Vagueness and abundance

Martín Abreu Zavaleta

mabreuza@syr.edu

https://martinabreu.net/vabr.pdf

Arguments from abundance

(1) Oaks are tall

Arguments from abundance

Somewhere between 1m and 6m, there's a boundary (perhaps vague) between trees that count as "tall" and trees that don't.

Arguments from abundance

Infinitely many candidates:

⋮

"oaks are tall" means that oaks are at least 4.999m tall
"oaks are tall" means that oaks are at least 5m tall
"oaks are tall" means that oaks are at least 5.001m tall

⋮

Arguments from abundance

$$\Gamma = \left\{ \begin{array}{c} \vdots \\ \text{“oaks are tall” means that oaks are at least 4.999m tall} \\ \text{“oaks are tall” means that oaks are at least 5m tall} \\ \text{“oaks are tall” means that oaks are at least 5.001m tall} \\ \vdots \end{array} \right\}$$

Arguments from abundance

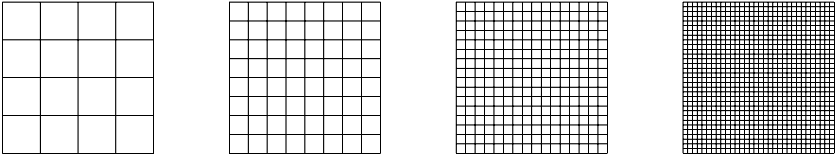
Abreu Zavaleta (2022):

P1 (**Symmetry:**) If A has positive credence in any member of Γ, A has positive credence in uncountably many members of Γ.

P2 (**Finitude:**) At most finitely many members of Γ are true at any given world.

C (**Tyniness:**) A doesn't have positive credence in any member of Γ.

Arguments from abundance



Arguments from abundance

Dorr and Hawthorne (2014):

P1 (**Symmetry:**) If any member of Γ has positive measure relative to W, then uncountably many do.

P2 (**Finitude:**) At most finitely many members of Γ are true at any given world in W.

C (**Tyniness:**) No member of Γ has positive measure.

Arguments from abundance

If each point in a σ-finite measure space belongs to only finitely many members of a certain family of sets, then at most countably many members of that family have positive measure. (see D&H, fn. 16 for proof)

Arguments from abundance

Troubles for orthodoxy:

- Speaker meaning (Bach and Harnish, 1979; Grice, 1989; Schiffer, 1972)
- Understanding (Grice, 1989; Strawson, 1964)
- Substantive agreement/disagreement (Chalmers, 2011; Vermeulen, 2018)
- Semantic competence and semantic content (Heim and Kratzer, 1998; Kaplan, 1989; Lewis, 1970)
- Counterfactual speech reports

Arguments from abundance

$$\Gamma = \left\{ \begin{array}{l} \hfill\vdots\hfill \\ \text{``oaks are tall'' means that oaks are at least 4.999m tall} \\ \text{``oaks are tall'' means that oaks are at least 5m tall} \\ \text{``oaks are tall'' means that oaks are at least 5.001m tall} \\ \hfill\vdots\hfill \end{array} \right\}$$

Arguments from abundance

Asymmetry: Some members of Γ have positive measure, and only countably many do.

Plan

The metaphysical picture

$\Box$ - metaphysical necessity
Δ - determinacy

The metaphysical picture

Identity

$$P = Q \to \Box\Delta(\phi \leftrightarrow \psi)$$

The metaphysical picture

P is precise iff it is necessarily determinate.

$$\Box(\Delta P \vee \Delta \neg P)$$

The metaphysical picture

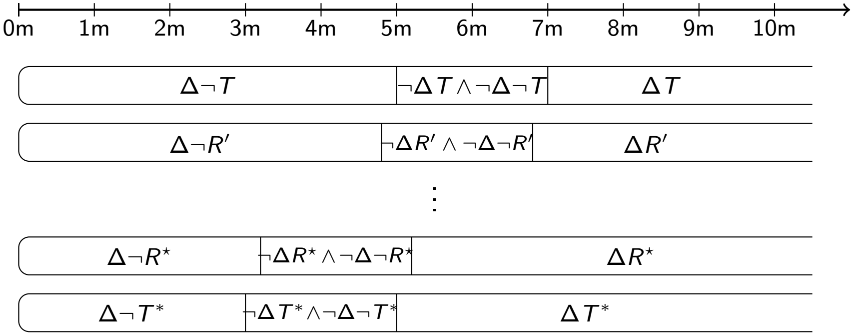
P is vague iff it is possibly indeterminate.

$$\Diamond(\neg\Delta P \wedge \neg\Delta\neg P)$$

The metaphysical picture

Vague distinctness: If P and Q are distinct vague propositions, then it's possible that one is determinately true while the other is determinately false.

