# Philosophy 308
# *The Language Revolution*
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# Hamilton College, Fall 2014

## Class #17: Quine and Semantic Holism

# Business

- Chomsky movie tonight
  - Science G041
  - 8pm movie
  - Discussion to follow

- Today:
  - Quine's semantic holism
  - 48 slides

- Thursday through next week
  - Wittgenstein's meanings skepticism

# From "Two Dogmas" to "Ontological Relativity"

- In "Two Dogmas", Quine argues that there is no analytic/synthetic distinction and that meaning is not atomic, but holistic.

- In "Ontological Relativity", Quine connects his semantic holism with his doctrine of the indeterminacy of translation.
  - ‣ Inscrutability of reference
  - ‣ Ontological relativity

# Holism and the Web of Belief

"The totality of our so-called knowledge or beliefs, from the most casual matters of geography and history to the profoundest laws of atomic physics or even of pure mathematics and logic, is a man-made fabric which impinges on experience only along the edges.  Or, to change the figure, total science is like a field of force whose boundary conditions are experience...The total field is so underdetermined by its boundary conditions, experience, that there is much latitude of choice as to what statements to reëvaluate in the light of any single contrary experience.  No particular experiences are linked with any particular statements in the interior of the field, except indirectly though considerations of equilibrium affecting the field as a whole" (Quine, "Two Dogmas").

# Meanings Holism and the Analytic/Synthetic Distinction

- QM1. If there is an analytic/synthetic distinction, there must be a good explanation of synonymy.

- QM2. The only way to explain synonymy is to posit determinate meanings.

- QM3. But there are no determinate meanings; the museum of meanings is a myth.

- QM4. Thus, there is no good explanation of synonymy.

- QMC. And thus there is no analytic/synthetic distinction.
  - Both the arguments against the myth of the museum and the arguments for indeterminacy of translation support QM3.

# An Epistemic Argument
# For Meanings Skepticism

- Quine's primary argument against the myth of the museum is epistemic.

- If there were meanings, there would be no way to know them, whether we take them to be ideas or abstract objects.

- There is no way for us to apprehend meanings, "[Beyond] what may be implicit in [our] dispositions to overt behavior" (OR, 27).

- When we translate from one language to another, we do not merely switch labels on internal exhibits.

- We look for translation manuals which fit all and only the overt behavior of the native.

# Radical Translation and Behavioral Constraints

- Radical translation is the translation of completely unrelated languages.

- The field linguist attempts to translate a completely alien language into her home language.
  - No hints
  - No bilinguals

- The evidence for a translation is supposed to be all the evidence we ever have for understanding people.

- Language, Quine claims, is "[A] social art which we all acquire on the evidence solely of other people's overt behavior under publicly recognizable circumstances" (26).

# Language Learning

- We start to learn language mostly by ostension, the paradigm case of which is simple pointing.

- By ostension, we learn to put labels on objects.

- As our knowledge of language grows, we discover some words that do not ascribe observable traits to observable things.

- Learning abstract terms, logical terms, prepositions, plurals, and individuative terms requires a more subtle learning process, which Quine calls deferred ostension.

- Still, the tools we have to learn language are exhausted by behavioral evidence.

# Homophonic Translation

## or, the ubiquity of translation

- Consider what Quine calls homophonic translation, when we translate each string of phonemes into itself.

- We use homophonic translation when talking with our friends and family, people who use the same language that we do.
  - ‣ From your idiolect to my idiolect

- We use a principle of charity even in homophonic translation.

- And there are some times when we use heterophonic translations, even among friends.

- I know some people who start sentences with 'No', even when they agree with me.

- Sometimes, I call them out on it: "So, when you said 'no', you meant 'yes'."

- Other times, I just do the heterophonic translation quietly, to myself.

# A Moderate Behaviorism

- Quine's behaviorism is not metaphysical.
  - ▸ He is not primarily denying that there are mental objects or events.
- His behaviorism is epistemic.
  - ▸ Behavioral evidence is all the evidence we have.
- If we learn something that can not be traced directly to overt behavior, then we must have learned it indirectly, in some complex way, from behavior.
- If there is a fact of the matter about which of two translations of a native sentence is right, or which words are synonyms, then there would have to be behavioral evidence to decide the matter.
- In the absence of any observable evidence which could decide on a correct translation, we should conclude that translation is indeterminate.

