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Two 'logic' problems for religious expressivists

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Abstract

Religious expressivism is the view that religious sentences, like 'God is all-loving' and 'God offers us the gift of salvation', are devoid of cognitive meaning. Such sentences are not truth-evaluable: they cannot be judged as true or false. In *Religious Language*, Michael Scott asked what explains the seeming logical behaviour of religious sentences if they are not truth-evaluable, as religious expressivists claim. In particular, religious expressivists need to explain (i) how a given religious sentence and its negation seem inconsistent and (ii) how religious sentences could figure in logically valid arguments. In this article, I develop a version of Weak Kleene semantics that could address these two 'logic' challenges.

Keywords: religious language; negation problem; Frege-Geach problem; religious expressivism; Weak Kleene

Introduction

Religious sentences are any assertive or descriptive sentences with a religious subject matter.[1] They concern supernatural agents like God, other deities, angels, etc., the actions of such agents like performing miracles, creating the universe, offering salvation, etc., and supernatural properties and states of affairs like holiness, perfection, etc. (Scott (2010), 505). Characterized this way, sentences about the holiness of Gautama Buddha, the miracles of Jesus, the pilgrimage of the prophet Muhammad, or the omni-properties of God can all be classified as religious sentences. However, one philosophical worry surrounding such sentences centres on their cognitive meaning, that is, whether these religious sentences are truth-evaluable.

According to religious expressivists of various kinds, religious sentences cannot be judged as true or false since they are not in the truth-stating business in the first place. For example, religious sentences like 'God is all-loving' and 'God offers us the gift of salvation' do not describe any fact. They only express (i) a person's 'awe of natural process which they cannot sufficiently understand' (Ayer (1952), 116), (ii) their 'intention to carry out a certain behaviour policy' (Braithwaite (1955), 32), or (iii) their 'confidence to live and think morally' (Hare (1992), 38). Collectively, religious expressivists claim that religious sentences are *expressive* and not descriptive, *attitudinal* and not factual, and *non-cognitive* and not cognitive.

Michael Scott (2013) has raised two 'logic' challenges with this view. If religious expressivists are correct that religious sentences are not truth-evaluable, then they must account for the seeming logical behaviour of these sentences. In particular, they must

explain (i) how a given religious sentence and its negation could be logically inconsistent and (ii) how religious sentences could constitute logically valid arguments.

In this article, I argue that a natural way to address these challenges is to adopt the logical machinery of Weak Kleene semantics. After rehearsing Scott's two logic challenges, I develop a version of this semantic framework. I show that religious sentences are not only non-truth-evaluable in this framework; they are also logically infectious. Along the way, I consider some possible worries that may be raised against the proposed framework.

Scott's two challenges

Let us now rehearse Scott's two challenges for religious expressivism in turn. His first challenge for religious expressivists is to explain how a non-truth-evaluable religious sentence and its negation could be logically inconsistent. To illustrate, consider a theist who believes that:

(1) God is all-loving.

If religious expressivists are correct, then (1) is just an expression of some non-cognitive attitude; thus, it cannot be judged as true or false. This is well and good. However, consider its negation:

(2) God is not all-loving.

(1) and (2) seem inconsistent. To assert both implies asserting a contradiction. The question now for religious expressivists is how to explain this inconsistency, given that religious sentences are not truth-evaluable.

Religious expressivists may answer that (1) and (2) are inconsistent because they express incompatible attitudes, which, in turn, implies that (1) contradicts (2). However, this answer is unavailable for religious expressivists since non-cognitive attitudes do not contradict one another. To illustrate, compare belief states and desire states. If someone believes p and also believes $\sim p$, we know that one of these beliefs must be false because both cannot be true. In contrast, if someone desires q and also desires $\sim q$, these desires may conflict, they may lack clear direction on how to live, but they do not contradict each other (in the logical sense). The non-cognitive attitudes expressed by (1) and (2) are like desire states. They may conflict but are not contradictory. Thus, to explain how a non-truth-evaluable religious sentence and its negation can be inconsistent, religious expressivists 'must therefore find a different account of negation in religious language' (Scott (2013), 81–82).

Let us now turn to Scott's second challenge of explaining how non-truth-evaluable religious sentences could figure in logically valid arguments. To illustrate, consider the following argument:

(3) God is all-loving.
(4) If God is all-loving, God offers us the gift of salvation.
(5) Therefore, God offers us the gift of salvation.

