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Two is a Small Number: False Dichotomies Revisited

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ABSTRACT: Our acceptance of falsely dichotomous statements is often intellectually distorting. It restricts imagination, limits opportunities, and lends support to pseudo-logical arguments. In conflict situations, the presumption that there are only two sides is often a harmful distortion. Why do so many false dichotomies seem plausible? Are all dichotomies false? What are the alternatives, if any, to such fundamental dichotomies as ‘true/false’, ‘yes/no’, ‘proponent/opponent,’ and ‘accept/reject’?

KEYWORDS: dichotomy, distinction, disjunction, opposition, contrary, contradictory, adversary, conflict, polarization, demonization.

In a recent collection of essays, Hilary Putnam emphasizes that a distinction is not yet a dichotomy. Commenting on Kant’s analytic/synthetic distinction and the tendency of many empiricist philosophers to erect a dichotomy around it, Putnam says:

Once Kant’s category of the synthetic *a priori* ceases to be available, it becomes important <to acknowledge>—as many metaphysicians are still unwilling to consider—the possibility that the principles of mathematics are unlike both paradigm examples of analytic truths (like “all bachelors are unmarried”) and purely descriptive truths (like “robins have feathers”). This illustrates one difference between an ordinary distinction and a metaphysical dichotomy: ordinary distinctions have ranges of application, and we are not surprised if they do not always apply.¹

Putnam urges that to inflate a distinction into a dichotomy is a mistake. I find this comment helpful, and it inspired much of the thinking in this paper. I will argue here that we need to distinguish between difference, distinction, disjunction, dichotomy, and opposition. I will argue that there are some true dichotomies, expressible in terms of exclusive disjunction, but that false dichotomies are many. In fact, I will contend that there are at least six ways in which dichotomies can be false.

THE CONTEXT OF ARGUMENT

In argumentation, the fault referred to as ‘false dichotomy’ nearly always lies in a disjunctive premise. If an argument has a disjunctive premise that is false or

¹ Hilary Putnam, *The Collapse of the Fact/Value Dichotomy and Other Essays* (Cambridge MA: Harvard University Press, Chapter One, page 10).

unacceptable, then that argument fails to be cogent even though it may be deductively valid. The disjunction that is standard in classical logic is inclusive disjunction, symbolized by a ‘v’. An inclusive disjunction of the form ‘A v B’ is true when at least one of A and B is true; there is only one condition under which it is false, and that is when A and B are both false. Then something else, not A and not B either, turns out to be true.

Several well-known argument types involve a disjunctive premise.² These are:

- disjunctive syllogism (A v B, -B, therefore A).
- constructive dilemma (A v B, A > C; B > D; therefore C v D)
- destructive dilemma (A v B; A > C; B > D; -C v -D; therefore -A v -B).

Clearly all such arguments depend on the opening disjunctive premise. Even when that premise is flawed, they may have a deceptive persuasiveness if the disjunctive premise is superficially plausible. The clear logical structure and easy flow of such arguments may lead us to ignore flaws in the opening premise even when that premise is false. We might for that reason call them quasi-logical arguments. Perhaps it is for this reason that false dichotomy, though nearly always a premise flaw, is commonly called a fallacy. The form of the premise, and the context in which it appears, encourage us to accept a non-cogent argument as cogent.

A different kind of mistake in argument involving disjunction is the following:

- A v B; B; therefore -A

The above mistake involves treating the symbol ‘v’ as though it represents an exclusive disjunction, not an inclusive one. (So far as I know, this error has no particular name.) One source of this mistake lies in an uneasy match between natural language and formalism. Although ordinary uses of “or” are often exclusive, the symbol ‘v’ represents inclusive ‘or.’ If ‘or’ were understood *exclusively*, an inference similar to the one above would not amount to a mistake. Consider, for example:

He could either use the money to go to Africa or to attend a summer school in Oxford. He has registered for the summer school. So he’s not going to Africa.

If the opening disjunctive premise is false, the argument will still be flawed – but not inferentially.³

FALSE DICHOTOMY AND CLAIMS

Falsely dichotomous claims will be my main focus in this paper. As noted, many claims expressed as disjunctions are false or unacceptable; yet we may easily gloss over them and take them to be true. Why? We may begin by recalling that there are (at least) two sorts of opposite, *contraries* (for predicates, a thing can’t be neither x nor y, corresponding to the inclusive ‘or’; the disjunction is supposed to exhaust the

² For typographical convenience the symbol ‘>’ is used to represent the horseshoe connective.