# Underdetermination, Indeterminacy, Inscrutability

- There are three levels of indeterminacy, broadly construed.
    - I1. Underdetermination of scientific theory
        - At the level of theory
    - I2. Indeterminacy of translation.
        - At the level of sentences
    - I3. Inscrutability of reference.
        - At the level of terms
- If inscrutability holds, the others follow.

# Underdetermination of Scientific Theory

- There may be a lack of information to settle a scientific question.

- Our own beliefs are underdetermined by empirical evidence.

- To re-use an example, we do not know Socrates' blood type.

- Any theory of the blood types of all human beings who ever lived will thus be under-determined by the evidence.

- Similarly, we do not know whether and how much of the universe is made of dark energy.

- Our current scientific theories are underdetermined by the evidence.

# An Example of Underdetermination

- Consider two scientific theories.
- From the first, we derive the claim:
  ‣ ST1: Dark energy makes up 73% of the universe.
- From the second, we derive the claim:
  ‣ ST2: Dark energy makes up 74% of the universe.
- At the moment, let us assume, we lack the evidence to decide between the theories which yield ST1 and ST2.
- We can call those theories *empirically equivalent*, for now.
- But, this underdetermination is merely an epistemic problem.
- We do not conclude that there is no fact of the matter about which theory to choose.
- We just do more research.
- At some point, we expect, those theories will no longer be empirically equivalent.
- Underdetermination entails no metaphysical conclusions.

# Indeterminacy

- Indeterminacy of translation, in contrast, is a deeper, more troubling phenomenon.

- It occurs on the sentence-level.
  - ‣ Holophrastic indeterminacy

- Quine's topiary metaphor:
  - ‣ Entire theories could look the same on the outside, but be constructed quite differently on a piece-by-piece (i.e. sentence-by-sentence) level.

- The indeterminacy thesis: it is possible to have incompatible translation manuals each of which is consistent with all behavioral evidence.
  - ‣ *Word and Object*
  - ‣ Hard to defend
  - ‣ "Here the claim is that there is more than one correct method of translating sentences where the two translations differ not merely in the meanings attributed to the sub-sentential parts of speech but also in the net import of the whole sentence. This claim involves the whole language, so there are going to be no examples, perhaps except of an exceedingly artificial kind" (Hylton, SEP on Quine).

# An Example of Indeterminacy

## From Hartry Field, in his article "Quine and the Correspondence Theory"

- Translating Newtonian theory into relativity theory, we can translate mass as either relativized mass, in which case momentum is mass times velocity, and mass is not invariant.

- Or, we can translate it as rest mass, in which case mass is invariant, but the momentum equation doesn't work.

- We will not pursue indeterminacy at the sentential level, here.
  - ▸ Empirical question: Is Quine right?

# Inscrutability

If reference is inscrutable, then at least some sort of indeterminacy follows.

Quine presents five examples of inscrutability of reference.

    IR1: The French ne...rien construction
    IR2: Gavagai
    IR3: Japanese classifiers
    IR4: Concrete general and abstract singular terms
    IR5: Gödel numbering and deferred ostension

# Gavagai



- We have various options for translating 'gavagai' into English.
  - G1: rabbit
  - G2: undetached proper part of a rabbit (urp)
  - G3: three-dimensional temporal slice of a four-dimensional rabbit
  - G4: instantiation of the universal rabbithood

- If we choose G2 for 'gavagai', we change the native's 'is the same as' to 'is the same collection of undetached proper parts of' (or something like that).

- The only difference among rabbits and urps and temporal segments of four-dimensional rabbits is the individuation.

- Individuation cannot be mastered through pure ostension.
  - "The only difference is in how you slice it.  And how to slice it is what ostension or simple conditioning, however persistently repeated, cannot teach" (OR, 32).

