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## Commentary on Govier

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# Commentary on Trudy Govier: “Two is a Small Number: False Dichotomies Revisited”

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## 1. INTRODUCTION

First of all, I want to say that Professor Govier contributed to the study of conceptual structures by writing a very insightful and simulating paper about the dichotomous framework and the ways uses of that framework may go awry. The case of claims of dichotomy (exclusive disjunctions) illustrates how the choices of logical tools are connected, sometimes quite unexpectedly, with larger issues about human thought and culture. In the history of logic there has been a long-term, rather unfortunate, prejudice in favor of the exclusiveness of disjunctions. As Else Barth noted (1974, p. 418), “practically all traditional logicians regarded the notion of exclusive disjunction as a more important logical tool than that of inclusive disjunction.” Thus, there is a particular value attached to getting clear about the mode of thought here analysed by Professor Govier.

In what follows I shall briefly comment on three issues: the ways one may argue fallaciously starting from an inclusive disjunction ( $A \vee B$ ); the ways one may do it starting from an exclusive disjunction ( $A \# B$ ); and the ways one may block, at an early stage, the slippery journey described at the end of the paper.

## 2. INCLUSIVE DISJUNCTION

Professor Govier mentions two interesting ways of reasoning fallaciously from an premise  $A \vee B$  (or, for all  $x$ :  $Ax \vee Bx$ ). One way would be to start from a disjunctive premise that is flawed (but superficially plausible), the other to use a fallacious rule of inference, in particular one that takes the inclusive disjunction to yield the same conclusions as an exclusive one (both errors could be combined).

The first case would fall under the fallacy of problematic premise, but Govier rightly points out that, since the premise flaw could be covered up by the trappings of rigorous logic in what follows (say a disjunctive syllogism or a constructive dilemma), one may in some cases speak of a quasi-logical argument. This, of course, does not mean that there is anything wrong with these logical rules of inference. But the point is that also valid rules of logic can be misused. When logic is misused in this way, covering up a flawed inclusive disjunction, this may be called a fallacy of *false dilemma*.

The second case could in some instances, where the linguistic conventions about the ways to express inclusive and exclusive disjunctions permit so, be construed as a case of equivocation. However, the inference from inclusive to exclusive disjunction being invalid, it may also be construed as a *non sequitur*. In fact, the case adduced by Govier ( $A \vee B, B; \text{therefore } \neg A$ ) much resembles the one of asserting the consequent (a standard example of *non sequitur*), since  $A \vee B$  is equivalent to  $\neg A \supset B$ . This invalid inference may be confused with another, valid, inference that one obtains by substituting an exclusive disjunction for the inclusive one ( $A \# B, B; \text{therefore } \neg A$ ). This latter rule of inference was known to the Stoics and bears the traditional name of *modus ponendo tollens*.

### 3. EXCLUSIVE DISJUNCTION

With exclusive disjunctions, or claims of dichotomy, we have again the same ways of reasoning fallaciously: the disjunctive premise could be flawed or the rule of inference used could be (or both). Govier concentrates on the ways the premise could be flawed. She distinguishes six ways in which this could come about. The first three ways are ways in which the claim of dichotomy could actually be false (as I would say), whereas the other ways are ways in which the claim could fail to be true, or to be knowable, without being false.

Now, since a dichotomous claim can be written as the conjunction of a claim of exhaustiveness and a claim of exclusiveness, it can be false because of a lack of exhaustiveness, or a lack of exclusiveness or both (Govier's (i), (ii), and (iii)). This is true for the cases where we consider claims that are modalized (necessarily  $A \# B$ ), or generalized (for all  $x: Ax \# Bx$ ), or both (necessarily for all  $x: Ax \# Bx$ ). For instance, 'necessarily for all  $x: Ax \# Bx$ ' can be false because 'necessarily for all  $x: Ax \vee Bx$ ' is false (lack of exhaustiveness), or because 'necessarily for all  $x: \neg(Ax \cdot Bx)$ ' is false (lack of exclusiveness), or because both are false. However, if no modalization or generalization is present ( $A \# B$ ), the last possibility is excluded, since  $A \vee B$  (exhaustiveness) and  $\neg(A \cdot B)$  (exclusiveness) can not both be false. So, in that case, there are only two ways to be false, corresponding to those two lines in the truth table where the exclusive disjunction is false.

