gudjonsson, 2003). There is reason to argue that confirmation bias is hardly suitable for measurement by simple self-report. That is, few people are likely to endorse an item like 'Do you tend to solely give attention to information which supports your idea, while ignoring disconfirming information?' Hence, the items of the Confirmation Inventory (CI) to be developed were phrased in such a way that they would not represent confirmation as a problem, but rather as an efficient decision-making strategy. The items were created by the present author. It was attempted to address various manifestations of the confirmation bias (e.g., the tendency to jump to conclusions, and sticking to one's opinion in the face of disconfirming evidence). All items were answered on a five-point scale (1 = *strongly disagree*; 2 = *disagree*; 3 = *neutral*; 4 = *agree*; 5 = *strongly agree*).

The original version of the CI was completed by 388 individuals, primarily undergraduate psychology and law students. The sample consisted of 241 women (62%) and 147 men (38%). The mean age in this sample was 21.5 years (*SD* = 4.6, range 15-60).

The data were subjected to a principal component analysis (PCA). This analysis yielded five factors with eigenvalues greater than or equal to one (2.6, 1.5, 1.3, 1.1, and 1.0, respectively). Total explained variance was 53.8%. The factor loadings of all items on the primary factor (of which the explained variance was 18.4%) are presented in table 1. It was decided to select items based on their loading on the first factor. Hence, the first ten items were retained, while the last four were excluded.

Table 1 **Factor loadings of the original 14 items.**

1.	I only need a little information to reach a good decision	0.56
2.	My first impression usually seems to be correct	0.52
3.	I usually quickly know the ins and outs of the matter	0.52
4.	Some things are simply the way they are, regardless of other people's counterarguments	0.50
5.	Sometimes, I know things before there is actual proof of them	0.48
6.	I usually trust my intuition	0.48
7.	The first blow is half the battle	0.46
8.	Generally, half a word is enough for me	0.45
9.	If my reasoning and the physical evidence are in contradiction, I tend to give more weight to my reasoning than to the evidence	0.44
10.	Once I have a certain idea, I can hardly be brought to change my mind	0.43
11.	Once I have made a decision, I do not change it	0.34
12.	Before making a decision, I want to know all the relevant facts	-0.27
13.	The expression 'seeing is believing' does not always apply, because one's eyes can be deceptive	-0.14
14.	I am rather changeable	0.06

Items are presented in the order dictated by the magnitude of the loading on the principal component. This order can also be maintained when employing the CI. Items 12 and 14 are reversed scored.

The internal stability (Cronbach's alpha) of the 10-item CI was 0.65, which is acceptable. Men scored slightly higher (33.3, *SD* = 4.5) than women (32.1, *SD* = 4.0): $t(386) = 2.8$, $p < 0.005$. Given that there are ten items with an answer format ranging from 1 through 5, the maximal range is 10-50. The score on the CI did not correlate with age ($r = -0.04$, *ns*).

In summary, after PCA, a 10-item self-report arose with acceptable internal stability. It is important to note that the items were phrased in a way that they would not discourage endorsement. Thus, the CI should not be seen as a symptomatic measure. The true measurement pretence (i.e., the susceptibility to confirmation bias) is not easily deducted from the item content. Not only does the framing of the items seek to avoid reluctance to endorse, it also aims at making confirmation bias susceptible to verbalisation in the first place. Indeed, the item 'Some things are simply the way they are, regardless of other people's counterarguments', may be more likely to be endorsed than the item 'I never listen to counterarguments of other people'. It remains to be seen (in Study 3) whether the CI possesses concurrent validity. However, Study 2 will first address the temporal stability of the scale.

Study 2: Temporal stability

In this study, the test-retest reliability of the CI was explored. Seventy-five undergraduate psychology students (61 women) completed the CI twice with a five-week interval. The mean age in this sample was 21.4 years (*SD* = 1.7; range: 29-26).