# Simplicity...

- We might argue that 'rabbit' is simply simpler than 'undetached rabbit part'.
- Simplicity could be our guide in translation.
  - "An actual field linguist would of course be sensible enough to equate "gavagai" with "rabbit," dismissing such perverse alternatives as "undetached rabbit part" and "rabbit stage" out of hand.  This sensible choice and others like it would help in turn to determine his subsequent hypotheses as to what native locutions should answer to the English apparatus of individuation, and thus everything would come out all right.  The implicit maxim guiding his choice of "rabbit," and similar choices for other native words, is that an enduring and relatively homogeneous object, moving as a whole against a contrasting background, is a likely reference for a short expression.  If he were to become conscious of this maxim, he might celebrate it as one of the linguistic universals, or traits of all languages, and he would have no trouble pointing out its psychological plausibility.  But he would be wrong; the maxim is his own imposition, toward settling what is objectively indeterminate" (OR, 34).

# ...and Chauvinism

- We discriminate terms by projecting our own attitudes towards grammar, and logical form.

- The maxims for determining reference assume the linguist's own referential apparatus.

- When we try to create a translation manual for a radically different language, we will meet the problem of whether to translate into rabbit ontology or urp ontology.

- It is linguistically chauvinistic to imagine that simplicity in our language is simplicity over all.

# The Pelicans

- Imagine a tribe who call the pelicans their half-brothers
- When they talk about what we refer to simply as half-brothers, they have to use a longer term, equivalent to 'half-brother, but not a pelican'.
- And they have a short term for our long 'half brother or pelican'.
- So simplicity, for example, will not do as a guide.

# Japanese Classifiers

For IR3, the example is of a word which comes with a number and an object.

- That word either modifies the number, or the object.

- Depending on how we use it, the object becomes either a mass term (like water or sepia), or an individuative term (like rabbit).

- Either translation is consistent with speech dispositions, just as 'rabbit' and 'urp' are consistent with speech dispositions, as long as we make corresponding changes to the logical and individuative particles of the rest of the language.

# Concrete General and Abstract Singular terms

- Both 'green' and 'alpha' can be taken either as concrete general terms ('the grass is green') or abstract singular terms ('green is my favorite color').

- The only way we can tell them apart is to use our English apparatus of individuation, which itself is indeterminate.

# These Examples are Kind of Lame

- Fuller examples may require complete translations of a complete language.
  - ‣ A big task
- You can not just translate into different ontology-types term by term; you have to do it all at once.
- One can map the sentences of one's language onto themselves such that behavior (and dispositions to behave) remain the same, and also that the two mappings are clearly different at the sentence and sub-sentential level.
- So there can be incompatible manuals for translating one's language which all accord with the totality of speech dispositions.

# There Are No Reference Facts

- If we can adjust another person's words, and we can translate into proper-part talk without affecting behavior, then we lose the ability to understand our neighbor's assertions as correctly referential.

- If she says that she is talking about rabbits, we don't know if she is, or not.

- "The inscrutability of reference is not the inscrutability of a fact; there is no fact of the matter" (OR, 47)

- If there is a fact of the matter in our own words, then there is a fact about our neighbor.

- But since we know that there is no fact about our neighbor's terms, then we know there is no fact about our own terms.

# Inscrutability Begins at Home

- It seems as if I know that I mean rabbit, rather than urp, and that I know which translation of 'gavagai' is simpler.

- But, if we try to determine how I can mean one rather than the other, we need to appeal to my ideas, which seem off-limits.

- If we have no internal grounds for determining correct translations, then there seems to be no fact of the matter about what I say.

- "On deeper reflection, radical translation begins at home" (OR, 46).

# Reference is Nonsense

"[The] network of terms and predicates and auxiliary devises is, in relativity jargon, our frame of reference, or coordinate system.  Relative to *it* we can and do talk meaningfully and distinctively of rabbits and parts...  We contemplate alternative denotations for our familiar terms.  We begin to appreciate that a grand and ingenious permutation of these denotations, along with compensatory adjustments in the interpretations of the auxiliary particles, might still accommodate all existing speech dispositions.  This was the inscrutability of reference, applied to ourselves; and it made nonsense of reference.  Fair enough, reference *is* nonsense except relative to a coordinate system.  In this principle of relativity lies the resolution of our quandary" (OR, 48).

# Inscrutability and the Analytic/Synthetic Distinction

- If there is determinacy, then there is a fact of the matter about what we mean when we say something: the right translation would thus be grounded.

- But if we had that, then we could have analyticity.

- If we have analyticity, then we can get synonymy, and then we have a fact of the matter about what we say, which can make a translation correct.

- In the other direction, if we have a correct translation, it must be right in virtue of some fact.