³ What is needed for this argument to work is not a full-fledged exclusive disjunction <(A v B). -(A.B)>, but only the latter conjunct. In other words: ‘not both.’

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possibilities) and *contradictories* (a thing can't be both x and y and can't be neither x nor y, corresponding to the exclusive 'or'). We easily confuse contradictories and contraries. Consider the following pairs of terms: *safe* and *unsafe*, *wise* and *unwise*, *healthy* and *unhealthy*. We think in terms of opposites and judge hastily that a practice must be either safe or unsafe; a book interesting or uninteresting; a person healthy or unhealthy, wise or unwise. When we do this, we construct, around contrary terms, a disjunction that we take to be exhaustive, and we go wrong because it would only be exhaustive if the terms were contradictory. Our disjunctive statement would be true only if there were no intermediate cases – nothing between safe and unsafe, wise and unwise, healthy and unhealthy, interesting and uninteresting. Obviously, such intermediate cases do exist: mistaking contraries for contradictories, we exclude a middle that should not be excluded. A word to the partially wise should be sufficient here.

This mistake is encouraged by various linguistic constructions – especially, as illustrated here, the way in which the particular “un” functions to construct alternative descriptions. But we don't need the encouragement of linguistic particles to lapse into this sort of error: we can mistake contraries for contradictories even in the absence of that phenomenon. For example, if we suppose that people must be either beautiful or ugly, successes or failures, fat or thin, winners or losers, competitive or cooperative, we have again taken contraries for contradictories and constructed disjunctions that are false because they are not exhaustive. At this point it may seem less plausible to blame language for our mistakes. One might, rather, suspect some deep binary tendency in our ways of thinking. It's perfectly obvious that many people are neither beautiful nor ugly, neither successes nor failures, and so on. Even when an entity falls in the category to which the contrary terms properly apply, neither contrary may apply; if that is the case, the disjunction we have constructed around the contraries is false.

You may at this point be reminded of the old joke: there are two kinds of people, those who think in binary terms and those who don't. I suspect that if this fundamental bifurcation did exist, the second group mentioned would be rather small. Dare I say it? It even seems (somehow) *natural* for human creatures to think in binaries. And this despite the fact that two is a small number, a fact that we all know perfectly well.

You might suggest that in some deep way human beings are hard-wired for binary thinking. You might say, well, we human beings want clear simple choices and the basic structure of choice is 'one or the other; nothing else; not both.' You might suggest that this binary style of thinking is established for us by our evolutionary history, during most of which limiting ourselves to binary apparatus was an advantage. The legendary case of the saber-toothed tiger comes to mind. When the tiger attacks, the situation is 'fight or flight.' There are just *two* possibilities, you might say. Any primitive woman with a greater capacity for complexity, pausing perhaps to consider other choices like climbing a tree or singing sweetly to the tiger, would have been eaten dead or alive. She would not live to tell her tale and would leave no surviving descendants, so her capacity to construe her choices using a number larger than two would not persist in the human population. The idea of binary hard-wiring, grounded in evolutionary adaptation, is interesting, perhaps even plausible. But I cannot pause to explore it further here.

Suffice it to say that what we construct as binary alternatives often fail to be exhaustive, and we make mistakes, over-simplifying situations by failing to detect that fact. A common route to this mistake is that of using contrary terms as though they were

contradictory, constructing statements around that opposition and lapsing into false dichotomies as a result. For convenience, let us call this the error of contrariety. The error of contrariety is that of excluding a middle that really does exist – and reducing to a binary a situation in which there are more than two possibilities.

Though familiar and highly important, the error of contrariety is not the only way we can construct a false dichotomy. There is much more to be said.

FALSE DICHOTOMY AND CONCEPTUAL FRAMEWORKS

Many conceptual frameworks are binary, constructed on the basis of a fundamental division between one sort of thing and another. Such frameworks may be described in various ways – as dualistic, dichotomous, or bifurcated, for example. In a dichotomous framework where X and Y are fundamental organizing concepts, it is presumed that no X is Y and everything the framework handles is either X or Y. In other words, the disjunction between X and Y is interpreted as one that is exclusive in the logician’s sense. If we want to express this disjunction in terms of classical logic, we need more than the symbol ‘v’. If X and Y are genuine binaries, then an entity must be either X or Y and cannot be both.⁴ In other words,

- Exclusive disjunction: $(X \vee Y) \cdot \neg(X \cdot Y)$.