The mean scores on the CI at the two measurement times were 31.2 (*SD* = 4.3; $\alpha = 0.68$) and 31.2 (*SD* = 4.5; $\alpha = 0.73$), respectively. The correlation between the score on the CI at T1 and at T2 was 0.73 ($p < 0.001$). The intraclass coefficient was 0.84.

These findings suggest that the CI possesses adequate temporal stability, at least over a five-week period.

Study 3: Behavioural decision-making paradigms

Once the small item pool was reduced to an acceptably coherent 10-item questionnaire (Study 1), and the temporal stability was found to be sufficient (Study 2), the purpose of the present study was to evaluate the validity of the CI. Such validation was sought by subjecting a sample of undergraduate students to five decision-making paradigms. In each paradigm, the participant had to make a choice between a confirming and a disconfirming solution. It was hypothesised that participants who choose the confirming solutions would score higher on the CI than those who opted for the disconfirming solutions.

Method

Participants

In this study, 95 undergraduates participated, in return for course credits. There were 77 women and 18 men in this sample. Their mean age was 20.0 years (*SD* = 3.4; range: 17-41). All participants were tested individually.

Materials and procedure

First, participants completed the CI (see above). Next they were given the following five situation descriptions (one at a time), and were asked to indicate how they would react.

1 You engage in a game in which your opponent has written down a rule with regard to three numbers. He tells you that the number sequence 2-4-6 complies with the rule. It is your goal to find out what the rule is. You must achieve this by naming one number sequence, after which your co-player will inform you whether or not your sequence complies with the rule. Then, you must guess what the rule is. You think that the rule is 'add two to the previous number'. Which of the following three sequences would you put forward? 8-10-12, 3-6-9, or 1-2-3.
2 You meet a person, and you would like to find out whether he/she is an introvert or extravert. You guess that the person is an extravert. Which of the following two questions would you ask? 1) Do you like spending time home alone? 2) Do you like going to parties?
3 You are baking a cake, but you have run out of several ingredients. Hence, you use margarine instead of butter, honey instead of sugar, and brown wheat instead of white flour. The cake turns out great. You think that the reason for this is that you used the honey. Which of the following strategies would be best to test your idea? 1) Bake another cake with margarine, sugar, and wheat, 2) Bake another cake with butter, honey, and flour, or 3) Bake another cake with butter, sugar, and flour.
4 Six-year-old Karin is ill. She has lots of red spots and pimples on her body and she suffers from mild hyperthermia. You think that Karin might be overheated. Which of the following questions would you like to have answered? 1) Was Karin in contact with children who suffer from measles? 2) Is Karin allergic to mosquito bites? or 3) Did Karin spend a long time in the sun?
5 Below, there are four cards. Every card has a letter on one side, and a number on the other. Which cards (as few as possible) have to be turned in order to test the following rule: 'If there is a vowel on one side of the card, then there is an even number on the other'? The cards you are shown say: A, B, 4, 7.

These five decision-making paradigms were adopted from Baron (2000), but originate from various other researchers (Snyder & Swann, 1978; Tschirgi, 1980; Wason, 1968). As to the scoring of

the answers, as discussed in the introduction, choosing triplet 8-10-12 in vignette 1 would constitute a confirmation bias, because it hinders falsification (as opposed to the other two sequences). As to the second situation, both questions are comparably diagnostic. Hence, choosing number 2 would represent a positive test strategy, but not necessarily a bias. The best option in the third situation would be to choose strategy 1 and expect to bake a cake that does not taste as nice. Opting for strategy 2 would be slightly less diagnostic because baking a nice cake could still be attributed to other ingredients than the honey. Anyway, choosing for option 2 constitutes a confirmation bias, whereas choosing strategy 1 or 3 does not. In the fourth situation, option 3 constitutes a confirmation bias, because this question precludes falsification. As to the last decision paradigm, the well-known Wason card selection test, it is important to turn the A and the *7*. While the majority of people understand the importance of checking the A, only a small minority finds it necessary to turn the *7*. The latter action is important in order to possibly falsify the rule (by finding a vowel). Participants who chose to turn both the A and the *7* were considered to have made the correct (non-confirmatory) choice.