The metaphysical picture



The metaphysical picture

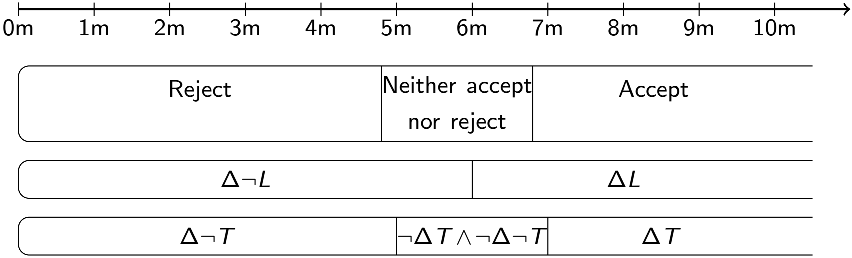
Vagué propositions are coarser than precise ones:

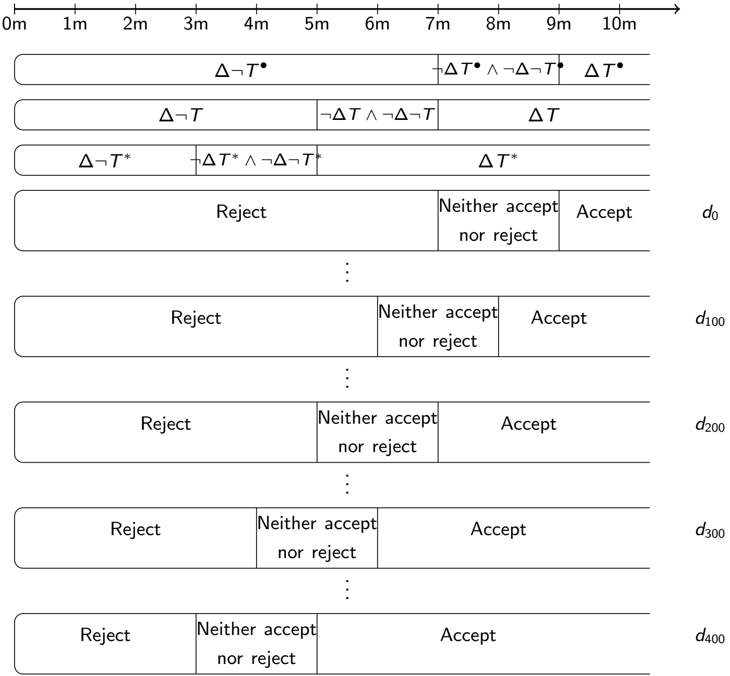
- every vague proposition is precisifed by at least two precise propositions, but
- any precise proposition precisifies at most one vague proposition.

The metasemantic picture

Dispositionalism: Declarative sentence s means proposition P just in case P best matches competent speakers' profile of dispositions to accept or reject s.

The metasemantic picture




0m 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m
Δ¬T•
¬ΔT• ∧ ¬Δ¬T•
ΔT•
Δ¬T
¬ΔT ∧ ¬Δ¬T
ΔT
Δ¬T*
¬ΔT* ∧ ¬Δ¬T*
ΔT*
Reject
Neither accept nor reject
Accept
d0
d100
d200
d300
d400

Establishing Asymmetry

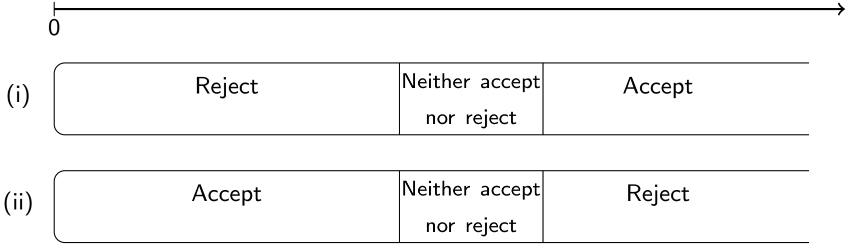
Only countably many propositions are good meaning candidates for (1).

