The Good Samaritan and the Hygienic Cook

A cautionary tale about linguistic data

Chris Fox

CSEE
University of Essex
United Kingdom
foxcj@essex.ac.uk

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Research Context

- Interested in finding alternatives to Possible Worlds interpretations of semantic phenomena.
- Previous work on fine-grained intentionality without Possible Worlds.
- Current interest in deontic reasoning without Possible Worlds.
- This talk: a problem with the data — what aspects of the behaviour of deontic examples is genuinely deontic in nature?

Deontic Reasoning

- Obligations and Permissions ("*Ought*", "*Can*", etc.)
- What formal machinery is required to reason with obligations and permissions?
- What inferences should be supported?
- How should natural language obligations and permissions be "translated" into such a formal system?
- Do obligations and permissions even lend themselves to a formal analysis?
- **Which aspects of linguistic data, and any semantic theory dealing with that data, are genuinely and essentially deontic in nature?**

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(A problematic example.)

- It seems reasonable to say the following (cf. Prior 1958).
- Conjunctive/Relative Clause form:
  - "*It is obligatory to help a man who has been robbed.*"
    "*It is obligatory to help a robbed man.*"
  - "*It is obligatory that Arthur help Robert, who has been robbed by Benjamin.*"
- Conditional form:
  - "*If a man has been robbed, it is obligatory to help him.*"
  - "*If Robert$_i$ has been robbed by Benjamin, is obligatory that Arthur help him$_i$.*"
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Some problems for the Good Samaritan

- There are at least two problems when it come to providing a formal analysis of the Good Samaritan.
- First
  - The obligation is expressed with singular indefinites (i.e. "... *help* **a** *robbed man*",
  - but presumably it is intended to express, or impose, some universal obligation (i.e. "... *help* **every** *robbed man*").
- This is "just" a particular example of the more general problem of analysing generic expressions: it is important to be aware of this issue, but we don't seek to provide a comprehensive solution to this problem here.
- The second problem we will identify is of more central concern for deontic reasoning ...

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An aside on Standard Deontic Logic

- Standard Deontic Logic (SDL) includes the following rule

$$\textit{If} \vdash (p \rightarrow q) \ \textit{then} \vdash (\mathrm{O}p \rightarrow \mathrm{O}q)$$

- SDL also supports the classical tautologies, including

$$\vdash ((p \ \& \ q) \rightarrow p)$$
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- Combining these yields the following

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- So in SDL, *obligation* distributes across conjunction: **if we are told that** $\mathrm{O}(p \ \& \ q)$**, we can infer** $\mathrm{O}p$ **and** $\mathrm{O}q$.
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SDL and The Good Samaritan

- Assume that "*help*" can be represented as a predicate, and "*robbed*" is an intersective adjective (another predicate).
- "*help a robbed man*" then involves an expression of the form (*naively, ignoring quantifiers and determiners etc.*)

$$\ldots\ help'(x)\ \&\ man'(x)\ \&\ robbed'(x)\ldots$$

- If we are obliged to help a robbed man, then this would appear to involve

$$O(help'(x)\ \&\ man'(x)\ \&\ robbed'(x))$$

- But assuming this is right (*modulo* some important details), then in SDL, we can then infer

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Questions about this representation

- We may question whether such a naive interpretation is appropriate, or misleading.
- It is conceivable that a proper treatment of quantification and modifier expressions etc. might lead us to consider the issue differently.
- We may question the adequacy of SDL.
- But, regardless of our position on these issues, there is no doubt that the problem is considered a very real one in the literature.

Overview of Possible Solutions

Proposals to address this example include the following.

1. Different kinds of obligations are required (Åqvist, 1967).
2. A conditional analysis resolves the issue (van Fraassen 1972).
3. Grammatical distinctions/types resolve the issue (Castañeda 1981).
4. Incorporating agency resolves the issue (Nowell-Smith and Lemmon 1960).