All participants completed the decision-making paradigms in writing, in the order presented above.

Results and discussion

The mean score on the CI was 34.9 ($SD = 4.2$; $\alpha = 0.70$). In this sample, men did not score significantly higher (35.8, $SD = 3.2$) than women (34.6, $SD = 4.4$; $t[93] = 1.1$, $p < 0.29$).

In order to test whether higher scores on the CI were associated with making confirmatory choices in the five decision-making paradigms, a composite variable was made in which the choices in the five paradigms were conjoined. Hence, the score on this variable ranged from 0 (if the participant never opted for the sole confirmatory choice) to 5 (the participant always made confirmatory choices). The mean score on this variable was 3.3 ($SD = 0.9$). The frequency distribution on the variable was such that none of the participants passed all five tests, two (2.1%) made confirmatory choices only once, 16 (16.1%) did so twice, 36 (37.9%) scored a three, 32 (33.7%) scored a four, and nine participants (9.5%) fell for the confirmation trap all five times. The reliability of the composite variable was disappointing. That is, Cronbach's alpha was 0.03. This underlines that the confirmation bias manifests in various ways that are not necessarily closely related (see Nickerson, 1998). In spite of this unreliability, the composite variable correlated significantly with the CI: $r = 0.44$ ($p < 0.001$).

By means of alternative analysis, given the low alpha, the scores on the CI of people choosing confirmatively were compared with the CI scores of participants making non-confirmatory choices. The percentages of confirmatory choosers per paradigm are displayed in figure 1. As can be seen in this graph, confirmatory choices were more frequent than non-confirmatory choices, with the exception of the cake-baking paradigm. Absolute numbers of confirmatory choices were 88, 66, 26, 70, and 65, respectively. Next, the CI scores of confirmatory and non-confirmatory choosers per paradigm were compared. The results of these analyses are presented in table 2. As can be seen, these analyses delivered some support for the idea that the score on the CI is related to actual confirmatory choosing. However, the difference occurred in only three of the five paradigms. If a Bonferroni correction were to be applied (given that five tests were conducted), only two paradigms would yield a significant difference. Hence, the support for the validity of the CI was present, but not overwhelming. Strikingly, the Wason card selection test came least close to the expected difference. It should be noted that the psychology students who served as participants in this study are made familiar with this test in the course of their study. This may have clouded the results. Also, this would explain the relatively large number of participants who passed this test (i.e., 31.6%).

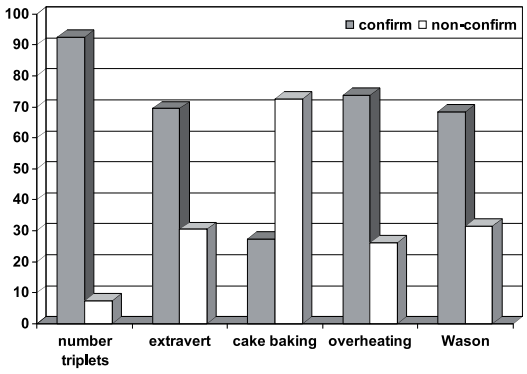

Figure 1
Percentages of participants making confirmatory or non-confirmatory choices.

Table 2	Scores on the CI (and standard deviations) as a function of confirmatory or non-confirmatory choosing.			
	Confirmatory choosers	*Non-confirmatory choosers*	*t*-value	*p*-value
Number triplets	35.7 (4.1)	32.7 (5.1)	1.4	0.16
Extravert or introvert	35.5 (4.3)	33.4 (3.8)	2.2	0.03
Baking a cake	37.2 (3.1)	34.0 (4.3)	3.4	0.001
Overheating	35.6 (3.7)	32.9 (5.0)	2.8	0.006
Wason cards	34.8 (4.1)	34.9 (4.5)	0.1	0.93

In sum, the present findings suggest that people indeed favour confirmatory decision strategies, albeit that this also depends on the decision situation at hand. The data indicate that this situation dependence is quite strong, in that individuals do not make confirmatory (or non-confirmatory) choices reliably. This is indicated by a virtually absent Cronbach's alpha (i.e., $\alpha =$ 0.03). It should be noted that the five paradigms employed in this study do not cover all the possible aspects of confirmation bias. For example, the tendency to stick to one's opinion in the face of disconfirming evidence was not covered.