The argument is valid since all its premises cannot be true while its conclusion is false. However, religious expressivists are confronted with a dilemma. On the one hand, if they maintain that (3) and (5) are devoid of cognitive meaning, they still have to account for the meaning of (4). Being a conditional sentence, (4) could be asserted without

asserting its constituent sentences. If this is so, then (3) and (5) may have a different meaning when they are embedded in (4) as opposed to when they are unembedded. This means that argument (3)–(5) is invalid since it commits the fallacy of equivocation.

On the other hand, if religious expressivists want to maintain the argument's validity, they have to say that (3) and (5) preserve their non-truth-evaluability while being embedded in (4). If this is so, then since (4) does not necessarily express the attitudes expressed by its constituent sentences, it seems to follow that the non-cognitive attitudes do not entirely determine the meanings of (3) and (5). This makes religious expressivism false (Scott (2013), 83). Thus, religious expressivists have a problem in either case.[2]

Religious expressivists may reply that the validity of argument (3)–(5) could be defined in terms of the non-cognitive attitudes of approval and disapproval. Argument (3)–(5) is valid since approving (3) and (4) while disapproving (5) is attitudinally incoherent. There will be some rational pressure to either approve the argument's conclusion or disapprove of at least one of its premises (Schroeder (2008), 709–710). This, then, sidesteps Scott's second challenge.

This response might be unavailable for religious expressivists since *coherence* requires a minimal notion of truth-evaluability. To say that two attitudes cohere with one another implies that they must at least be consistent; they can both be true. However, this goes against the basic tenet of religious expressivism. Moreover, even if coherence does not imply truth-evaluability, there is still the issue of how the meanings of religious sentences are determined by the attitudes they express. As Scott's second challenge has shown, there seems to be no common meaning between asserted and unasserted occurrences of religious sentences, which is a problem for religious expressivists (Scott (2013), 83).

Scott's two challenges amount to the same thing. If religious expressivists are right that religious sentences are not truth-evaluable, then they have to explain the logical behaviour of such sentences. In the case of the first challenge, this implies explaining the inconsistency of a given religious sentence and its negation. In the case of the second challenge, this means explaining how religious sentences could figure in valid arguments. In the following two sections, I argue that religious expressivists could adopt a semantic framework that models non-truth-evaluable expressions to address these challenges. And this framework, I suggest, is the semantic framework of Weak Kleene (WK3).[3]

A Weak Kleene semantics

The language of WK3 consists of a countable set of atomic sentences: *p, q, r. . .* and a set of familiar logical connectives: '∼' (negation), 'v' (disjunction), '&' (conjunction), '⊃' (material conditional), and '≡' (material biconditional).[4] The formation rules for well-formed formulas (wffs) are standard. Regarding the metalinguistic variables, *A, B, C,. . .* refer to wffs, while *X, Y, Z* refer to sets of wffs.

WK3 is a three-valued semantics, where a valuation function *v* maps each atomic sentence into a set of valuations, *V*: {1, *e*, 0 }. '1' and '0' represent the classical true and false values, respectively, while '*e*' is the non-classical value for the *expressive,* non-truth-evaluable value. Given this, compounds will have the truth tables given in Table 1.

The logical connectives in Table 1 behave in a perfectly classical (two-valued) way if their constituents are 1 or 0. They only behave non-classically when at least one of their constituents has value *e*. This semantic behaviour is expected since WK3 is a *sub*-classical logic. This leads us to the *infectious* feature of WK3, and let us define it as follows:

> **Definition 1 (Infectiousness)** For any sentence *A*, if *v*(*A*) = *e*, then for any compound sentence, *C*, that has *A* as a constituent, v(C) = *e*.

Table 1. WK3 truth tables

A	B	~A	A ∨ B	A & B	A ⊃ B	A ≡ B
1	1	0	1	1	1	1
1	e	0	e	e	e	e
1	0	0	1	0	0	0
e	1	E	e	e	e	e
e	e	E	e	e	e	e
e	0	E	e	e	e	e
0	1	1	1	0	1	0
0	e	1	e	e	e	e
0	0	1	0	0	1	1

Think of the infectious nature of *expressive* sentences as a kind of sentential virus. Once a sentence gets infected by it, it contaminates other sentences within its immediate vicinity. In the formal picture, the value of a compound sentence is *e* if at least one of its constituents has value *e*.[5]

Let us now turn to the notion of validity in WK3. WK3-validity, '⊨$_{wk3}$', is defined in terms of the familiar notion of truth-in-a-model or truth-in-a-given-valuation, with value '1' as the only designated value.[6] A sentence A is true iff $v(A) = 1$. A set of sentences X is true iff $v(B) = 1$ for all $B \in X$. Given this, ⊨$_{wk3}$ is defined as:

Definition 2 (WK3-validity) $X \vDash_{wk3} A$ iff there is no WK3-valuation where $v(B) = 1$ for all $B \in X$, but $v(A) \neq 1$.