Clearly Govier includes the generalized case, since she seems to be concerned primarily with predicates, rather than statements (cf. her note 5). It is not so clear whether she also has the modalized cases in mind, though her use of 'must' and 'can' suggests that she does (but formulas are unmodalized). Somehow the importance of modality seems a bit underplayed.

Govier goes on to point out three other ways a dichotomous claim could be false. I must admit that I see no other ways it could be false, though I am happy to agree that there are other ways in which it could fail to be true. So perhaps our only difference regards the use of the word 'false'. Govier's fourth way (ill-formedness) makes, I would say, the dichotomy indefinite, rather than true or false. I'm thinking here in terms of a three-valued logic, where statements are assigned the value 'indefinite' in cases of vagueness or referential failure (Blau 1978). Ill-formedness (lack of clarity) can be seen as a special case of vagueness. The same holds of Govier's fifth way (off-spectrumness), which is a kind of category mistake and, therefore, can also be classified as a kind of

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vagueness (Blau 1978, p. 57). These are important ways in which dichotomous statements can fail to be true.

About Govier's sixth case (indeterminacy), however, I disagree. There are of course philosophical positions in which being true is dependent upon being specifiable or knowable, but common sense points in another direction. For instance, if from a huge urn filled with marbles I shovel out about a thousand and then immediately shovel them back in, before even the Rain Man can count them, or anyway before anyone has in fact counted them, the parity (odd or even) of the number of marbles that have been out is completely unknowable (according to common sense). Yet, it is (also according to common sense) true to say that this number was either odd or even. The speckled hen case may be a case of vagueness again, and hence a case of indefiniteness, but in many cases of indeterminacy dichotomous claims can be true, though it be beyond us to ascertain which of the disjuncts is the true one.

### 4. GETTING ON THE SLIPPERY JOURNEY

Towards the end of her paper Professor Govier develops a fascinating series of steps going from mere difference to de-humanization. Here it is important to investigate the logical means that may enable us to criticize and block this "slippery journey" at various stages. I shall comment only on the early stages: from difference to exclusive disjunction. Notice first that if we restrict ourselves to two-valued logic and neither modality nor generalization is involved, difference (which would have to be expressed by  $\neg(A \text{ iff } B)$ , this being the denial of extensional equality) and exclusive disjunction ( $A \# B$ ) are logically equivalent. So the step from difference to dichotomy is actually valid for this case. In the other cases, where we have modality or generalization or both, one needs first to establish either the exclusiveness (leading to "early exclusion") and then the exhaustiveness, or one has to do that in the opposite order. The critic may, of course try to criticize the very first step, or even that there is a difference. Otherwise, if one moves illegitimately from early exclusion to exhaustiveness, this may be criticized as an "error of contrariety" (see paper, p. 4); if one moves illegitimately from (early) exhaustiveness to exclusiveness, this may be criticized as the error of mistaking an inclusive disjunction for an exclusive one (p. 2). So, in both cases, Professor Govier's paper provides a way for the critic to try and block the slippery slope at an early stage. This is good, for if one can block it at an early stage there is no need to get involved in discussions about what errors or prejudices come in at the later stages. Only when the dichotomy has been established, need the critic consider further options.

[link to paper](#)

### REFERENCES

- Barth, E.M. (1974). *The Logic of the Articles in Traditional Philosophy: A Contribution to the Study of Conceptual Structures*. Dordrecht and Boston, MA: Reidel.
- Blau, U. (1978). *Die dreiwertige Logik der Sprache; Ihre Syntax, Semantik und Anwendung in der Sprachanalyse*. Berlin and New York: Walter de Gruyter.