

## Ambiguity in the Internal/External Distinction in Causal Attribution

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Many studies of causal attribution have used measures of internal (or personal) and external (or situational) attribution. Two studies are reported which show that this distinction is ambiguous because both halves of it confound a distinction between behavior seen as conscious, intentional, and done for reasons which may involve reference to either internal or external factors and behavior seen as unconscious, unintentional, and deterministically caused, again by factors which may be either internal or external to the actor. Future studies should use measures which are unconfounded with respect to this distinction. © 1991 Academic Press, Inc.

Heider (1958) argued that the distinction between internal and external factors was of fundamental importance in causal attribution. Supposedly one of the primary questions that people address in causal attribution is whether some behavior was due to something about the person or to something about the situation they were in. This distinction has been used in many studies since then, and has often formed the basis for dependent measures of causal attribution. It has not escaped criticism, however. Miller, Smith, and Uleman (1981) identified four problems for the internal/external distinction:

1. The hydraulic assumption. Heider (1958) argued that there was a hydraulic relation between internal and external causes, such that attributing more causality to one entailed attributing less causality to the other. This assumption has not been supported by research in which personal and situational attributions are measured on different scales (Solomon, 1978).

2. The category error. The two categories cut across distinctions po-

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tentially of theoretical interest, and are so broad as to be virtually meaningless.

3. The teleological confusion. Miller et al. (1981) argued that the distinction breaks down "whenever external cues are perceived and deliberately acted on by the person" (p. 82). This can be related to the observation by Ross (1977) that, sometimes, personal and situational attributions appear to be virtual paraphrases of each other. For example, under the coding scheme used by Nisbett, Caputo, Legant, and Maracek (1973), "I want to make a lot of money" would be coded an internal attribution, and "Chemistry is a high-paying field" would be coded external. In fact, these statements contain similar information and imply each other, as explanations for choice of career. The choice of expression does not imply that one person saw the choice as internally caused and the other saw it as externally caused.

4. The convergent validity problem. Herzberger and Clore (1979) found lack of convergence among various measures of personal and situational attribution, a finding repeated and extended by Miller et al. (1981, Study 1). According to Miller et al., these results indicated that "many subjects do not think about dispositional and situational causality as theorists expect" (p. 86).

Miller et al. (1981) therefore set out to discover the interpretations that people make of situational and dispositional attributions. Their conclusion was that people interpret the distinction as representing acts freely chosen by the actor versus acts not freely chosen or constrained by situational factors. They argued that this is inconsistent with definitions of causality used in other areas of causal attribution research such as actor-observer differences, "where dispositional causality can be identified with stable traits that determine behaviour across situations" (p. 87). This is evident in a measure used in several studies and originating with Storms (1973): "How important were your (his) personality, traits, character, personal style, attitudes, mood, and so on in causing you (him) to behave the way you (he) did?" In this measure, the first four of the six categories are trait-like categories and the actor is the grammatical *object* of the verb "cause."

The solution adopted by Miller et al. (1981) was supposed to save the basicity of the internal/external distinction (if not its unidimensionality) by selecting a particular interpretation of it, as a chosen-not chosen distinction. Other authors have argued, however, that the internal/external distinction is confounded with other distinctions. Kruglanski (1975) argued that the internal/external distinction applies to involuntary occurrences but not to voluntary actions, because all such actions are understood as internally caused, by the will of the actor. Buss (1978) argued for a distinction between reasons and causes, such that reason explanations were given for voluntary or intentional (internally caused)

actions, and cause explanations for involuntary or nonintentional (externally caused) behavior.

Locke and Pennington (1982) pointed out that the reason/cause distinction was not well chosen, because in philosophy "cause" is a generic term and reasons constitute one type of cause. They went on to argue that causes could be divided into internal and external, internal causes could be divided into reasons and other internal causes, and reasons could be divided into psychological reasons (having to do with some feature of the actor) and situational reasons. Although the internal/external distinction is still treated as basic in this scheme, essentially the scheme allows four types of causal attribution: external causes, internal causes other than reasons, situational (or external) reasons, and psychological (or internal) reasons.