Establishing Asymmetry

Asymmetry: Some semantic propositions have positive measure, and only countably many do.

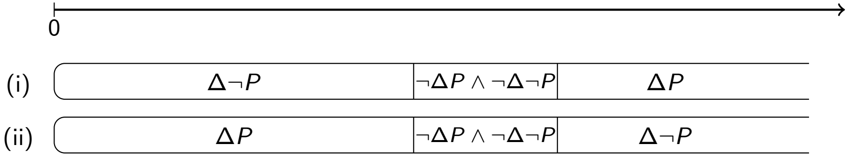
Establishing Asymmetry

Dispositions to accept or reject gradable sentences have one of the following structures:



Establishing Asymmetry

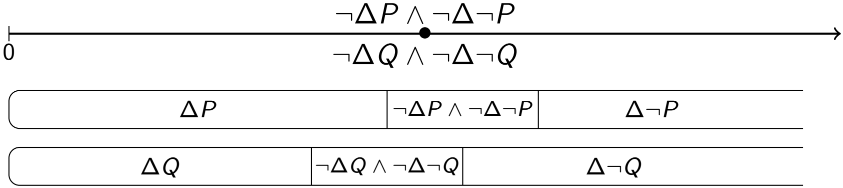
Given Dispositionalism, the best meaning candidates should have corresponding structures (ruling out gerrymandered vague propositions):



Establishing Asymmetry

If P and Q have the same structure and depend on the same dimension, then their regions of indeterminacy overlap iff they are the same proposition.

Establishing Asymmetry



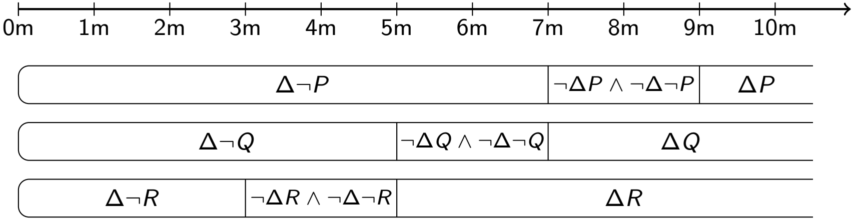
Establishing Asymmetry

So if P and Q depend on the same dimension and have the same structure, then if $P \neq Q$ they have disjoint regions of indeterminacy along that dimension.

Establishing Asymmetry

So we can represent vague propositions which depend on the same dimension and have the same structure as disjoint intervals of $\mathbb{R}$.

Establishing Asymmetry



Establishing Asymmetry

But any set of disjoint intervals of $\mathbb{R}$ is countable, so there are only countably many vague meaning candidates for (1) with the right structure.

Establishing Asymmetry

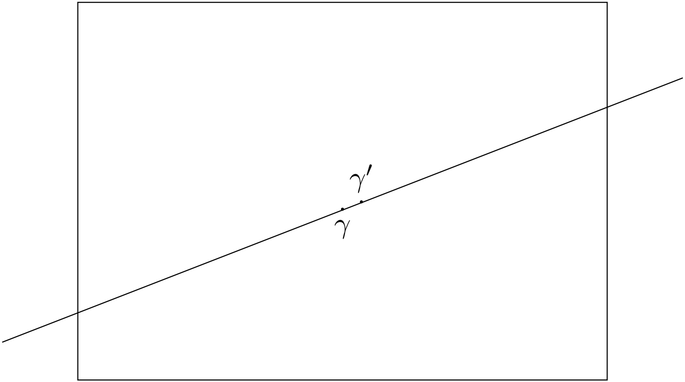
So if any proposition assigning one of those vague meaning candidates to (1) has positive measure, only countably many do.

Dorr & Hawthorne

P1 (**Symmetry:**) If any member of Γ has positive measure, then uncountably many do.

P2 (**Finitude:**) At most finitely many members of Γ are true at any given world in W.

