

Information, Negation, and Paraconsistency

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Abstract

This paper begins by arguing that a truth conditional approach to the semantics for relevant logic is unnatural. Rather, we should adopt an *informational* semantics. On this view, the indices in the Routley-Meyer semantics are situations, which can be said either to contain or not contain, particular pieces of information. Valid inference, then, is seen as information preservation, not truth preservation. The distinction between truth and information gives us some freedom in our treatment of logic. For example, we may have a very classical theory of truth but a very non-classical theory of information. On the other hand, we may accept very non-classical theories of truth (such as dialetheism) together with an informational treatment of logic.

1 Introduction

The following inference is a well-known fallacy of relevance:

$$\frac{p}{\therefore q \vee \neg q}$$

Classical logic holds that this inference is valid because the conclusion is always true. Relevant logicians criticize the argument for having a conclusion that has nothing to do with any of its premises. This criticism is not that the conclusion fails to be true in some circumstances in which the premises are true, but rather its necessary truth is not sufficient for its following from an arbitrary proposition.

In the standard interpretation of the Routley-Meyer semantics, a connection is made between the notion of relevance and the standard interpretation of validity in terms of truth preservation. A one premise argument is valid if and only if in every index (world, set up, situation) in which the premise is true the conclusion is also true. But I suggest this use of the notion of truth is rather

forced in this context. What is wrong with this interpretation of the semantics is that it disregards the relevant criticism that the universal truth of a statement is not sufficient for the validity of any inference with it as a conclusion. Rather, this interpretation just claims that no statement is universally true.¹

For this reason, I think that it is more natural to interpret the semantics for relevant logic in informational terms. On this reading, the above argument is fallacious because the premise does not carry the information that the conclusion is true. I do not propose a new formal semantics, but rather a re-interpretation of the Routley-Meyer semantics (or at least one version of their semantics). I suggest that we understand the indices in the Routley-Meyer semantics as situations, in the sense of Jon Barwise and John Perry's situation semantics.² A situation, in the sense that I am using it here, is an abstract representation of a world. It may not be a representation of a complete world. Moreover, it may not accurately represent any possible world – it may include, for example, representations of impossibilities. We should interpret the satisfaction relation between a situation and a formula, as in $s \models A$ as saying that the situation carries the information that the formula is true. As we shall see, thinking in terms of information, rather than truth, changes the way in which we view the clauses that inductively define satisfaction relations. In short, we should adopt Jon Barwise's slogan "information conditions not truth conditions"³ when it comes to understanding the semantics of relevant logic.

I have set out the informational interpretation of this semantics elsewhere.⁴ The point of the present paper is to examine the freedom that the distinction between truth conditions and information conditions gives us. Although truth and information are closely connected, I claim that when we distinguish between truth conditions and information conditions (and associate logical validity with the former) we gain a lot of freedom to adopt a theory of truth that is relatively independent of our logical theory. This may sound incoherent, since we normally think of a theory of truth as a logical theory, but the separation will become clearer when we examine the alternatives. For example, we may, I will argue, adopt a very classical approach to truth (accept the principles of bivalence and consistency) at the same time as accepting a relevant logic. But we are not forced by our logic to accept a classical account of truth. For example, as we shall see, we may adopt a dialethic view of truth at the same time as accepting a "two-valued" semantics for information. I speculate that this combination could provide the basis of an interesting variant of the naïve theory of truth.

¹Well, this isn't strictly speaking true. Relevant logicians, especially Meyer and Restall, include the so-called Church constant T in their language. This constant is true at every index in every model.

²The suggestion of the link between relevant logic and situation semantics was first made by John Perry (in Barwise and Perry (1985)) (and in conversation with me in 1992) and Jon Barwise (1993). Their ideas have been developed in Greg Restall (1996), Beall and Restall (2006) and Mares (1996), (2004).

³Quoted in Seligman and Moss (1997) page 288.