For convenience, I will use another symbol, ‘#’, to express exclusive disjunction. For present purposes, then,

- ‘**X#Y**’ means $(X \vee Y) \cdot \neg(X \cdot Y)$

As we have seen, it is easy to make mistakes with inclusive disjunctions. But these errors are only the beginning of the story, because true dichotomies require more than true inclusive disjunctions. What they require is true exclusive disjunctions.⁵

TRUE DICHOTOMIES AND FALSE DICHOTOMIES

A *true dichotomy* requires a *true exclusive disjunction*. In other words, X and Y are truly dichotomous if X#Y is true. This stipulation is, I think, close to the way in which we understand dichotomy. It does not restrict itself to the ‘v’ of classical logic. Consider, for example, standard thinking about male and female. Though such thinking has been challenged, and in my view challenged correctly,⁶ standard thinking would have it that there is a true dichotomy between male and female human beings. To assume that this

⁴ For convenience here, I have allowed myself to talk about X and Y as predicates and also as statements. Strictly speaking this is not correct. If X is a predicate, then ‘item a is X’ is a statement. When ‘X’ is used here in disjunctions or conjunctions, it is the statement use that is intended, and ‘X’ should be taken as shorthand for a statement of the type ‘item a is X’.

⁵ That is to be expected, given the greater content. But, as will be apparent, it is not only this further content $\neg(A \cdot B)$ that gives the further possibilities. The point is that non-exhaustiveness, or erroneously excluding the middle, is only one of at least six ways of constructing a false dichotomy.

⁶ Michael Gilbert has an eloquent and well-argued paper defending this conclusion. “Defeating Bi-genderism” was presented at the OSSA meetings in Hamilton, Ontario in 2005.

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dichotomy does exist is to assume that every human being is either male or female (exhaustiveness) and that no human being is both male and female (exclusivity). Males are not females, females are not males, and every one of the entities to which the male/female distinction applies must be one or the other. In other words, we typically assume that ‘male’ and ‘female’ are contradictory predicates.

Accepting that a true dichotomy is an exclusive disjunction, one to be represented here as $X \# Y$, it becomes immediately clear that there are at least three ways in which one can have a false dichotomy.

- (i) The disjunction between X and Y is not exhaustive (a middle exists)
- (ii) The disjunction between X and Y is not exclusive (things can be both X and Y)
- (iii) The disjunction X or Y is neither exclusive nor exhaustive (a middle exists and things can be both)

But interestingly, this is not all. There are other ways a dichotomy can be false. These include, at least, the following:

- (iv) The disjunction X or Y is ill-formed. Its constituent terms are too contestable to convey a clear meaning, and for this reason we cannot clearly assert that everything we are trying to classify fits one of X or Y and not both. The terms grounding the supposed dichotomy are too unclear to convey even contraries, much less contradictories. You might say that this flaw is of type (iii), where the disjunction is neither exclusive nor exhaustive. But that would not be quite right, due to the lack of clarity. Plausible examples here are nature/nurture; fact/value; inductive/deductive; competition/cooperation; modern/post-modern; genetic/environmental; and violence/non-violence. To make such allegations requires often requires some detailed argument. It could even be argued that the disjunction ‘male or female’ should be placed in this category.⁷ You might urge that point by arguing that the distinction between male and female can be drawn in different ways: sexual organs, other physical characteristics, hormonal patterns, sexual orientation, and so on.
- (v) There are items that one might assume to be classifiable using the XY framework but in fact, these items are off the spectrum to which X and Y apply. This problem is not that of the erroneously excluded middle: the recalcitrant cases in fact fail to fit the XY framework at all. The lack of fit may come from the fact that this framework has been devised with reference to characteristics the recalcitrant items do not have and were never supposed to have. Consider, here, the question of whether the Green Party is on the left or the right of the political spectrum.⁸ Since the ‘left/right’ distinction politically is organized around issues of social equality and liberty, we will seriously misunderstand the pro-environment Green Party if we seek to classify it in the traditional terms of *left* and *right*. Here, including the middle and thinking of a spectrum rather than

⁷ The term “poly-gendered” is sometimes used to allow for the multiple possibilities. I owe this point to Dayna Daniels.