Locke and Pennington (1982) based their hierarchical arrangement on the argument that reasons are a type of cause. Different hierarchical arrangements are also possible. For example, one can be based on the distinction made by Kruglanski (1975) between voluntary actions and involuntary occurrences, and that made by White (1988, 1989) between mental operations believed to involve free will and consciousness and those believed to be unconscious and deterministic. The basic distinction in this case is between behavior seen as conscious, voluntary, and intentional and explained in terms of reasons, and behavior seen as unconscious and deterministic, and explained in terms of causes other than reasons. Each of these types is further subdivided, because reasons can make reference to either internal or external things, and deterministic causes can also be seen as either internal or external to the actor.

Whichever of these schemes one prefers, the arguments of these authors share two significant implications: (i) that the internal/external (or person/situation) distinction is not one distinction but two, because both halves of it confound the distinction between conscious, voluntary action explained in terms of reasons and unconscious, deterministically caused behaviors explained in terms of causes other than reasons; and (ii) that many studies in causal attribution have asked subjects a question that is fatally ambiguous in its failure to make that distinction. The latter follows from the former, so my aim in this paper is to report two studies that bear on the former.

In the first study, different groups of subjects are asked to judge (i) whether a given explanation for some behavior is internal or external to the actor and (ii) whether it is a reason or a cause. If the reason/cause distinction (or the distinction between reasons and other causes, depending on whether laypeople see reasons as a type of cause or not) is in common sense conceptually independent of the internal/external distinction then it should be possible to construct stimulus materials for which these two judgements turn out to be uncorrelated. This is not the same as saying

that the two judgements are usually uncorrelated in the world outside the laboratory. It would not count against the argument that the internal/external and reason/cause distinctions are independent if in fact people give internal reasons more often than external ones, or external causes more often than internal ones. Conceptual independence requires only the *possibility* of no correlation, so one internally valid demonstration of no correlation would be sufficient.

## STUDY 1

### *Method*

*Subjects.* The subjects were 40 unpaid volunteers drawn from first-year undergraduate tutorial classes in the Department of Psychology at Auckland University, New Zealand. At the time of the study they had not been taught any psychology of relevance to the present study.

*Materials.* A set of 28 sentences was constructed, each having the form "Someone did *x* because *y*" (e.g., "Michael entered the book shop because he was looking for a book").<sup>1</sup> An equal number of actors of each sex were used, and names (and sexes) were allocated randomly to sentences. The sentences are listed in the Appendix. Two booklets were constructed using these sentences. In one, the task was to say for each sentence whether it was the person's reason for doing that thing or a cause of their behavior, and these two alternatives were presented underneath each sentence. The sentences were randomly ordered, seven sentences per page. The front page contained written instructions asking subjects to judge whether the explanation given was a reason for the person's doing that thing or a cause of their behavior, and to place a tick by the alternative they chose in each case. The instructions went on to say that this was not a test, but that subjects should be careful not to miss any items out, and to place their ticks carefully so that there was no doubt about which alternative they were endorsing.

The second booklet was similar in all respects except that the two alternatives presented were the terms "internal" and "external," and the instructions asked subjects to judge whether the explanation given referred to something internal to the actor or something external to the actor.

The two booklets constituted between-subjects experimental conditions, with 20 subjects in each condition.

*Procedure.* The experimenter introduced the study in first-year undergraduate tutorial classes. Students were told that the study involved filling out a brief written questionnaire. Names and other personal details were not required. No deception was involved, and students who volunteered were free to opt out at any stage. The experimenter could not explain the aims and nature of the study at that time, for fear of contaminating subsequent data collection (Study 2), but a description of the study and its results would be put on a particular noticeboard as soon as analysis was completed. Questionnaires were then distributed to those students who volunteered. The experimenter and a graduate tutor supervised them to ensure that collaboration did not occur, and to answer questions. Upon completing the questionnaire, each subject was thanked for participating. When analysis of this and Study 2 was completed, an information sheet describing the nature, aims, and results of the studies

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<sup>1</sup> The sentences were constructed by the experimenter, with the aim of making a set for which the internal/external and reason/cause distinctions would be uncorrelated. This is permissible because of the fact that external validity, and representativeness of the sample of sentences, are not at issue. The sentences were also constructed so as to look plausible in terms of the events described and explanations given.

was posted on the prearranged noticeboard and also distributed to tutors who had given assistance.