⁴I still used the notion of truth conditions in Mares (2004), but laid the foundations for the informational interpretation there. I made my real informational turn in Mares (forthcoming a).

And there are other uses of the separation of truth and information: at the end of the paper I explore the use of a theory of information in developing a semantics for vague terms and predicates.

2 Information Versus Truth

The standard treatment of information takes information to be a syntactic entity of a certain kind. It takes a piece of information to be a well-formed and meaningful piece of *data* (Floridi (2004) 46). Luciano Floridi has modified this standard notion to hold that all information must also be true (misinformation, on this view, is not real information) (ibid.). There is, however, another sense of the word ‘information’ that we will use here. This is the sense of that word for which it is meaningful to talk about finding information in one’s surroundings. This is the notion of information that situation semantics attempts to analyze and which I adopt here. The two notions, however, are quite closely related. The notion of objective information is one of *potential data* – features of the environment that can be understood (in the right way) to give us information in Floridi’s subjective sense.

This notion of potential data is open to further interpretation. A piece of potential data is some fact that is *available* in a situation. But in what sense of availability? Logic, as a basis for norms about reasoning, uses idealizations. Intuitionists, for instance, talk of what can be proven in a way that far outstrips the ability of any person or even any physical machine. Similarly, we can talk about the availability of information in a situation in a very idealized way. We might think include as information facts that are physically inaccessible to us are nevertheless available in the salient sense, or we might not. How restrictive we should be in this regard is not an issue that I will decide now, in part because I have not yet decided on my own position.

An information condition for a statement is a condition under the environment enables us to extract the relevant data from it. This does not mean that any condition under which we can come truthfully to believe something (or even to know it) can count as an information condition. For example, the fact that the sun has risen every morning this week is an indication that it will always rise, but it is not the case that the particular facts that held in the last week together carry the information that the sun will always rise. Following Dummett, I hold that we need to distinguish between *canonical* and *non-canonical* means of gathering (subjective) information. Let us consider negation, which is the main focus of this paper.

There are various ways that we come to know the truth of a negated statement. We may be reliably told that it is true, we may infer its truth from the behaviour of others, and so on. But these means of gathering information can hardly be considered parts of the meaning of a negated statement. The canonical means of finding that a negated statement is true is to find some information in the environment that is *incompatible* with that statement. The information condition can be used to explain not only how one knows the truth

of the statement, but also to explain why it is true.⁵

Note that the notion of information is not supposed to replace the notion of truth in a semantics. Rather, information is parasitic on truth. A piece of information tells us that something is true. But despite the close link between truth and information, we can make a real distinction between truth conditions and information conditions.

As I shall argue later, adopting an informational semantics gives us a fair amount of freedom in our choice of a theory of truth. But for the moment, let us suppose that we are classical with regard to the truth condition for negation. Then we can say that a negated statement $\neg A$ is true at a possible world if and only if A fails to be true at that world, but a situation carries the information that $\neg A$ if and only if that situation carries some information that is incompatible with A . If we adopt this combination, then we can claim that bivalence is true, although the analogous principle for information fails, since there are certainly situations in which no information about the truth of a particular statement or its negation is available.

3 Negation and the Metaphysics of Information

Before we go on to discuss the import of the theory of information for paraconsistency, it is a good idea to pause for a moment to discuss the commitments of the theory. It might seem that the view of negation just outlined is committed to a *metaphysics of incompatibility*. That is to say, it seems that this theory holds that there is a mind-independent relation of incompatibility that stands between certain situations. This is a rather heavy metaphysical commitment.⁶

Whether we accept this commitment depends on our view of the nature of objective information. On Barwise and Perry's theory, all information is carried by situations relative to constraints. These constraints can come from a wide variety of sources. Among these constraints are, on my view, the background incompatibilities that determine the semantics of negation. Moreover, objective information, if it is to be used for the semantics of human languages, is sorted and understood in terms of human concepts and capacities. As we shall see in section 8 below, information about what colour things are is a good example of this. The way in which shades in a certain range of the spectrum are sorted into, say, red and orange depends on the way in which we make those distinctions. 'Red' and 'orange' are not natural kinds.