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Different Kinds of Obligations

- On approach is to have multiple levels of obligation, such as DL_2 (Åqvist, 1967).
- In the case of the Good Samaritan, there is a "primary" obligation not to rob: $\mathrm{O}_1(r)$.
- The statement of interest is a "reparational" obligation to help someone who has been robbed: $\mathrm{O}_2(r \ \& \ h)$.
- In DL_2, any "reparational" obligation will be vacuous when describing a state-of-affairs that conflicts with a primary obligation.
- So any entailment that $\mathrm{O}_2(r)$ is rendered void by the existence of the obligation: $\mathrm{O}_1(\neg\, r)$.
- *Can we achieve a similar effect without an ordering, or ideal worlds and ideal extensions?*

Different Obligations: Problems?

- How do we determine the level of an obligation in advance?
- Needs to be generalised to arbitrary levels DL_ω (Åqvist)
- Is there a natural order?
- Can we guarantee the order is free from conflicting obligations at a given level?
- Is it an arbitrary solution?
- Issues with ideal worlds and extensions (in common with all Possible Worlds accounts)?

[*return to overview* | *skip to next section*]

Conditional Interpretations and Substitution

- van Fraassen (1972) concentrates on the analysis of the relative clause
- He assumes we need to identify an individual i with "*the man who has been robbed*" (call this fact S).
- We cannot derive that "*a man has been robbed*" (r) without this identity fact S.
- Rather than (h & r), from which we can infer r, we have (h & S) from which we can infer r
- S is not within the scope of the obligation.
- He offers a conditional re-interpretation using the principle that if $\vdash (h \ \& \ S) \rightarrow r$, then $\vdash \mathrm{O}(h/S) \rightarrow \mathrm{O}(h \ \& \ r/S)$.
- In essence, the obligation is to help a man (and the man has been robbed) on condition that the man is a man who has been robbed.

Conditional Interpretations: Problems?

- Putting the conditional framework to one side, this account hinges on a substitution fact.
- If substitutions are not required in the analysis of the Good Samaritan, then this fails to block the problematic inference.
- Most contemporary accounts of the syntax-semantics interface do *not* rely on substitution facts being expressed in the logic.

[*return to overview* | *skip to next section*]

Distinguishing Types

- Castañeda (1981) notes there is often a grammatical distinction between propositional and "practives" expressions
- The latter are ("*robbed*" v. "*[to] help*").
- He uses this to motivate the argument that normally only practive expressions are subject to the modal force of an obligation, so $\mathrm{O}(r_{prop} \ \& \ h_{pract})$ is really $r \ \& \ \mathrm{O}(h)$.
- Thus there is no obligation to rob, as that has propositional rather than practive content.
- *(Does this also address concerns about naturalistic fallacy expressed by Nowell-Smith & Lemmon over the Andersonian reduction.)*

Distinguishing Types: Problems?

- Åqvist highlights a problem with the analysis that robbing is outside the scope of obligation.
- Intuitively, it is consistent to say "*It ought to be that if Smith refrains from robbing Jones then the Samaritan does not help Jones*"
- But now we there are circumstances where $\mathrm{O}(h)$ and $\mathrm{O}(\neg\, h)$ can be derived (which is not permitted in SDL).
- Also, the linguistic evidence is not clear-cut (at least in English).
- "*It ought to be the case that <u>you sell your cat</u>.*"

[*return to overview* | *skip to next section*]

Agency for Escapism

- Treat obligation as what you need to do to escape a sanction (S)
- Op acts like $\neg\, p \rightarrow S$
- The Good Samaritan (as originally expressed) is that the sanction for robbing applies to the Samaritan.
- Nowell Smith and Lemmon (1960) extend Prior's (1958) approach so the sanction is indexed by the person who is sanctioned.
- This enables them to make clear that the Samaritan is not subject to the sanction of the robber. For x to help y in the event y is robbed by z avoids a sanction for x, but implies there is a sanction for z.
- *Problem of the "naturalistic fallacy".*

[*return to overview* | *skip to next section*]

Some Question

- Is it right to take a particular example — such as the (conjunctive) Good Samaritan — and use it to motivate radical revisions to a formal theory?
- Do such particular examples provide enough evidence to support particular views on logic and language, including
  1. the behaviour of logical conjunction and implication, and
  2. the appropriate way of modelling natural language conjunction, modifier expressions and relative clauses?
- Do any conclusions drawn from the Good Samaritan carry over to less emotive examples?