### *Results and Discussion*

Despite the warning in the instructions, a small number of blanks were left, so that not all sentences had the same number of responses. For this reason the data for the analysis were proportions of responses of a certain type, rather than actual numbers. For each sentence, then, two numbers were obtained: the proportion of "reason" responses to all responses in that version and the proportion of "internal" responses to all responses in that version. These proportions were correlated across the 28 sentences, using the Pearson product-moment correlation coefficient. The result showed that  $r = +0.10$ , which is not significantly different from zero. This is consistent with the hypothesis that the reason/cause and internal/external dimensions are independent. To repeat, this does not give an indication of the correlation between these things in naturally occurring explanations, because of the artificial method of stimulus construction. It is only the possibility of finding zero correlation that was at issue in this study.

It perhaps seems plausible that behavior that is seen as conscious, voluntary, and intentional is associated with internal attributions (as claimed, for example, by Kruglanski, 1975), and behavior that is seen as unconscious and deterministic is associated with external attributions. In fact, though, this should not be the case. If behavior that is seen as conscious, etc. is explained in terms of reasons, and behavior that is seen as unconscious, etc., is explained in terms of causes other than reasons, then the results of Study 1 imply that either can be associated with either internal or external attributions. The reason for this is that the lack of correlation found in Study 1 means that reason explanations can make reference to either internal or external factors, and so can causal (non-reason) explanations. This means that, if the reason/cause distinction is manipulated independently of the internal/external distinction, judgments of consciousness and intentionality of the behavior being explained should show no relationship with the internal/external distinction. If this is found, it will show that the internal/external distinction confounds the distinction between behavior that is seen as conscious and intentional and done for reasons (which can refer to either internal or external things) and behavior that is seen as unconscious and unintentional (deterministic) and brought about by causes other than reasons (which can also be either internal or external). The purpose of Study 2 was to test this reasoning.

## STUDY 2

### *Method*

*Subjects.* The subjects were 60 unpaid volunteers drawn from first-year undergraduate tutorial classes in the Department of Psychology at Auckland University. At the time of

the study they had not been taught any psychology of relevance to the present study. None had been a subject in Study 1.

*Materials.* The design of this study requires the construction of materials in which the reason/cause and internal/external dimensions are manipulated orthogonally, yielding four groups of sentences: internal reasons, external reasons, internal causes, and external causes. This was achieved with the sentences used in Study 1. A sentence was assigned to the "internal reason" group if it had been judged to be internal by at least 13 out of 20 subjects in Study 1 *and* judged to be a reason by at least 13 out of 20 subjects in Study 1. The equivalent criterion was used to assign sentences to each of the other three groups. By this criterion, three of the four groups had four members each, and the fourth group had six. Because the design requires equal numbers of sentences in each group, two of these six were excluded randomly, giving four in each group.

Two questionnaires were constructed, differing only in the dependent measure used. In one questionnaire the measure was a five-point rating scale anchored by "done consciously" at one end and "not done consciously" at the other. In the other questionnaire the measure was a five-point rating scale anchored by "intentional" at one end and "not intentional" at the other.

In both questionnaires all 28 sentences from Study 1 were included, although only the 16 that had been assigned to one of the four groups were included in statistical analysis. The other 12 were included partly as fillers, partly to reduce the likelihood that subjects would recognize that the 16 items fell into four groups. The sentences were presented in a booklet, randomly ordered, 7 to a page. Each sentence was accompanied by whichever rating scale was being used in that questionnaire.

Written instructions on the first page explained the format of the questionnaire and asked subjects to rate the behavior in each sentence on the rating scale that accompanied it. Standard instructions for the use of the rating scales were presented. Subjects were told that they were to rate the deed of the first actor in the sentence, not any other deeds that might appear. For instance, in "Edward jumped because someone made a loud noise behind him," they were to rate Edward's jumping, not the making of the noise. They were told that it was not a test, but asked to be careful not to miss any items out. They were not told that more than one version of the questionnaire existed.

The consciousness and intentionality versions constitute a between-subject factor, with 30 subjects in each condition. One subject left some blanks and was excluded from further analysis, leaving 29 in the intentionality version.

*Procedure.* All details of procedure are as for Study 1.

*Design.* The design was a three-factor split-plot analysis of variance with one between-subject factor (consciousness measure vs intentionality measure) and two within-subject measures (reason/cause and internal/external). The prediction concerning the internal/external factor is one of no difference. Making inferences from a finding of no significant difference is problematic, of course, and the *F* distribution does not permit a hypothesis of significant similarity to be tested. But an indication of the effect of each factor on subjects' ratings can be obtained by calculating the proportion of variance accounted for by that factor, and the prediction for this is that the internal/external factor will account for a negligible proportion of the variance.