We have a choice about the degree of realism we want for our semantic theory. When we make negative judgments, we often rely on what we think are incompatible properties. The evidence of how we think and talk using negation underdetermines whether we should take the salient incompatibilities to be mind independent or ones that we have accepted as a society. Thus, we have no

⁵The incompatibility (or sometimes "compatibility") interpretation of negation was brought into relevant logic by J.M. Dunn (1993), but was originally formulated by Rob Goldblatt (1974) in the context of orthologic (a generalization of quantum logic).

⁶I am grateful to Mark Colivan for pressing me on this point.

empirical proof for a realist semantic theory, nor do we have enough evidence to support an anti-realist (in this case a social-relativist) one.

There are, however, some good (non-empirical) reasons to accept a more realist theory. First, if there are a class of set incompatibilities, then what counts as negative information remains stable through changes in the theories that are accepted by society. Second, as I said above, all information in actual situations must be actually true. If we have incorrect views about what is really incompatible, then a social-relativist semantics may allow an actual situation to contain false negative information.

Neither of these problems is terribly serious, though. The problem of temporal relativism is one with which many forms of anti-realism have to deal. It would not bother many anti-realists if what counts as negative information changes over time. The second problem – the problem of false information – is more difficult. But I don't think it is insurmountable. The anti-realist could moderate his or her view and claim that any class of incompatibilities is admissible as long as they do not entail that actual situations carry any false information. Perhaps a more interesting possibility is to wed an anti-realist theory of information with an anti-realist theory of truth. For example, consider a form of the pragmatist theory of truth, on which a statement is *true* if it is currently accepted, but *True* if society converges on it as something that is accepted for all time.⁷ Clearly there will be no conflict between changing negative information and negative truths in this first sense, and in the long run no conflict between information and Truth in the second sense. Thus, we can distinguish also between two senses in which information can be available in situations.

To sum up what I have said in this section, the information theoretic approach to semantics (and negation in particular) does not carry with it any serious commitments to a mind-independent relation of incompatibility between situations. Rather, the theory awaits further theorizing about how realist our semantics should be.

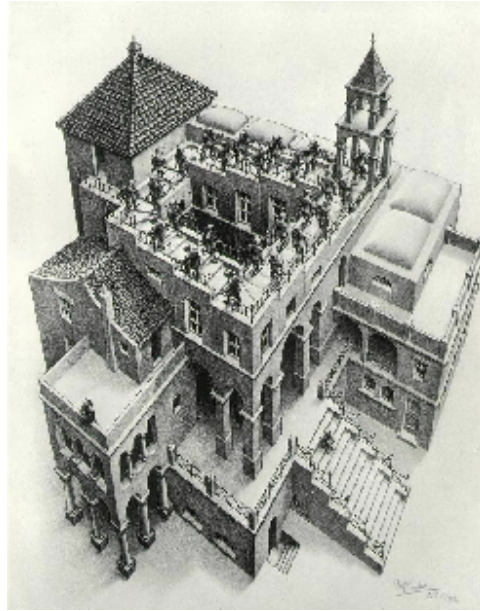
4 Information and Inconsistency

Relevant logic is a paraconsistent logic. In the Routley-Meyer semantics, there are models in which there are situations that satisfy contradictory formulas. How are we to interpret inconsistent situations in information theoretic terms?