Nonetheless, the findings demonstrate that the CI possesses validity as a measure of confirmation proneness. That is, confirmatory choosing was found to be associated with higher scores on the CI.

General discussion

Confirmation bias is a well-studied phenomenon. It has proven to be a multi-faceted and tenacious bias. In other words, many people suffer from various confirmation tendencies in different decision situations, and do so mostly unknowingly (e.g., Nickerson, 1998). Surprisingly, one possible flamboyant research topic, namely individual differences in confirmation proneness, has been neglected in literature to date. The present studies aimed at developing a measure of confirmation proneness, and thus sought to contribute to the insight into individual differences with respect to confirmation bias. It was chosen to develop a self-report scale. This choice implies two challenges. First, the items had to be phrased in such a way that they would render confirmation proneness susceptible to introspection. Second, the items needed to be phrased in a way that would avoid reluctance to endorse. In the first study, the initial small item pool was subjected to a PCA which resulted in a scale of ten items. In Study 2, satisfactory test-retest reliability was established. Lastly, in Study 3, higher scores on the scale were found to be associated with actual confirmatory decision strategies. As an aside, it is noteworthy that the data in Study 3 confirm that the concept of confirmation is multifaceted and therefore by definition not internally reliable. Particularly, the computation of Cronbach's alpha over the five decision situations yielded a strikingly low reliability ($\alpha =$ 0.03). Thus, the moderate alpha of the CI observed in the current studies (range: 0.65 - 0.73) can indeed be considered to be satisfactory.

Individual differences in confirmation proneness should be an important future research topic for several reasons. First, knowledge of predisposing factors such as individual differences will advance insight into solutions. Second, the creation of measures of confirmation proneness will enable researchers to employ designs in which the individual tendency to engage in confirming decision strategies is taken as a starting point. Third, measures of confirmation bias can ultimately be used in practical test situations. For example, due to a serious miscarriage of justice in the Netherlands (see Van Koppen, 2003), the Dutch public prosecution has recently started a campaign to prevent tunnel vision (i.e., being blind to alternative scenarios once a serious suspect has come into view) among district attorneys (Posthumus, 2005). In such endeavour, measures of confirmation proneness might come in handy. Likewise, it would be fruitful to investigate whether confirmation proneness is linked to various psychiatric conditions. For example, Aardema, O'Conner, Emmelkamp, Marchand and Todorov (2005) argue that a cognitive bias called inferential confusion may contribute to the development of obsessive-compulsive disorder (OCD; American Psychiatric Association, APA, 2000). Inferential confusion refers to the intertwinement of imagined and actual scenarios. Examples of items of a scale, introduced by the authors as a measure of inferential confu-

sion, are 'I am sometimes more convinced by what might be there than by what I actually see' and 'I often know a problem exists even though I don't have visible proof'. At face value, inferential confusion shares some characteristics with confirmation bias (e.g., the ignorance of disconfirming information). Hence, there is reason to argue that, like inferential confusion, confirmation bias may contribute to the development of OCD. Similarly, it seems plausible that hypochondriasis, a syndrome in which the patient remains convinced to be suffering from a serious disease, in the absence of evidence, and even after disconfirmation by clinicians (APA, 2000), is fuelled by confirmation proneness.