- That fact would give us synonymy, which could give us back analyticity.

- Determinacy of translation is just another member of the intensional family we have to give up.

# Vertigo, Anyone?



- It is meaningless to ask whether 'rabbit' refers to rabbits or urps or time slices, even in one's own words, absolutely.

- It makes sense only relative to a background theory which we hold fixed.

- We can make wholesale adjustments to the interpretation of that background theory and still do justice to all speech/ behavioral dispositions.

- We were led to the inscrutability of reference from our considerations of the theory of meaning.
  - ‣ Meaning was always suspect.
  - ‣ But reference seemed more solid.

- Some of us were wary of meanings, propositions, and senses, anyway.

- Russell had already tried to avoid them.

- Now it looks like both meaning and reference are indeterminate.
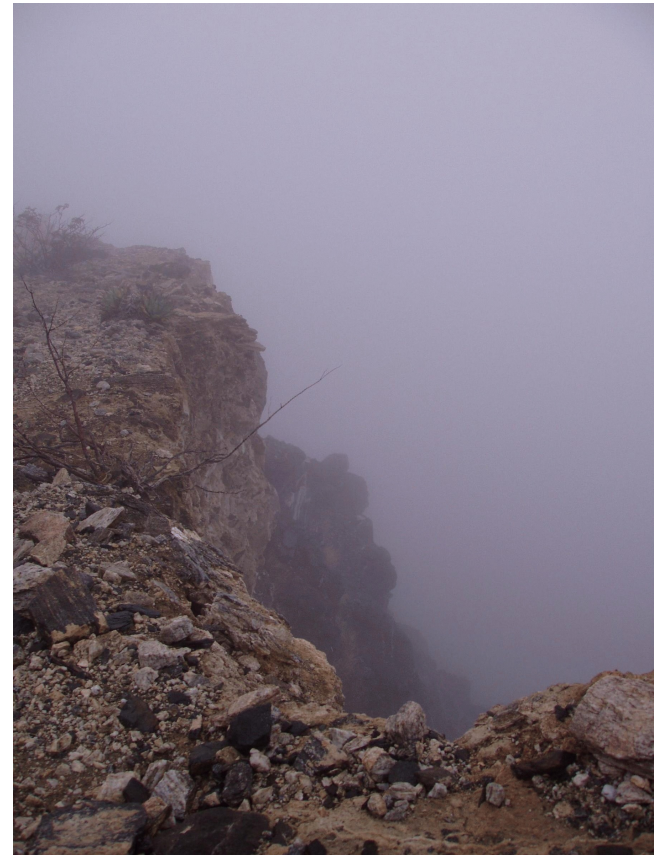
# Pragmatic Constraints on Conversation

- In practice, we end the regress through pointing (or something else practical).

- But in the end, there is no determinacy.

- It only makes sense to talk about how to interpret theories in other theories.

# The Relational Theory of Reference

- We were interested in reference because that was how language hooked onto the world.

- If Quine is correct that reference is indeterminate, then our ontological commitments seem to disappear into a foggy haze.

- The references of our terms depend on an arbitrary choice of the logic of individuation, which can be variously interpreted in a series of background languages.

- We can only interpret a theory, a web of belief, relative to a background theory.

- But that background theory is itself liable to various, empirically equivalent interpretations.

- We seem to become involved in an infinite regress of background languages.

- "What makes sense is to say not what the objects of a theory are, absolutely speaking, but how one theory of objects is interpretable, or re-interpretable in another" (OR, 50).

# Inscrutability and the Inverted Spectrum

- We can never fully interpret a theory, (i.e. say what the singular terms signify or denote, or what go into the extensions of the general terms) because this would say absolutely what the objects of that theory were.

- The problem of the inverted spectrum, which traces back to Locke, is the question of whether our qualitative experiences of color are the same as other people's experiences of color.

- What if every time I saw red, you saw violet; every time I saw yellow, you saw blue?

- If I learned to use language the same way that you use it, and there is no possibility of knowing what another person's qualitative experiences are, it seems possible that my color experience is exactly inverted from yours.