## *Results and Discussion*

Each rating was scored from 1 (done consciously/intentional) to 5 (not done consciously/not intentional). Means for the various conditions are presented in Table 1. Each mean in Table 1 is the sum of the means for the four sentences in that condition: means for individual sentences are presented in Table 2.

TABLE 1  
MEAN SUMMED RATINGS, STUDY 2

Measure	Reasons		Causes	
	Internal	External	Internal	External
Intentionality	4.17	4.52	18.03	17.45
Consciousness	4.70	5.27	16.63	17.63

*Note.* Each number is the sum of means for the four sentences in each group. The possible range is from 4 (done consciously/intentional) to 20 (not done consciously/not intentional).

In the analysis of variance there was a significant effect of the reason/cause factor,  $F(1, 171) = 1961.29, p < .001$ . This shows, as expected, that reasons whether internal or external were judged conscious and intentional, and causes whether internal or external were judged unconscious and unintentional.<sup>2</sup> There was no significant effect of the internal/external factor,  $F(1, 171) = 1.38, p > .05$ . This is well short of the critical value of 3.91. No other effect was significant.

Proportions of variance accounted for were calculated using the formulae given by Vaughan and Corballis (1969). The reason/cause factor accounted for 81.4% of the variance in the data, and the internal/external factor accounted for 0.02% of the variance.

It was therefore found, as predicted, that the internal/external factor showed no significant effect and accounted for virtually none of the variance in judgments of consciousness and intentionality. This result shows that the internal/external distinction confounds the distinction between behavior regarded as done consciously, intentional, and explained by reasons, and behavior regarded as not done consciously, not intentional, and explained by causes. In other words, simply attributing some behavior to something internal (or external) to the actor is not sufficient to tell us whether the attributer regarded that behavior as conscious (etc.) or not.

## DISCUSSION OF BOTH STUDIES

The main implication of these results is that asking people to make causal attributions to the person or to the situation (or to something internal or something external) is inadequate because it fails to capture the basic distinction between behavior seen as conscious, intentional, and explained in terms of reasons, and behavior seen as unconscious, unin-

<sup>2</sup> Although this result is not surprising, neither is it tautological. Young (1988) has argued for the intelligibility of the view that there can be unconscious reasons (for example in self-deception), and some authors also accept the possibility of unconscious intentions: for example, Jones and Davis (1965) state that an actor's intention may or may not be conscious and deliberate.

TABLE 2  
MEANS FOR INDIVIDUAL SENTENCES, STUDY 2

Sentence	Intentionality	Consciousness
	Internal reasons	
Entered	1.14	1.17
Went into town	1.03	1.17
Turned on	1.00	1.13
Climbed	1.00	1.23
	External reasons	
Bought	1.21	1.17
Helped	1.28	1.60
Took grapes	1.03	1.37
Sent card	1.00	1.13
	Internal causes	
Blushed	4.72	4.37
Played bad shot	4.52	4.03
Stuttered	4.48	4.07
Groaned	4.31	4.17
	External causes	
Let go	3.62	4.27
Jumped	4.66	4.53
Gasped	4.45	4.17
Slipped over	4.72	4.67

*Note.* Range = 1 (done consciously/intentional) to 5 (not done consciously/not intentional). Sentences can be identified by referring to the Appendix.

tentional, and explained in terms of deterministic causation. The four problems with the internal/external distinction identified by Miller et al. (1981) can be seen as manifestations of this.

The hydraulic assumption fails because internal and external are not opposites on a single dimension. Each covers more than one type of thing, and either can have the same role in some instances. For example, giving an internal reason by no means precludes the giving of an external reason for the same action: someone could say "I chose chemistry because it is a high-paying field and I want to make a lot of money" without any sense of oddness or self-contradiction. Further research could be carried out to investigate whether a hydraulic assumption holds for the distinction made here, so that attributing more causality for some behavior to conscious, intentional factors and reasons entails attributing less causality to unconscious, unintentional factors and deterministic causes.

The category error reflects the fact that the internal and external categories cut across the distinction between conscious and intentional behavior done for reasons and unconscious unintentional behavior deterministically caused. There should be no category error in respect of this



distinction because additional categories of theoretical interest should be subsumed under one or the other side of it.