C (**Tyniness:**) No member of Γ has positive measure.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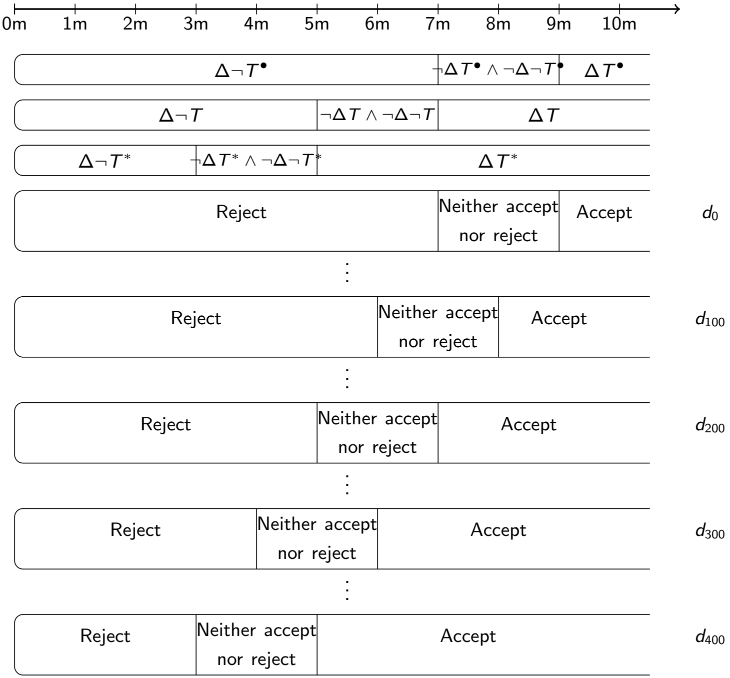
γ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$\Delta\neg T^\bullet$
$\neg\Delta T^\bullet \wedge \neg\Delta\neg T^\bullet$
$\Delta T^\bullet$
$\Delta\neg T$
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ΔT
$\Delta\neg T^*$
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ΔT^*
Reject
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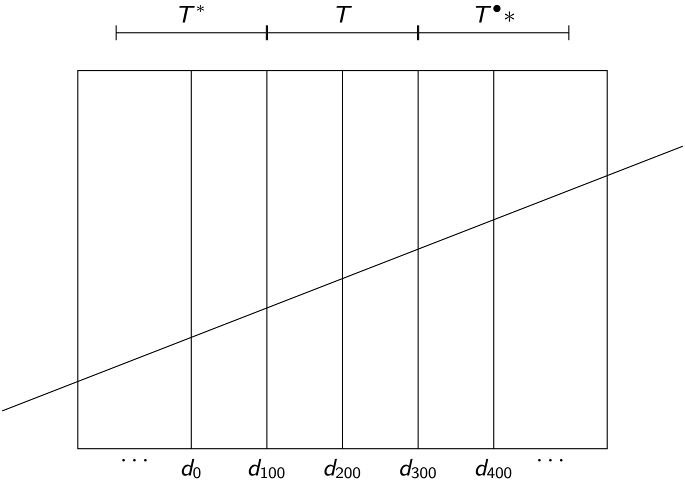
d_{300}
Reject
Neither accept nor reject
Accept
d_{400}