Let's start with a depiction of an inconsistent situation. We will analyze this depicted situation and then try to generalize from that to a theory of inconsistent information. The depiction I have chosen is extremely well-known (perhaps hackneyed), but this should make things easier. This is M.C. Escher's

⁷This is a simplification of William James' view.

drawing, *Ascending and Descending*:



Here the contradiction is (supposedly) that half of the little grey men on the staircase on the roof are continually descending and the other half are continually ascending, yet they each pass the same person in the other group over and over again. In other words, you can keep going down to end up in the same place as where you started and likewise you can keep going up to end up in the same place as you started. The contradiction that we will examine here is between ascending continuously from point x to get to point y and descending continuously from point x to get to point y . These two pieces of information are incompatible with each other. But here we have them depicted in one etching. And this etching describes a set of situations in each of which contain both of these pieces of information. These situations, thus, contain incompatible information. From the standpoint of the incompatibility semantics, each of these situations are incompatible with themselves.

5 Truth Again

But things are not as straightforward as this. Suppose that we choose to a classical theory of truth. As we saw in section 2 above, objective information is always *true*. If we accept a classical theory of truth, from the very meaning of negation we cannot have a sentence and its negation both being true. If negation is failure then it would seem that we cannot have a situation that represents the world as having both a sentence and its negation both as true. Thus, it looks as though there is a real incoherence here.

We can eliminate this incoherence if we distinguish between two ways in which situations represent a world. On one hand, there is an external perspective on a situation – in which we judge the situation from informational relationships that we have in the actual world. On the other hand, there is an internal perspective – in which we describe the situation from the point of view of someone located within it. Our present situation (e.g. the situation that comprises all true the information in our world) supports incompatibility relationships between other situations. According to our situation, for example, being red all over is incompatible with being green all over at the same time. Similarly, it is incompatible to ascend and descend the same staircase at the same time.

But things seem different when viewed from the internal perspective. Consider again the little grey men in Escher’s picture. Here people are getting to the same place from the same place by ascending and descending the staircase at the same time. From the perspective of the little grey men, is there are true contradiction? Let’s say that they, like us (for the moment, at least) have a classical view of truth. No statement can be true at the same time as its negation. They can coherently hold a classical view of truth (if they realize what they are doing) only if they view the two salient pieces of information as compatible with one another. That they are compatible is shown to the little grey men because they both really obtain (from their perspective). To put this matter a little more technically, we need to distinguish between contexts of utterance and contexts of evaluation in order to understand inconsistent information. The context of utterance determines which incompatibilities determine the truth of negative statements.

Now, even from a classical point of view, we can interpret the little grey men as believing that there are true contradictions. Suppose that some little grey men speak in a story about them and claim that there is a true contradiction. Our circumstance is one of radical interpretation.⁸ We could hold them to believe what we do about negation and be mistaken about their situation or we could think that they are attributing a different meaning to ‘not’ (or some other connective).

Although I think that believing in both the classical theory of truth and a paraconsistent logic of information is coherent, I don’t think that the classical theory is our only option. In section 7 below, we will discuss the relationship between the informational semantics and a dialethic approach to truth.

6 The Dialethic Peril

Before we turn to the construction of a dialethic theory of information, let us consider an argument due to Priest (2000). This is a slippery-slope argument for dialetheism (or something close to dialetheism). Many philosophers and semanticists think that worlds that contain contradictions are needed to treat

⁸I am grateful to Greg Restall for forcefully arguing that we need not interpret the little grey men classically even if we adopt a classical theory of truth.

counterpossible conditionals (counterfactuals with “impossible” antecedents), to treat propositional attitudes that seem to have impossible content, and for a variety of other reasons. Most theorists make these inconsistent worlds impossible worlds in some sense. They are supposed to be more distant than worlds that obey all the supposed laws of metaphysics, including the law of consistency. But once we postulate the existence of contradictory worlds, it would seem that we reject the law of consistency. We admit that contradictions can be true in the sense that there are worlds in which they are true. Moreover, now that we have postulated the existence of contradictory worlds, a sceptical problem arises: what proof is there that we are not ourselves in a contradictory world? Neither our semantic nor our metaphysical theories rule out this possibility. We cannot say that our semantics shows that there can be no true contradictions, since we have worlds at which there are. Moreover, our metaphysics allows that inconsistent worlds may exist.