That is, the argument from a set of premises X to a single conclusion A is WK3-valid just in case there is no valuation where all its premises are true, but its conclusion is either false or has value *e*.

Some philosophical remarks

With the machinery of WK3 at hand, we could now address Scott's two challenges. Before doing this, let me first make a few philosophical remarks. First, notice that the basic tenet of religious expressivists fits in nicely with the WK3 semantics. Arguably, religious expressivists divide atomic sentences into two general types: those that are truth-evaluable and those that are not. Value *e* plays an important role here since it allows us to semantically distinguish between sentences of the former sort, namely, sentences that have value 1 or 0, from those of the latter sort, namely, sentences that always have value *e*. If religious expressivists are right, then religious sentences will be of this latter sort.

Second, given Definition 1, a sentence that has value *e* is infectious and remains so regardless of whether it is in an asserted or unasserted context. This follows from the main features of the WK3 semantics. To illustrate, if $v(A) = e$, then (i) in an asserted context like '~A', the semantics yields $v(\sim A) = e$, and (ii) in an unasserted context like '$A \lor B$', the semantics still yields $v(A \lor B) = e$, regardless of what the value of B may be. This, then, answers Scott's worry that religious sentences might have different 'meanings' in asserted and unasserted contexts since religious sentences are always evaluated as having value *e*, regardless of their context. This means that embedded and unembedded religious sentences have value *e*.

Third, given that religious sentences are infections, compounds that have them as constituents will have value *e*. This means that compound sentences about religious and non-religious matters will be, according to religious expressivists, devoid of cognitive significance. For instance, despite having a true disjunct, a disjunction like 'God is all-loving or 2 + 2 = 4' will register value *e*. On the other hand, despite having a false conjunct, a conjunction like 'God is all-loving and 2 + 2 = 5' will likewise register value *e*. This only means that non-cognitive content always trumps cognitive content, regardless of whether the cognitive content is true.[7]

WK3-validity and Scott's second challenge

Let us now address Scott's second challenge of showing how non-truth-evaluable religious sentences could figure in logically valid arguments. Since the WK3 framework provides a semantic interpretation for *expressive* sentences, it also provides the best model for the logical behaviour of religious sentences. In particular, their behaviour in (WK3-)valid arguments.

Given Definition 2, it is relatively easy to show that the argument forms in Table 2 are WK3-valid.

The argument forms in Table 2 are WK3-valid since there is no valuation where all their premises have value 1, while their conclusion has value 0 or value *e*. This means that though religious sentences may be devoid of cognitive meaning, they could still be constituents of logically valid arguments. For instance, argument (3)–(5) above is valid since it is an instance of *modus ponens*. This, then, answers Scott's second challenge.

However, while all of the WK3-valid arguments in Table 2 are classically valid, there are classically valid arguments that are not WK3-valid. A notable example is *addition*, i.e., $A \nvDash_{wk3} A \lor B$.[8] A counterexample for *addition* is a valuation where $v(A) = 1$ and $v(B) = e$ (Beall (2012)).[9]

The Nuances of '*e*' and Scott's first challenge

Let us now turn to Scott's first challenge of explaining how a religious sentence and its negation could be inconsistent. This challenge seems harder to answer than the first since in WK3, if A is a religious sentence, then A and $\sim A$ have the same *e* value. It seems, then, that WK3 could not account for the inconsistency of a religious sentence and its negation.

This complication could be addressed by a different account of inconsistency. For instance, Definition 2 implies that WK3 is an *explosive* logic. It permits any arbitrary conclusion B to follow from a contradiction: that is, $A \& \sim A \vDash_{wk3} B$. This means that if A is a religious sentence, then A and $\sim A$ entail any sentence B. Thus, the explosive nature of WK3 already evidences the inconsistency of a religious sentence and its negation.[10]

Table 2. WK3-valid arguments

$A, A \supset B \vDash_{wk3} B$	*modus ponens*
$\sim B, A \supset B \vDash_{wk3} \sim A$	*modus tollens*
$\sim A, A \lor B \vDash_{wk3} B$	*disjunctive syllogism*
$A, B \vDash_{wk3} A \& B$	*adjunction*
$A \& B \vDash_{wk3} A$	*simplification*

However, Scott might insist that despite WK3's explosiveness, religious expressivists who subscribe to it might still fail to account for the inconsistency of a religious sentence and its negation. For religious expressivists, religious sentences express attitudes, and, as was discussed above, while attitudes may conflict, they do not seem to contradict each other in the logical sense. If this is right, then Scott's first challenge remains unresolved.