Dorr & Hawthorne



Abreu Zavaleta

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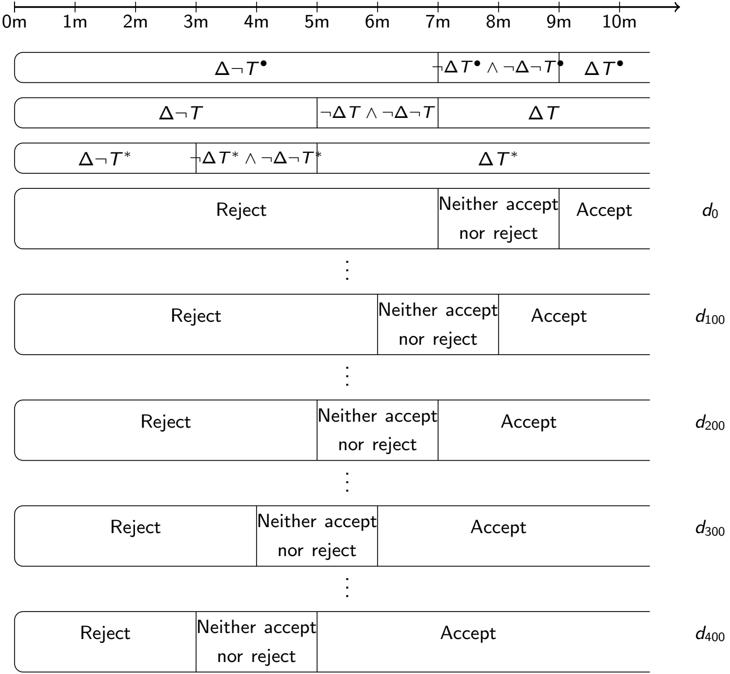
0m
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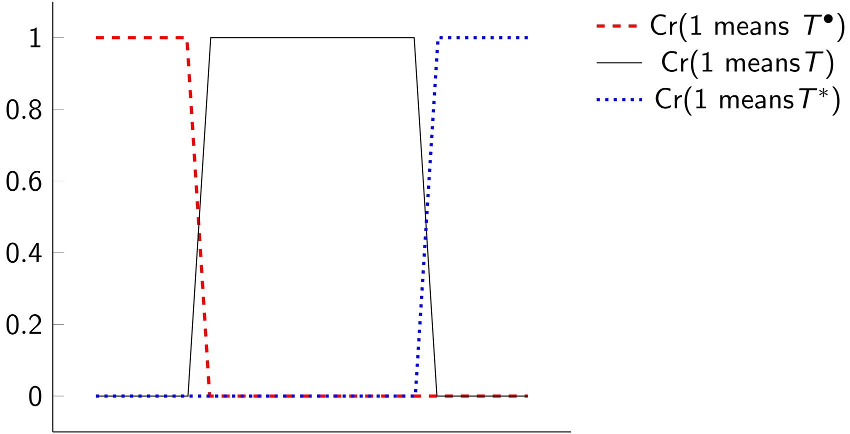


1
0.8
0.6
0.4
0.2
0
Cr(1 means $T^\bullet$)
Cr(1 means T)
Cr(1 means T^*)

Conclusion

- Outlined a view able to motivate Asymmetry.
- Showed how this view helps resist arguments from abundance.

References I

Abreu Zavaleta, M. (2022). Inferences from Utterance to Belief. *The Philosophical Quarterly*, 73(2):301–322.

Bach, K. and Harnish, R. M. (1979). *Linguistic Communication and Speech Acts*. MIT Press.

Chalmers, D. J. (2011). Verbal disputes. *Philosophical Review*, 120(4):515–566.

Dorr, C. and Hawthorne, J. (2014). Semantic plasticity and speech reports. *Philosophical Review*, 123(3):281–338.

Field, H. (2003). No fact of the matter. *Australasian Journal of Philosophy*, 81(4):457–480.

Fine, K. (2008). The impossibility of vagueness. *Philosophical Perspectives*, 22(1):111–136.

Grice, H. P. (1989). Meaning. In *Studies in the Way of Words*. Harvard University Press.

References II

Heim, I. and Kratzer, A. (1998). *Semantics in Generative Grammar*. Blackwell.

Kaplan, D. (1989). Demonstratives. In Almog, J., Perry, J., and Wettstein, H., editors, *Themes From Kaplan*, pages 481–563. Oxford University Press.

Lewis, D. (1970). General semantics. *Synthese*, 22(1-2):18–67.

Schiffer, S. (1972). *Meaning*. Oxford,Clarendon Press.

Schiffer, S. (2017). Gricean semantics and vague speaker-meaning. *Croatian Journal of Philosophy*, 17(3):293–317.

Strawson, P. F. (1964). Intention and convention in speech acts. *Philosophical Review*, 73(4):439–460.

Sud, R. (Manuscript). A zetetic approach to vagueness.

Vermeulen, I. (2018). Verbal disputes and the varieties of verbalness. *Erkenntnis*, 83(2):331–348.