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Is the Good Samaritan typical?

- Is the Good Samaritan a "representative" example of an obligation involving intersective adjectives, and/or relative clauses?
- If we have an appropriate analysis of the Good Samaritan, do we have an appropriate analysis for all examples of the same form, (with or without potentially conflicting obligations)?
- Are the issues raised in the Good Samaritan actually a particular case of a more general pattern of behaviour, that also arises in non-deontic contexts?

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The Hygenic Cook

- Let us substitute "*use*" for "*help*"; "*clean*" for "*robbed*"; "*knife*" for "*man*";
  - "*You should use a clean knife.*"
  - "*You should use a knife that has been cleaned.*"
- The following are potential glosses.
  - "*Find a knife that has been cleaned, and use it.*"
  - "*If you wish/need/are obliged to use a knife, [you are under an obligation to] ensure that it has been cleaned.*"
- Or perhaps, in some contexts, the stronger
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Comparison

- Despite having the same form as the Good Samaritan example, the Clean Knife sentence almost certainly does *not* entail
  - "*If a knife has been cleaned, you are under an obligation to use it.*"
- And, as we have seen, the Good Samaritan example almost certainly does *not* entail
  - "*If you wish/need/are obliged to help someone who has been robbed, there is an obligation that person be robbed.*"
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Overview of More Possible Solutions

Some proposals that may be relevant to such examples include the following.

1. Deny that obligations distribute.
2. Use defeasible inferences (Bonevac 1998, Makinson and van der Torre 2003).
3. Blame pragmatics.

[*skip details*]

An "Obvious" Solution

- A catch-all solution to this problem is to deny that obligations distribute down to the components of a sentence.
- In a formalisation, this effectively says there is no general inference from $\mathrm{O}(a \ \& \ b)$ to $\mathrm{O}(a)$ and $\mathrm{O}(b)$ (for example).
- The denial of distribution avoids both an obligation to rob, and an obligation to use a knife.

A Problem

- A potential problem with such a catch-all solution is that it the blocks further analysis of what is actually required by the obligation.
- Potentially useful inferences are blocked along with the problematic ones.

[*return to overview* | *skip to next section*]

Defeasible Inferences

- We might consider that there is a general inference of obligations to constituent parts, but that these are defeasible (Bonevac 1998, Makinson and van der Torre 2003).
- All things being equal we can infer that we are obliged to "*rob*", "*help*", "*clean*" and "*use*", but that other contextual information can defeat such inferences.
- In particular, knowledge that robbing is wrong defeats the inference that we should rob.
- This is a very powerful and general technique.
- What are the principles that govern when it is applicable?

[*return to overview* | *skip to next section*]

Pragmatics v. Semantics

- One might counter this by arguing that the differences in the interpretation are pragmatic rather than semantic.
- On such a view, *semantics* is that aspect of meaning that is based systematically on syntactic form, and *pragmatics* then explains contingent differences based upon lexical meaning, presuppositions, and focus etc.
- But can we do any better: can we go someway towards accounting for such "pragmatic" differences in these examples?

[*return to overview* | *skip to next section*]

An Alternative Approach

- Could it be that the problem is not a problem of deontic representation and reasoning as such, but is something which is best conceived of as a specific example of a some other more general problem, or pattern of behaviour?
- 1. Insights from pseudo-imperatives (Franke 2005).
  2. Topic/focus effects (Rooth 1993).
  3. Analysis of relative clauses and other modifier expressions (Arnold 2006, Wyner 2008).

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Insight from Pseudo Imperatives

- It may be instructive to seek out other cases where changing the words radically alters the nature of the supposed obligation.
- Consider conjunctive pseudo-imperatives
  - "*Take another drink and you will die*"
  - i.e., "don't take another drink."
  - "*Take another drink and you will be happy*"
  - i.e., "do take another drink."
- The difference lies in what is seen as a desirable outcome: dying v. being happy. (Alternatively, it could be due to the relative costs/benefits of taking a drink v. dying/being happy.)
- Perhaps this provides a potential solution? (Robbing is less desirable than cleaning.)