Let us call this argument the *dialethic peril*, since it shows that what seems to be a reasonable postulate of a semantical theory (i.e. the postulation of inconsistent worlds) might lead us to holding the extremely controversial view that there may be true contradictions.

The dialethic peril can be avoided by the distinction between information conditions and truth conditions. The question of why can't a contradiction be true can be answered very easily by the classical truth theorist: there can be no true contradictions because the meaning of negation prevents there from being any. There can be inconsistent situations (as viewed from our perspective), but this does not mean that there can be any true contradictions in any vertebrate sense. The slippery slope is stopped because the informational perspective does not accept the analogy between contradictory information in a situation and there being a true contradiction. The distinction between information conditions and truth conditions (and our double indexing) destroys the analogy.

Priest, however, would seem to have a response available to him.⁹ He can make the following claim: *If inconsistent situations represent inconsistent worlds, then there are inconsistent worlds for them to represent.* Thus, if there are inconsistent worlds, then the issue of whether we are in one such still arises problem and the move to situations does not help. Of course I deny that the fact that situations sometimes represent contradictions entails that there are inconsistent worlds. There are two senses in which impossible situations represent worlds. The first sense is that *all situations represent all worlds*, but not all situations represent all worlds accurately. Some situations represent one or more worlds accurately, and others do not. Clearly, this sense of representation does not require the existence of inconsistent worlds. The second sort of representation is close to the notion of representation employed by fictionalists in metaphysics. On this view, inconsistent situations represent *as if* there were inconsistent worlds, but there are no inconsistent worlds for them accurately to represent. On either of these senses of representation, therefore, there is no

⁹He made a similar reply in conversation. I'm not sure I have his reply exactly right, so I do not attribute it to him.

need for inconsistent worlds. Thus, the dialethic peril is blocked. If we do not postulate inconsistent worlds, then we do not get on Priest’s slippery slope.

7 Information and Dialetheism

My central theme in this paper is to argue that distinguishing between truth and information and associating logic with the latter liberates logic from various concerns that people have about truth. This division not only allows us to accept a classical theory of truth, but if we wish we can accept a non-classical theory of truth without thereby altering the informational analysis of logic.

Suppose for example, that we accept the dialetheist theory of truth according to which every formula is given zero or more values from the set $\{True, False\}$. We could say, as we did before, that formulas get these values in a world, but situations (which may or may not accurately characterize that world) contain or do not contain the information that a given formula is true or false. Here we can adopt the view (as dialetheists do) that a formula A is false if and only if $\neg A$ is true, so we can hold that a situation contains the information that A is false if and only if it contains the information that $\neg A$. We can, moreover, accept the compatibility semantics for negative information as before. There are good technical grounds for adopting the incompatibility semantics. It is easier to use than the dialethic semantics for relevant logic (see, e.g., Restall (1995)).

But we have to be careful about what we claim here. One of the central reasons for accepting the dialetheism to construct a naïve theory of truth. If we accept certain versions of the naïve theory of truth and particular theses concerning implication, then we can construct a trivial theory, that is, a theory in which every proposition is contained in every situation. Suppose that we have singular terms in our language for propositions. That is, in a given world, a particular term of this sort may or may not refer to some proposition. In this sort of theory, the Tarskian T-scheme is:

$$T(t) \leftrightarrow A$$

where t is a name that refers to the proposition that A . Also, suppose that we have some sort of diagonalization or self-referential device such that we can construct a singular term δ that refers to the Curry proposition expressed by a sentence of the form

$$T(\delta) \rightarrow p$$

(where p is some arbitrary formula).