- Quine argues that ontic commitments, and the referential apparatus, of any one person's theory may be similarly indeterminate.
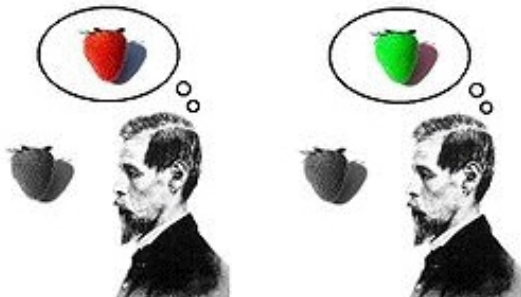
# From Holism to Ontological Relativity

- According to Quine, ontology is the result not of looking around at particular things but of interpreting one's whole theory.

- But meanings of our even our whole theories are indeterminate.
  - ‣ Indeterminacy of translation
    - – Translation is synonymy
    - – There's no good synonymy
  - ‣ Inscrutability of reference

- Thus, our ontology is indeterminate too.
  - ‣ Ontological relativity

# The 'Ontological' in 'Ontological Relativity'

# Empiricism, Logical Empiricism, and Ontology

- Ontology: What Exists

- Atomism and ontology
  - ▸ The meaning of a sentence is its method of verification.
  - ▸ We can find ontology in the referents of the singular terms of our theories.
  - ▸ 'Joan Stewart is in China'

- Holism and ontology
  - ▸ Meaning is a property of whole languages.
  - ▸ We have to look at the ontology of the whole language, not of particular sentences.

# Ontology and Posits

- Along with the loss of reductive justifications of particular sentences, we lose a straightforward method for determining our ontology.

- Instead of direct lines from physical objects to sense data to singular terms, we have to determine our ontology by appeal to the whole of science.
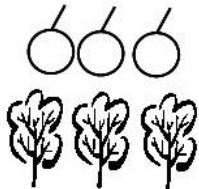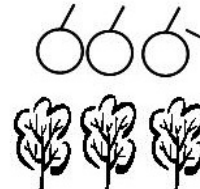


THE OLD ACCESS PROBLEM — THE QUINEAN SOLUTION

# Posits

- Science is a tool, for predicting future experience in the light of past experience.
- Physical objects are convenient posits, "[C]omparable, epistemologically, to the gods of Homer" (Two Dogmas, 167).
- We already accept an ontology of posits for distant objects and very small objects, like electrons.
- Quine argues that all our ontology is of that form.
- "To call a posit a posit is not to patronize it" (*Word and Object*, 22).
- The method of positing is just a result of the failure of reductionism and the turn towards holism.
- The difference between questions of the existence of sets, say, or quarks, and questions of the existence of houses is only one of degree, not of type.
- Posits are accepted or rejected according to pragmatic considerations of theory construction, as well as their coherence and consistency with our broader theory, the web of belief.

# Quine's Procedure for Determining Ontological Commitments

QP1: Select a best scientific theory, one which balances simplicity, strength, and fit with sense experience.

QP2: Regiment that theory in first-order logic with identity.

QP3: Model the resulting formal theory.

QP4: Examine the domain of quantification of the theory to see what objects the theory needs to come out as true.

# The Indispensability Argument

- One consequence of QP is that he reconciles mathematical ontology with empiricist epistemology.

- Traditionally, empiricists had difficulty explaining how we could have knowledge of the abstract objects of mathematics.

- Like Fregean propositions, they inhabit a third realm, and do not impinge on our sense organs.

- By seeing all ontology as scientific posits, Quine opens the door for objects which facilitate, in serious ways, the construction and regimentation of scientific theory.

- Quine's justification of mathematics is called the indispensability argument, for its claim that mathematics is indispensable to science.

# Inscrutability and the Correspondence Theory

## Hartry Field, "Quine and the Correspondence Theory"

- Field argues that Quine's thesis is radical because it seems to preclude any correspondence notion of truth.

- A correspondence theory is based on correspondence relations between the world and our words.

- The correspondence relations are denoting, signifying, and referring.

- For example, 'The cat is on the mat' is correspondence-true iff the object denoted by 'the cat' bears the 'is-on' relation to the object denoted by 'the mat'.

- These relations are denied by indeterminacy.

- We can not denote or refer; reference is nonsense.

# Can We Hold a Translation Manual Fixed?

- Quine suggests that we can hold a background theory (or, a translation manual) fixed, adopting an arbitrary translation manual.

- We can thus forget the indeterminacy of the referential apparatus, and just talk about rabbits, instead of the other options.