⁸ Thanks to Colin Hirano for this example.

just two ends will not suffice for accurate understanding. The Green Party will not be right, or left, or center, given that its *raison d'être* stems from environmental problems rather than from issues of liberty and social justice. Another example might be asking whether music composed in a non-Western tradition is 'in tune' or 'out of tune' when you understand what it is to be in tune with reference to the traditions of Western music. Although music is of course the sort of thing that can be in tune or out of tune, for this kind of music, to ask whether it is in tune *in this sense* would be a misplaced question. To say 'it is in tune or it is not' will be incorrect, and to allow for its being 'somewhat in tune' would not avoid the problem, if, indeed, it makes sense at all.

- (vi) We have a situation of indeterminacy. It is, as yet, unspecified or unknowable whether X or Y is true, so we cannot, with any warrant, assert either X or Y. There is, then, no sense in insisting that at least one and at most one of X, Y is true. An old example of indeterminacy may be found in the case of the speckled hen.⁹ If I see a speckled hen, the image or 'sense datum' that I have presumably has some number of speckles, but I cannot say what that number is. Given that there is no specific knowable number here, there is a deep indeterminacy in the case. And given this indeterminacy, we would be lapsing into a false dichotomy were we to insist that the number of speckles characterizing my image of the speckled hen must be either odd or even. There is no true dichotomy here between 'the number is odd and the number is even.' These statements, in this context, do not amount to true contradictories because of the third possibility of indeterminacy. Another case of indeterminacy is that in which an issue is one of law but has never come before the courts. If it is brought before the courts, this issue will be resolved and there will be an answer. But prior to that time there is none.¹⁰

I argue, then, that there are at least six ways in which a dichotomy can be false.

THE PRACTICAL SIGNIFICANCE OF THESE CONSIDERATIONS

It is interesting and useful to distinguish the ways in which a dichotomy can be false. By doing this, we achieve more accuracy and clarity and a deeper appreciation of what has gone wrong. We will also be better able to see what is needed in order to correct the

⁹ The case was originally couched in terms of the *sense datum* theory of perception. If I see a speckled hen, what I am aware of (the sense datum) has some number of speckles. But if the hen has many speckles, I am aware of no particular number of speckles that it has. Thus the dichotomy between 'my image of the hen has an even number of speckles' and 'my image of the hen has an odd number of speckles' is a false dichotomy. Its falseness lies in this indeterminacy; the image has neither an odd, nor an even, number of speckles. The case was first introduced by Roderick Chisholm in "The Problem of the Speckled Hen," *Mind* 51 (1942), 368 – 373. A.J. Ayer in *The Foundations of Empirical Knowledge* (London: Macmillan 1963) argued that there was no number of speckles that the sense datum of the speckled hen had.

¹⁰ My awareness of this kind of example is due to Michael Kubara. Legal indeterminacy may be alleged on the straightforward grounds that the case would need to go to court and has not yet done so, which was what Kubara had in mind. Legal indeterminacy might be alleged on more radical grounds, as in *Critical Legal Studies*, in which scholars contend that law is indeterminate because the class of available legal materials rarely provides compelling logical grounds for one single response to a case.

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error. In cases where the problem is one of non-exhaustiveness, we have neglected the middle of a spectrum of cases and may have failed even to appreciate the very existence of the spectrum. We miss possibilities and see only extremes where there are none. In cases where there is a failure of exclusivity, we have again neglected subtleties and complexities, and we are setting up contrasts more stark and oppositions more exaggerated than are appropriate. When the problem is one of indeterminacy, we have reason to examine our expectations, which are not realistic in the case, and cannot be met; we are asking for truth and falsity in a situation where neither can be obtained. Where it is confusion or a matter of being off the spectrum, the exposure of the problem will, again, show a need for re-thinking.

DISTINCTION, DISJUNCTION, AND OPPOSITION

There is a series here, one that fascinates me. It goes like this:

Difference: Items we observe in the world differ and we want to mark that difference in language, so we need a distinction expressible in words.