To answer this, we may extend WK3 to account for the nuanced character of *e*. After all, *e* is more expressive than was first approximated. As a true-blooded religious expressivist might argue, there are different non-cognitive attitudes that a person could have towards a religious sentence. These attitudes might range from pure disgust to pure ecstasy. Taken this way, the resulting WK semantics would perhaps be a fuzzy-like one. For simplicity however, let us borrow the 'yey!' and 'boo!' language of moral expressivists and turn them into a more nuanced appreciation of value *e*.[11] This nuanced appreciation implies the dual feature of *e* that includes a positive feature, '*e+*' and a negative feature, '*e−*'. Let us stipulate that *e+* and *e−* are mutually exclusive values. *e+* represents a strong *positive* emotional response towards a given religious sentence, while *e−* represents a strong *negative* response to it. As such, WK3 becomes a four-valued semantics, WK4, since the more nuanced *e+* and *e−* values replace the *e* value in the set of valuations. This means that the logical connectives in WK4 behave as in Table 3.

Notice that in Table 3, *e+* trumps *e−* in the case of disjunctions, while *e−* trumps *e+* in the case of conjunctions. For example, if $v(A) = e+$ and $v(B) = e−$, then $v(A \lor B) = e+$, while $v(A \& B) = e−$. This semantic behaviour is expected if we suppose that the attitude that *e +* represents is *stronger* than what *e−* represents. This follows the common thought that positive emotions trump negative ones every time.

Table 3. WK4 truth tables

A	B	~A	A ⅋ B	A & B	A ⊃ B	A ≡ B
I	I	0	I	I	I	I
I	e+	0	e+	e+	e+	e+
I	e−	0	e−	e−	e−	e−
I	0	0	I	0	0	0
e+	I	e−	e+	e+	e+	e+
e+	e+	e−	e+	e+	e+	e+
e+	e−	e−	e+	e−	e+	e−
e+	0	e−	e+	e+	e+	e+
e−	I	e+	e−	e−	e−	e−
e−	e+	e+	e+	e−	e+	e−
e−	e−	e+	e−	e−	e−	e+
e−	0	e+	e−	e−	e−	e−
0	I	I	I	0	I	0
0	e+	I	e+	e+	e+	e+
0	e−	I	e−	e−	e−	e−
0	0	I	0	0	I	I

The nuanced values of $e+$ and $e-$ provide a way to answer Scott's first challenge since the negation of a religious sentence becomes semantically tractable. If $v(A) = e+$, then $v(\sim A) = e-$, and vice versa. Thus, via this addendum, religious expressivists could say that a religious sentence and its negation are inconsistent because, as the semantics shows, they express mutually exclusive attitudes toward a given religious sentence. This mutual exclusivity is not defined in terms of truth and falsity. It is defined in terms of the duality of two non-cognitive attitudinal responses. This, then, answers Scott's first challenge.

One might worry that explaining the inconsistency of religious sentences in terms of the duality of $e+$ and $e-$ seems to invite the above-mentioned objection raised against religious expressivists who explain the inconsistency in terms of holding incompatible non-cognitive attitudes. Moreover, even if we grant that this duality does not assume truth-evaluability, their mutual exclusivity seems to be determined not by logic but by pragmatic considerations. They behave more like Moorean inconsistencies of the form 'p, but I don't believe p' rather than logical inconsistencies epitomized by the form '$A \& \sim A$' (Schroeder (2008), 710).[12]

In response, we must reiterate that in the proposed formal picture, $e+$ and $e-$ are not non-cognitive attitudes *per se*. They are semantic values that *represent* such attitudes. As semantic values, they only serve as nuanced valuations of religious sentences. This means that religious sentences may have an $e+$ or an $e-$ value for a given valuation. Thus, these values cannot be likened to pragmatic or logical inconsistencies.