Now suppose that we have a logic, which like the strong relevant logics R and E, contains the postulate of contraction. Contraction is the thesis $(A \rightarrow (A \rightarrow B)) \rightarrow (A \rightarrow B)$. Now we can construct the following argument:

1. $T(\delta) \leftrightarrow (T(\delta) \rightarrow p)$ T-scheme
2. $T(\delta) \rightarrow (T(\delta) \rightarrow p)$ 1, simplification
3. $T(\delta) \rightarrow p$ 2, contraction
4. $T(\delta)$ 1, 3, MP
5. p 3, 4, MP

So, if it would seem that if we accept a naïve theory of truth together with a logic that contains the contraction postulate we end up with a trivial semantics.

The usual approach among dialetheists is to reject the contraction postulate. Under some interpretations of implication, it makes perfect sense to reject contraction. Let's consider one such interpretation due to Priest (1992). On Priest's semantics, a frame consists in a set of indices. One or more of these indices are "normal indices". For each normal index, a , $a \models A \rightarrow B$ if and only if for every index in the frame b , if $b \models A$, then $b \models B$. For non-normal indices there are no satisfaction conditions for implicational formulas. Implicational formulas are satisfied (or not satisfied) by non-normal indices arbitrarily. Normal indices tell us the truth about entailments – if an implicational formula is true at a normal index, then every index is closed under that implication. Non-normal indices can be thought of as "logical fictions". They do not always tell us the truth about the laws of logic, just as science fictions do not always tell us the truth about the laws of physics.

Priest's semantics justifies the rejection of contraction. Adding contraction would be difficult and unnatural. But note that, on an informational understanding of the indices of his semantics, we would also be justified in rejecting the T-scheme. Suppose that n is a name for the proposition that A . A situation can contain the information that A without thereby containing the information that n is true. The latter information is information about a language (as well as being, perhaps, information about extra-linguistic reality). In order to contain the information that n is true, a situation need not only contain the information that A , but it also needs to contain information such as the information that n refers to the proposition that A . This information about our language is clearly distinct from the information that A . This means that we can have situations in which A but not in which $T(n)$. Given Priest's semantics for implication, it also means that the T-scheme is not true at any normal situation; in other words, the T-scheme is invalid.¹⁰

Having seen that there are informational semantics that justify the rejection of the T-scheme, it becomes plausible that there are non-trivial semantics that also justify the acceptance of contraction and allow for a fairly naïve theory of truth. If the T-scheme in part defines a naïve theory of truth, then it would seem that we might not be able to get a completely naïve theory of truth. But it would seem that we might be able to allow our language to have diagonalizing devices and accept the principle that if a contains the information that t refers to the proposition that A , then $a \models A$ if and only if $a \models T(t)$. This may not be a fully naïve theory of truth, but it may be naïve enough.

Of course, whether we can really have such a theory needs to be proven. We need a clear specification of a formal semantics and a proof that it is not trivial.

¹⁰Of course this is not an argument against Priest since he does not subscribe to an informational reading of his semantics. My point is only that on the informational approach to semantics it is not clear that we have to accept the T-scheme even if we have a naïve theory of truth.

8 Information Fade

Fuzzy logic provides a fairly straight-forward treatment of sorites and other paradoxes, but there has been a lot of resistance to the acceptance of infinitely many truth values. For anyone who feels the pull of fuzzy logic, but is reluctant to accept its treatment of truth, an informational approach may provide just what he or she needs.

As I said in section 2 above, the notion of objective information is that of potential data contained in an environment. On one interpretation, what information is in an environment is relative to human capacities to extract it. Consider, for example, the following scene:



This is a photo of the South Island of New Zealand from a ferry in Cook Strait (the body of water between the two main islands of that country). The colours in the clouds are a variety of yellows, oranges, browns, and greys. Some are easily identified. Some are not, because they are borderline cases.

There is, in situations like this, *information fade*. Some information, such as the fact that there is water in the foreground, is clearly present, and other information, like the number of people living on the South Island, is clearly absent. But the information about the borderline colours is there to some degree. We could, I think, quantify the degree to which information is present in a situation, using values in the real interval $[0, 1]$. Formally, we can think of an abstract situation as (at least in part) a fuzzy set of states of affairs, some states of affairs a situation will contain completely, others it will exclude completely, and still others it will contain to some degree.