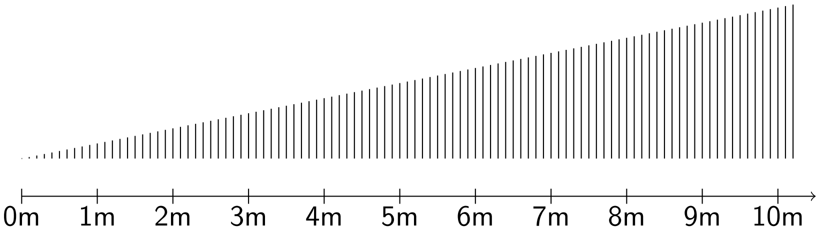
Two challenges

1. Fa_1
2. $\neg Fa_k$
3. $\exists n. Fa_n \wedge \neg Fa_{n+1}$

Two challenges

Suppose the cutoff for *being tall* is n. Then we can let the property *being tall** be exactly like *being tall*, except that the cutoff is $n+1$. Because *being tall* is vague, it is indeterminate whether n is the cutoff for *being tall*, and it is thus vague whether $n+1$ is the cutoff for *being tall**. So *being tall** is vague as well.

Two challenges



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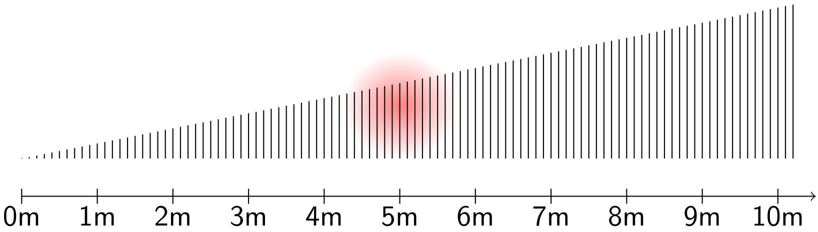

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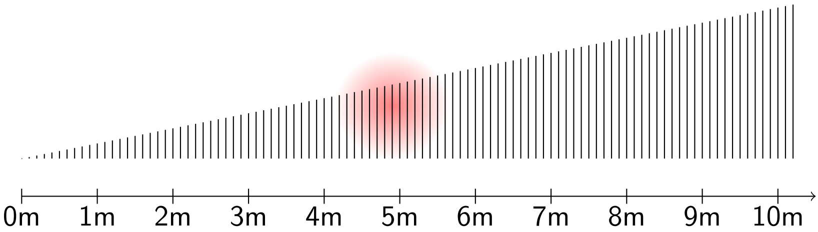


Responses to challenges

$$
\begin{array}{rcl}
\text{Oaks are at least around 6.001m tall} & = & \text{Oaks are at least around 6.002m tall} \\
\text{Oaks are at least around 6.002m tall} & = & \text{Oaks are at least around 6.003m tall} \\
& \vdots & \\
\text{Oaks are at least 6.099m tall} & \neq & \text{Oaks are at least 6.1m tall}
\end{array}
$$

Responses to challenges

Suppose the cutoff for *being tall* is n. Then we can let the property *being tall** be exactly like *being tall*, except that the cutoff is $n + 1$. Because *being tall* is vague, it is indeterminate whether n is the cutoff for *being tall*, and it is thus vague whether $n + 1$ is the cutoff for *being tall**. So *being tall** is vague as well.

Responses to challenges

Fine (2008); Field (2003); Sud (ript): it's weird to suppose that the cutoff is n and, at the same time, that it is indeterminate whether the cutoff is n.

Responses to challenges

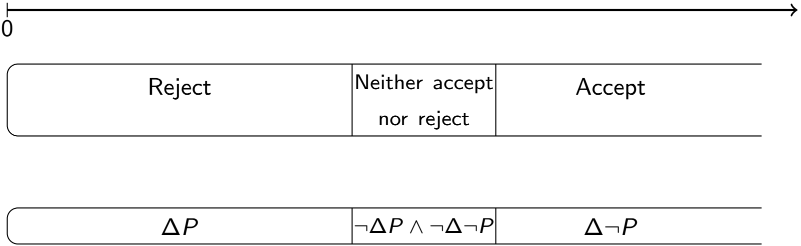
(1) Oaks are tall but it's indeterminate whether oaks are tall.

(2) Anyone bald has at most 4,000 hairs, but it is indeterminate whether anyone bald has at most 4,000 hairs.

(3) Suppose that oaks are tall and it's indeterminate whether oaks are tall.

(4) Suppose that anyone bald has at most 4,000 hairs and it's indeterminate whether anyone bald has at most 4,000 hairs.

Dispositions



Vague objects

(a) One cloud (b) Two clouds