But how do these nuanced e values explain the inconsistency? In the proposed WK framework, inconsistent religious sentences of the form '$A \& \sim A$' do not yield the value 0. However, they will always register value $e-$ given the WK4 truth tables in Table 3. To illustrate, if $v(A) = e+$, then $v(A \& \sim A) = e-$; on the other hand, if $v(A) = e-$, then $v(A \& \sim A) = e-$. This explanation preserves the religious expressivist's view that attitudes conflict and explains why these attitudes can be logically inconsistent given the semantics. For religious expressivists who think that religious sentences are not truth-evaluable, this accounts for the inconsistency of a religious sentence and its negation.[13]

Finally, note that adding $e+$ and $e-$ to the set of valuations does not rule *out* some of the established WK3-valid arguments, nor does it rule *in* invalid ones. After all, WK3 and WK4 are logically equivalent. All valid and invalid arguments in the former are also valid and invalid arguments in the latter. This is not surprising since WK4-validity is just WK3-validity (see Definition 2), with the caveat that value e includes two more nuanced values: $e+$ and $e-$.

Conclusion

According to Scott, 'religious expressivism faces several problems for which no convincing answers seem available' (Scott (2013), 85). The most serious of these problems – the two logic problems discussed – arises from denying that religious sentences are truth-evaluable. However, with the proposed Weak Kleene framework, thoroughgoing religious expressivists may have the semantic resources to explain the logical behaviour of these non-truth-evaluable religious sentences. In particular, how these sentences could be logically inconsistent and how they could figure in logically valid arguments.

Notes

1. As an anonymous referee has pointed out, religious sentences can also be non-assertoric: they can be questions, commands, etc. For our purposes, however, we will only focus on the assertoric use of religious sentences. Note that the broader objective of religious expressivists is to provide an interpretation of religious language free of metaphysical commitments to religious facts and properties.

2. This problem is akin to the so-called Frege-Geach problem in moral philosophy attributed to P. T. Geach (1965) and was independently raised by John Searle (1962). For a discussion of the history of the Frege-Geach problem, see Schroeder (2008).

3. The original semantics for WK3 is, of course, due to its namesake, Stephen C. Kleene (1952). However, a prior 'meaningless' interpretation of the non-classical value was presented by Dmitri Bochvar (1981). Bochvar's original target for such an interpretation is liar-type sentences, like 'This very sentence is false' and the resulting logical theory that governs them. As we shall see, this interpretation naturally extends to other sentences that lack cognitive significance, e.g., religious sentences according to religious expressivists. The version of WK3 that we will develop here follows the 'funny' construction due to Beall (2012). For an alternative construction, see Joaquin (2020). Note that 'e' will be used to represent the third value instead of '0.5'.

4. To be precise, $\sim$, v, and & are primitive logical connectives, while $\supset$ and $\equiv$ are defined ones. We define '$A \supset B$' as $\sim A$ v B and '$A \equiv B$' as $(A \supset B)$ & $(B \supset A)$.

5. One may think of the 'infectiousness' in terms of Beall's idea of 'funniness'. Accordingly, combining factual (non-funny) sentences with funny ones results in funniness (Beall (2012)). Another alternative interpretation is the 'off-topic' interpretation, where an infected sentence is an off-topic sentence (Beall (2016); Joaquin (2022)). For a criticism of this latter interpretation, see Francez (2019). There is another alternative interpretation of WK3 as a four-valued paraconsistent Weak Kleene (PWK) semantics explored by Omori and Szmuc (2017) and Ciuni and Carrara (2019).

6. Designated values are the values that are preserved in valid arguments (Priest (2008), 121).

7. An anonymous referee worries about this infectious feature of religious sentences. One way to motivate it is to see how religious pronouncements often *infect* non-religious discourse.

8. The failure of *addition* in WK3 implies that the so-called paradoxes of material implication are also WK3-invalid. That is, $\sim A \not\models_{wk3} A \supset B$ and $B \not\models_{wk3} A \supset B$. The counterexample for the former is a valuation where $v(A) = 0$ but $v(B) = e$, while for the latter is a valuation where $v(A) = e$ but $v(B) = 1$.

9. It is curious to note, however, that in the alternative PWK semantics, *modus ponens*, *disjunctive syllogism*, and *addition* are invalid while *simplification* is valid (Omori and Szmuc (2017)). PWK-validity is defined in terms of two designated values: 1 and e.

10. My thanks to an anonymous referee for raising this point.

11. For instance, we may borrow the framework used by Blackburn (1993), ch. 10.

12. A similar complaint was raised against Blackburn's expressivist logic for moral sentences: see Van Roojen (1996), 331–332. My thanks to an anonymous referee for raising this concern.

13. I acknowledge an anonymous referee's point that the explosive nature of WK3 already addresses Scott's second challenge, and extending WK3 to WK4 might be an unnecessary complication. However, as the preceding discussion has shown, Scott could still raise an issue regarding the contradictory nature of religious sentences. That is why I think that such an extension is necessary.

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