Distinction: in the sense of early exclusion. We distinguish between things that are x and things that are y . (This marking of a distinction implies that no item is not both x and y at the same time and in the same respect). Distinction at this first stage may be said to commit us to what I will call *early exclusion*: $-(X.Y)$. We need here the qualification that we are considering the same thing in the same respect.¹¹ With that qualification, early exclusion is the relationship of not both. Interestingly, at this stage, *distinction* does not in any obvious sense establish disjunction: on the surface level at least, the language of ‘not both’ is not yet that of either inclusive or exclusive disjunction.¹² We can introduce the symbol ‘/’ to represent ‘not both’, so that $-(X.Y)$ is represented as X/Y .¹³

Distinction: in the sense of exclusive disjunction. We develop the distinction between X and Y into a full-fledged exclusive disjunction, adding an ‘or’ component to the ‘not both’. We progress from X/Y to $X\#Y$. We are now saying, we have noted this difference, introduced this distinction, and this distinction is a binary one. Everything that can be classified using the x,y distinction is either x or y and not both. We have now arrived at exclusive disjunction, proceeding to this point from early exclusion. (The ‘or’ that we add here is the inclusive ‘or’; by adding it we are stipulating exhaustiveness of the distinction; we are insisting that everything classified using the x,y distinction must fall into *at least one and at most one* of these categories. We have now used our distinction to construct a fundamental divide.) At this point we have marked a difference in the world, introducing the language of x and y to articulate a distinction marking that difference. We have moved from noting that, given the difference, the same thing cannot have the properties x

¹¹ Aristotle emphasizes this point when explaining the Principle of Non-Contradiction.

¹² The qualification “on the surface level at least” is introduced here to allow for the fact that all the connectives of classical logic are expressible in terms of the Sheffer stroke function, which means ‘not both.’

¹³ ‘Not both’ is exclusionary but it is not exclusive disjunction. That is ‘ X/Y ’ is not tantamount to $X\#Y$, as defined here.

and y in the same respect and moved further to assert exhaustiveness: everything to which the distinction applies must be either x or y. Now we have a full-fledged exclusive disjunction; the things we are classifying cannot be both x and y, and must be one or the other.

Dichotomous framework: At this stage we are using our distinction as a central element in a conceptual framework. The exclusive disjunction we have introduced on the basis of our distinction gains a sort of metaphysical or organizing status. Things in the framework are assumed to be either x or y and not both, and their status in this regard is taken to be an important fact about how they fit into the world and are related to each other. We come to think of x and y as full-fledged opposites. There is genuine contradictoriness. And there may be something more when we begin to see these opposites as representing conflicting possibilities.

Opposition: We proceed to a stage of opposition. This opposition may be purely logical and expressed in its entirety by the exclusive disjunction. It may be a 'mere' logical fact that the entities we are considering with regard to x and y have to be one or the other and cannot be both; we are taking a statement of the form $X \# Y$ to be true. X and Y are in this sense conflicting statements, strong opposites; we understand them as contradictory. We may come to think of these opposites as 'opposed,' and a new element of adversariality, may enter the picture at this point. People may argue for and against these 'conflicting' claims, thus coming to be *proponents* and *opponents* -- and in the process they begin to argue for and against each other. While theorists may wish to use terms 'proponent' and 'opponent' in a purely logical sense, the terms very easily and naturally acquire overtones of adversariality. In social contexts in particular, we may come to think that there are those who can be characterized as x and those who can be characterized as y -- and 'never the twain shall meet.' We may note that the x's and the y's are different, mark the distinction in language, express the point disjunctively, construct a dichotomy, and add an oppositional interpretation. The x's may be seen as opposed to the y's and *against them*. Thus tones of competition, contention, or hostility are added to the picture.¹⁴ Logical opposition has yielded *adversariality*.

Polarization: Are these different and distinguishable people separate? Separated? Opposite? Opposed? Conflicting? Contending? Perhaps We are all x, and the Others are y; it is Us and Them. Perhaps x is a positive quality and y not so; we may produce a construction of the Good Guys and the Bad Guys. In social contexts, opposition may proceed to enmity, intensifying a social conflict. The dichotomy, logically one of exclusive disjunction, is construed as marking a fundamental opposition between two sides, as in George W. Bush's notorious statement, "You are with us or you are with the terrorists." In many serious conflicts, to be an x is to be strongly opposed to y's, and conversely. In the former Yugoslavia in the 1990s, if you were a Serb, you were anti-Croat; if you were a Croat, you were anti-Serb. In Northern Ireland during the Troubles,

¹⁴ I have written about such matters elsewhere. See Trudy Govier, *The Philosophy of Argument* (Newport News, VA: Vale Press 1999), Chapter Four, "Feminists, Adversaries, and the Integrity of Argument," and Chapter Fourteen, "The Positive Power of Controversy."