Then, we can use Priest's formal semantics for fuzzy relevant logic (Priest (2008) ch 11) to give information conditions for complex formula. To see how this works, we first define an operation, \ominus . Where n and m are any two real numbers,

$$n \ominus m = \begin{cases} 1, & \text{if } n \leq m \\ 1 - (n - m), & \text{if } n > m \end{cases}$$

Now we can give the “information values” corresponding to the various connectives:

$$\begin{aligned} v_s(\neg A) &= 1 - \max\{v_x(A) : Csx\} \\ v_s(A \wedge B) &= \min\{v_s(A), v_s(B)\} \\ v_s(A \vee B) &= \max\{v_s(A), v_s(B)\} \\ v_s(A \rightarrow B) &= glb\{v_x(A) \ominus v_y(B) : Rsxy\} \end{aligned}$$

Where R is the Routely-Meyer ternary accessibility relation on situations.

Now, I am not claiming that we *attribute* specific degrees of presence to states of affairs in situations. Rather, I am claiming that we can in our theorizing about situations attribute these degrees of presence relative to how well people can detect those states of affairs when in those situations. The people in those situations need not themselves be able to detect exactly the degree to which a state of affairs is present.

We can this notion of information fade to construct a theory of vagueness. First order vagueness is explained by information fade, that is, by our inability to tell perfectly whether a state of affairs is present. We find a similar view expressed by Stewart Shapiro in the following passage:

It would defeat much of the purpose of color-talk if we had to haul out a digital meter every time we need to establish or communicate the colour of something. And, of course, our powers of observation are limited. Our eyes, ears, noses, taste buds, and hands can discriminate only so much. Indeed, even the discriminatory abilities of digital meters are limited. ... this suggests a principle of tolerance for certain predicates that makes them prone to sorites arguments. (Shapiro (2006) 194)

Shapiro and I agree that vagueness (at least in some cases) results from the imperfections of human sensory organs as detection devices. I think that the natural way to understand this is in informational terms.

Moreover, the inability of people in situations often to tell exactly how well they are detecting states of affairs indicates a way of treating higher order vagueness. Just as the our abilities for finding out about our environments in part determines the information in situations, our abilities to become aware of these first order abilities should in part determine which second order information is available in the situation.¹¹ Thus, although it might be that the state of affairs that a particular car is red is wholly in a situation (i.e. that state of affairs has the information value 1), it might be that the state of affairs that the car is definitely red gets a value less than 1 because our ability to tell that our detection of this state of affairs is less than perfect, especially if the colour of the car is, say, just a shade into the colour region in which we always discriminate as red.

¹¹using ‘second order’ in the sense in which it is used in the vagueness literature, i.e. as in ‘second order vagueness’.

9 Concluding Remarks

This paper has argued for the separation of the notions of truth and information and for the treatment of logic in terms of information. Validity of arguments should be thought of as information preservation rather than truth preservation. This informational turn makes sense of the semantics for relevant logic¹² The informational interpretation is compatible with a classical theory of truth, and so it avoids the classicist's complaint that our "truth conditions" for the connectives are unintuitive. The informational interpretation also can help other non-classical logicians. Fuzzy logicians have long been the object of similar attacks from classicists. They too can adopt an informational interpretation of their logic and a classical theory of truth.

But the informational interpretation is not committed to being classical about truth. Just as it liberates logic from the tyranny of truth, it may liberate theories of truth from the annoying needs of logic. I have speculated here that an intuitive and fairly naïve theory of truth *may* be possible using the informational approach to logic. But whether this really works awaits a non-triviality proof.

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¹²I have only looked at the treatment of negation here. For the other connectives, see Mares (2004), (forthcoming a), and (forthcoming b).

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