In short, there is a clear market for measures of confirmation proneness. Having said that, it must be acknowledged that there is room for more than one such measure. For one thing, the present findings indicate that confirmation bias is a broad concept embodying various tendencies, ranging from neglecting disconfirming evidence to rigidly sticking to one's opinion. Therefore, it could be argued that the development of various measures tapping one aspect of confirmation bias is just as worthwhile as one measure tapping all aspects. Further, it would be good if there were confirmation measures that do not rely on self-report. However, the findings in Study 3 suggest that the employment of actual decision-making paradigms may be problematic in the sense that cross-situational reliability is low. As to the CI, it must be acknowledged that the scale is a very first step in the research of individual differences in confirmation proneness.

Notwithstanding the mentioned limitations, the CI is, to the best of the author's knowledge, the first questionnaire that aims at measuring individual differences in confirmation proneness. The current findings suggest that the CI can measure confirmation proneness reliably. Hopefully, the present studies will give an impulse to the research of individual differences in, and other predisposition to, the susceptibility to confirmation bias.

References

Aardema, F., O'Conner, K. P., Emmelkamp, P. M. G., Marchand, A., & Todorov, C. (2005). Inferential confusion in obsessive-compulsive disorder: The inferential confusion questionnaire. *Behaviour Research and Therapy*, *43*, 293-308.

American Psychiatric Association (APA) (2000). *Diagnostic and Statistical Manual of Mental Disorders, 4th edition, Text Revision (DSM-IV-TR)*. Washington: APA.

Baron, J. (2000). *Thinking and deciding*. Cambridge: Cambridge University Press.

Deffenbacher, K. A. (1980). Eyewitness accuracy and confidence: Can we infer anything about their relationship? *Law and Human Behavior*, *4*, 243-260.

Gudjonsson, G. H. (2003). *The psychology of interrogations and confessions: A handbook*. Chichester: John Wiley & sons.

Kassin, S. M. (2005). On the psychology of confessions: Does innocence put innocents at risk? *American Psychologist*, *60*, 215-228.

Nickerson, R. S. (1998). Confirmation bias: A ubiquitous phenomenon in many guises. *Review of General Psychology*, *2*, 175-220.

Nisbett, R. E. & DeCamp Wilson, T. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, *84*, 231-259.

Oswald, M. E. & Grosjean, S. (2004). Confirmation bias. In: R. F. Pohl (ed.). *Cognitive illusions: A handbook on fallacies and biases in thinking, judgement and memory* (pp. 79-96). East Sussex: Psychology press.

Posthumus, F. (2005). *Evaluatieonderzoek in de Schiedammer parkmoord [Evaluation in the Schiedam park murder]*. Den Haag: Openbaar ministerie.

Risinger, D. M., Saks, M. J., Thompson, W. C. & Rosenthal, R. (2002). The Daubert/Kumho implications of observer effects in forensic science: Hidden problems of expectation and suggestion. *California Law Review*, *90*, 3-56.

Ross, L., Lepper, M. R. & Hubbard, M. (1975). Perseverance in self-perception and social perception: Biased attributional processes in the debriefing paradigm. *Journal of Personality and Social Psychology*, *32*, 880-892.

Schwarz, N. (1999). Self-reports: How the questions shape the answers. *American Psychologist*, *54*, 93-105.

Snyder, M. & Swann, W. B. (1978). Behavioral confirmation in social interaction: From social perception to social reality. *Journal of Experimental Social Psychology*, *14*, 148-162.

Sweeney, P. D. & Gruber, K. L. (1984). Selective exposure: Voter information preferences and the Watergate affair. *Journal of Personality and Social Psychology*, *46*, 1208- 1221.

Tschirgi, J. E. (1980). Sensible reasoning: A hypothesis about hypotheses. *Child Development*, *51*, 1-10.

Van Koppen, P. J. (2003). *De Schiedammer parkmoord: Een rechtspsychologische reconstructie [The Schiedam park murder: A psychology-and-law reconstruction]*. Nijmegen: Ars Aequi Libri.

Wason, P. C. (1968). Reasoning about a rule. *Quarterly Journal of Experimental Psychology*, *20*, 273-281.