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if you were a Catholic, you were anti-Protestant, and if you were a Protestant, you were anti-Catholic.

In the March, 2007 elections in Northern Ireland, results suggested that there is still deep polarization in the society. The two parties supported were the DUP (with a record of Protestantism and anti-Republicanism) and the SF (with a record of Catholicism and anti-Loyalism). The Reverend Ian Paisley, who built a long career on virulent anti-Catholic rhetoric, faced the challenge of working out a cooperative agreement with Sinn Fein, the political arm of the Irish Republic Army. Gerry Adams of the SF faced a similar challenge. There are warnings here. If you work your way into polarization, you may have trouble working your way out. But of course logic is only a part of such stories.

Demonization: Polarization intensifies to the point where the x's see the y's as admitting of nothing good: they are demonic or Satanic. We have progressed from 'opponent' to 'bad' to 'evil' at this point. The rhetoric of 'the Pope as the anti-Christ' provides an illustration here.¹⁵ The expression, 'the Great Satan,' used by Iranian leaders in referring to the United States, provides another.

De-humanization: At this point, there is so much animosity and hostility that even demonization seems charitable. One side begins to categorize the other as sub-human. 'The Others are not Us; they are not even human.; They are 'cockroaches,' 'vermin,' 'apes,' 'barbarians,' 'the scum of the earth' or 'creatures from the jungle.'

There is, then, a slippery journey that we may take, from difference to polarization, demonization, or de-humanization. We can take this journey -- but I don't recommend it. We should embark, but stop along the way -- probably somewhere in the territory of Opposition.

FIVE OBJECTIONS AND REPLIES

1. *Objection:* It is all too easy to allege a false dichotomy. This has become a truistic and trite move, one made by so many post-modernists and feminists that it has lost all interest.

Reply: The move may be common but that does not mean it is useless. There is the possibility that people often make this move precisely because mistakes are made with dichotomies. These mistakes are made in different ways, and in different contexts. Dichotomies discourage imagination and an awareness of complexity and encourage reductionism and simplistic thinking.

2. *Objection:* We are hard-wired to think in binary terms and we have to organize things this way, so there is no point in resisting.

Reply: we don't know that we are hard-wired to think in binary terms. Given that we are capable of understanding things like the spectrum, the middle, and complexity theory, any claim to the effect that our brains insist on no more than two is contestable.

¹⁵ In Belfast, the Reverend Ian Paisley has used this logic. I was stunned to learn, on a trip to Belfast in the fall of 2003, that people even wrote Ph.d. theses on the rhetoric of the Pope as the anti-Christ.

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Furthermore, there have been eminent thinkers – Kant, Hegel, Peirce, and Dewey come to mind – who have strongly preferred thinking in threes.¹⁶

3. *Objection:* We need dichotomous apparatus like ‘true/false’ and ‘yes/no’.

Reply: This point is correct and is acknowledged here. There is no denial here of the claim that contradictory statements exist and from them we can form true dichotomies. If X and Y are contradictory statements, then X#Y is true: one or the other of X and Y has to be true, and both cannot be true.

4. *Objection:* You are making things unbearably complex, insisting not only that there are so many false dichotomies, but that these appear in various contexts and are of six different kinds. This framework is too complex to be useful.

Reply: the world is not a simple place. Vastly complex systems and entities are understood in science and elsewhere, so there is ample evidence that the human mind can cope with complexity.

5. *Objection:* Your own analysis is dichotomous, so your account is self-refuting.

Reply: distinctions are not dichotomies; nor do they always support dichotomies. The objection would hold only if I were to argue that there are no true dichotomies while myself asserting a dichotomy to be true. While I maintain here that there are many false dichotomies, and at least six different ways they can be false, I do not maintain that there are no true dichotomies.

[link to commentary](#)

¹⁶ One could of course work out a logic for true and false *trichotomies*; obviously that task cannot be accomplished here.