The present distinction resolves the teleological confusion by differentiating conscious and intentional acting upon what Miller et al. (1981, p. 82) called "external causes" (things that people would refer to as external or situational reasons) from roles of situational factors in the deterministic causation of behavior. As stated, wanting to make a lot of money and chemistry being a high-paying field would both be categorized as reasons and as belonging under the category of behavior produced consciously and intentionally, and this common categorization reflects their implication of each other.

Finally, low convergent validity may be an effect of ambiguity in measures of internal and external causality. One would not expect two measures to show convergence if one measures attributions of internal or external reasons and the other measures internal or external deterministic causes. Measures that take account of this distinction, and capture the same side of it, should show higher convergent validity than those used by Herzberger and Clore (1979).

Any causal attribution research which uses the internal/external distinction as the basis for a dependent measure and does not differentiate between behavior seen as conscious and intentional and behavior seen as unconscious and unintentional is therefore flawed by profound ambiguity in its findings, whatever they may be. Let me take the actor-observer differences literature as an example. Jones and Nisbett (1972) proposed that "there is a pervasive tendency for actors to attribute their actions to situational requirements, whereas observers tend to attribute the same actions to stable personal dispositions" (p. 80, italics removed). They argued that this tendency reflects not just motivational but also cognitive factors, and discussed the possible effects of several (e.g., visual orientation differences). Although research findings have been mixed (Monson & Snyder, 1977), the conclusion of a recent review was that "the basic Jones-Nisbett effect now appears to be firmly established" (Watson, 1982, p. 698).

The problem is that, even if Watson's conclusion is correct, it is not clear just what the effect represents. If we assume that both actors and observers agree in whether they see behavior as produced by the subject or unconsciously caused, then the effect could reflect either a tendency for actors to choose external reasons and observers to choose internal reasons for behavior seen by both as conscious, or a tendency for actors to choose external causes and observers to choose internal causes for behavior seen by both as unconsciously caused (or both). But there is no guarantee that actors and observers do see the behavior in the same way. If one sees the behavior as conscious and the other sees it as not conscious, or to put the problem in its general form if actors tend to see behaviors

as conscious more than observers do (or vice versa), other things being equal, then the comparison in terms of internality/externality is meaningless. Not knowing how they see the behavior makes the comparison meaningless; and it cannot be made meaningful if we find out that they see it in different ways.

Although I have taken actor–observer differences as a convenient example, analogous problems apply to any area of causal attribution research in which measures of causal attribution to internal and external factors have been used. This is more than just a measurement issue. There is a need for studies that use measures that are disambiguated in terms of the distinctions made here: but this in turn implies a need for theories and hypotheses phrased in terms of those distinctions. For example, the actor–observer differences hypothesis (Jones & Nisbett, 1972) could and perhaps should be restated in terms of the distinction between behavior seen as conscious, etc., and done for reasons, and behavior seen as unconscious, etc., and deterministically caused. This would probably require some rethinking of the reasoning behind the hypothesis. The internal/external distinction, being a distinction in terms of locus of causality, has an obvious relevance to covariation-based models of causal attribution such as Kelley's (1967, 1972a,b, 1973) ANOVA and causal schema models. The present distinction is of a different kind, in that covariation cues cannot be used to distinguish different types of factor that are both internal to the actor, or both external, and therefore suggests a need for a different kind of causal attribution theory.

## APPENDIX

### List of Sentences Used in Study 1

Michael entered the book shop because he was looking for a book.  
 Mary broke a vase because she was careless.  
 Paul went to the coffee bar because he was hoping to see a friend there.  
 Elizabeth ran away from the dog because she was terrified.  
 Thomas let go of the kettle because it was scalding hot.  
 Susan blushed because an embarrassing memory had come to mind.  
 John bought the house because it was in good repair.  
 Joan drove into the back of a stationary car because her brakes failed.  
 Edward jumped because someone made a loud noise behind him.  
 Christine went into town because she had decided to see a film.  
 James helped his friend study because she was nervous about her exam.  
 Jane played a bad golf shot because she was tired.  
 Katherine opened the toolbox because she thought the tool she wanted was there.  
 Robert went to the Art Gallery because an exhibition of Rembrandt paintings was on there.

Richard gasped because two cars almost collided.