[*return to overview* | *skip to next section*]

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- Consider conjunctive pseudo-imperatives
  - "*Take another drink and you will die*"
  - i.e., "don't take another drink."
  - "*Take another drink and you will be happy*"
  - i.e., "do take another drink."
- The difference lies in what is seen as a desirable outcome: dying v. being happy. (Alternatively, it could be due to the relative costs/benefits of taking a drink v. dying/being happy.)
- Perhaps this provides a potential solution? (Robbing is less desirable than cleaning.)

[*return to overview* | *skip to next section*]

Insights from Topic/Focus

- Another place to look is in the analysis of topic/focus
  - "*A big female is usually the leader of a group*" [Rooth]
- This could mean
  - "*When a female is big, she is usually the leader of a group.*"
  - "*When something is a group, the leader of it is usually a big female.*"
- The distinctions in the interpretation could be determined by reflecting on the question to which the sentence might provide an answer, e.g.
  - "*What does a big female usually do?*" as opposed to
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Focus-based Interpretations

- The same approach may be relevant in determining an appropriate analysis of deontic examples.
- The deontic statements might be considered answering implicit questions of the form
  - "*What should you do if you encounter someone who has been robbed?*", and
  - "*What kind of knife should be used?*".
- We might consider whether there are differences in the telicity and the focus (e.g. on "*help*" and "*clean*", respectively) that could explain the acceptable interpretations.

[*return to overview* | *skip to next section*]

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[*return to overview* | *skip to next section*]

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[*return to overview* | *skip to next section*]

Relative Clause Issues

- Wyner (2008) argues that the Good Samaritan paradox can be explained in terms of non-restrictive relative clauses ("*. . . a man, who has been robbed . . .*").
- Such clauses can be taken to lie outside the scope of a given context (Arnold 2006), which can include the deontic operator.
- We may question whether this is actually the correct interpretation of the Good Samaritan: it presupposes that we know who needs help independently of any robbery facts.
- Even so, the idea of finding principled, independently motivated grounds for taking some material outside the scope of the deontic operator is appealing.

[*return to overview* | *skip to next section*]

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[*return to overview* | *skip to next section*]

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[*return to overview* | *skip to next section*]

Over-fitting the Data

- The Good Samaritan example was originally used to illustrate a potential difficulty that needs to be considered in the formal analysis of deontic statements.
- It could be argued that focussing on that particular example may result in theories that "overfit" the data, and may implicitly assume that the Good Samaritan is representative of obligations involving modifier expressions.
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Pragmatics v. Semantics

- Another ever present issue concerns the proper boundary between semantic and pragmatic analysis.
- There is a risk that pragmatics is just a catch-all for those things that cannot (yet) be accounted for within a semantic framework.
- How and when is it acceptable to determine when something is outside the scope of a semantic theory?
- What "interfaces" should a semantic theory provide for a pragmatic analysis, i.e. how can a pragmatic analysis influence semantic inferences?

Other Boundaries

- Similar issues arise more generally in determining the scope of the analysis of a given phenomena, and the demarcation between various aspects of interpretation.
- How much should a theory of deontic expressions say about a given example, and how much can be relegated to other aspects of interpretation, such as generics, focus, etc.?
- When is it acceptable to decline to take responsibility for the behaviour of a given example?

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Conclusions

- It *appears* that "pragmatic" effects make it intrinsically difficult to formalise a logical account of obligations and permissions.
- But there may actually be principled accounts of these effects, where the problematic "deontic" examples are in reality specific examples of essentially non-deontic phenomena.
- To go beyond toy examples, it is important to try to identify principled accounts of other phenomena that may provide an alternative explanation for the behaviour of the examples.
- This may clarify our intuitions about the meaning of obligations and permissions as such, and simplify the formalisation of their essential character.
- These arguments may generalise to other aspects of formal semantics and philosophical logic.

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The End