Anne turned on the television because she wanted to watch a particular programme.

David slipped over because there was ice on the pavement.

Margaret walked into a lamppost because she was daydreaming.

Steven applied for a job because it had a good rate of pay.

Jill stood in a shop doorway because it was raining.

Brian stuttered because he was nervous.

Graham took his mother grapes because she was ill.

Harriet climbed the hill because she wished to see the view from the top.

Tania groaned because she felt a sudden severe pain.

William cried because a friend had died.

Pauline asked someone the time because she didn't know what it was.

George sent his parents a card because it was their wedding anniversary.

Sarah woke up because the alarm clock went off.

## REFERENCES

- Buss, A. R. (1978). Causes and reasons in attribution theory: A conceptual critique. *Journal of Personality and Social Psychology*, **36**, 1311–1321.
- Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.
- Herzberger, S. D., & Clore, G. L. (1979). Actor–observer attributions in a multitrait-multimethod matrix. *Journal of Research in Personality*, **13**, 1–15.
- Jones, E. E., & Davis, K. E. (1965). From acts to dispositions: The attribution process in person perception. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 2), New York: Academic Press.
- Jones, E. E., & Nisbett, R. E. (1972). The actor and the observer: Divergent perceptions of the causes of behavior. In E. E. Jones, D. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins, & B. Weiner (Eds.), *Attribution: Perceiving the causes of behavior*. Morristown, NJ: General Learning Press.
- Kelley, H. H. (1967). Attribution in social psychology. In D. Levine (Ed.), *Nebraska Symposium on Motivation* (Vol. 15, pp. 192–238). Lincoln: Univ. of Nebraska Press.
- Kelley, H. H. (1972a). Attribution in social interaction. In E. E. Jones, D. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins, & B. Weiner (Eds.), *Attribution: Perceiving the causes of behaviour* (pp. 1–26). Morristown, NJ: General Learning Press.
- Kelley, H. H. (1972b). Causal schemata and the attribution process. In E. E. Jones, D. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins, & B. Weiner (Eds.), *Attribution: Perceiving the causes of behaviour* (pp. 151–174). Morristown, NJ: General Learning Press.
- Kelley, H. H. (1973). The processes of causal attribution. *American Psychologist*, **28**, 107–128.
- Kruglanski, A. H. (1975). The endogenous–exogenous partition in attribution theory. *Psychological Review*, **82**, 387–406.
- Locke, D., & Pennington, D. (1982). Reasons and other causes: Their role in the attribution process. *Journal of Personality and Social Psychology*, **42**, 212–223.
- Miller, F. D., Smith, E. R., & Uleman, J. (1981). Measurement and interpretation of situational and dispositional attributions. *Journal of Experimental Social Psychology*, **17**, 80–95.
- Monson, T. C., & Snyder, M. (1977). Actors, observers, and the attribution process: Toward a reconceptualisation. *Journal of Experimental Social Psychology*, **13**, 89–111.

- Nisbett, R. E., Caputo, C., Legant, P., & Maracek, J. (1973). Behaviour as seen by the actor and as seen by the observer. *Journal of Personality and Social Psychology*, **27**, 154–165.
- Ross, L. (1977). The intuitive psychologist and his shortcomings: distortions in the attribution process. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 10, pp. 174–220). New York: Academic Press.
- Solomon, S. (1978). Measuring dispositional and situational attributions. *Personality and Social Psychology Bulletin*, **4**, 589–594.
- Storms, M. D. (1973). Videotape and the attribution process: Reversing actors' and observers' points of view. *Journal of Personality and Social Psychology*, **27**, 165–175.
- Vaughan, G. M., & Corballis, M. C. (1969). Beyond tests of significance: estimating strength of effects in selected ANOVA designs. *Psychological Bulletin*, **72**, 204–213.
- Watson, D. (1982). The actor and the observer: How are their perceptions of causality divergent? *Psychological Bulletin*, **92**, 682–700.
- White, P. A. (1988). Knowing more about what we can tell: "Introspective access" and causal report accuracy ten years later. *British Journal of Psychology*, **79**, 13–45.
- White, P. A. (1989). A theory of causal processing. *British Journal of Psychology*, **80**, 431–454.
- Young, J. (1988). Is Schopenhauer an irrationalist? *Schopenhauer Jahrbuch*, **69**, 85–100.