- Field says that Quine is too sanguine about fixing a background theory.
  - We can't make sense of the phrase 'relative to a given translation manual.'
  - We would have already to understand what it is to denote (absolutely) relative to a given translation manual.
  - In order to hold the translation manual constant, we have to have some notion of determinate reference within that scope.
  - But if indeterminacy is as infectious as Quine says, we can't even get that.

- Field accuses Quine of being a closet museumist.

# The Refutation of Indeterminacy

## Jerrold Katz, "The Refutation of Indeterminacy"

- Katz argues that Quine's argument against synonymy in "Two Dogmas," and consequently his argument against translation, is missing a piece.

- Katz believes that there are good scientific definitions of synonymy, antonymy, and analyticity.

- If these intensional idioms are scientifically defensible, then translation can be determinate.

# Katz's Version
# of Quine's Argument

- KIT1. There can be no identity conditions for meanings due to the failures of synonymy.

- KIT2. So, meanings can not serve as the common content of sentences and translations.

- KIT3. The facts we can ascertain from behavior do not determine unique translations.

- KITC. Therefore translation is indeterminate.
  - ‣ Katz: Quine's behaviorism is too limited.
  - ‣ Some evidence is not behavioral.

# The Epistemic Argument Against Meanings, Redux

- Katz argues that Quine erroneously derives an ontological skepticism from epistemological considerations.

- All Quine has shown is that there is no (behavioral) evidence which will allow us to choose among various analytical hypotheses.

- There is a difference between the non-existence of meanings and the unknowability of meanings.

- Quine's argument at best only gets the unknowability of meanings, not their non-existence

# Posits!

- Quine's physicalism countenances mathematical objects and theoretical physical particles, for their virtues in systematizing our experience.

- Thus, it would be inconsistent to argue against meanings and synonymy from behaviorist, verificationist principles.

- If meanings help us to systematize our experience of language, the epistemic worries Quine discusses dissipate.

- We can take meanings as theoretical posits.

- In addition, the physicalist could easily allow meanings if they were reducible to brain states.

# Generative Grammars and Theoretical Defintions

- Katz argues that we should appeal to semantic theorems just like the syntactic ones we find in Chomskyan generative grammars.

- Generative grammars include theorems modeled on recursive systems of logic.

- Theoretical definitions are recursively axiomatizable.
  - First, we construct a formal representation of sense structure, showing how senses of sentences are composed of senses of their constituent parts.
  - Then, we find the formal features of those representations that correlate with particular semantic concepts, like analyticity.

- These theoretical definitions are circular, but not viciously circular.
  - "The degree of relatedness exhibited among the concepts in the family is thus a measure, not of circularity, but of the systematizing power of the explanation" (Katz, "The Refutation of Indeterminacy," 240-1).

# Decompositional Semantics

- Decompositional semantics represents semantically simple terms (like 'bachelor') as complex, in terms of the senses of the words.

- A syntactically simple term can contain senses, and thus do justice to Kant's containment metaphor.

- Appealing to semantic theories on the model of Chomskyan generative grammars deflates both the problem of circularity which plagued attempts to define synonymy in terms of substitutivity, as well as the problem that Carnap's meaning postulates had of providing just an un-explanatory list of analytic sentences.

- "Theoretical definitions in linguistic theory provide a way of defining concepts in the theory of meaning for variable 'S' and 'L' because, in defining a concept at the level of linguistic theory, they define it in terms of features of optimal generative grammars for every natural language "(Katz, "The Refutation of Indeterminacy," 243).

# Linguistics Without the Indeterminacy

- Once we establish that there are meanings, the translator can look for a blend of data and methodological considerations in performing radical translation.

- They can rely on judgments about senses of expressions, like whether expressions are meaningful, ambiguous, synonymous or redundant.

- Linguists can make guesses, following hunches, just like in other sciences.

- Further, bilinguals are actually very helpful.

# Summing Up

- Frege took meanings (propositions, concepts) to be objective, third-realm entities.

- The logical empiricists, preferring parsimony, thought of meaning as method of verification.

- Quine argues that meaning is the property of larger swaths of language.
  - Holism and the web of belief
  - Meaningfulness without meanings

- Wittgenstein can be interpreted as denying even the doctrine of meaningfulness.
  - Meanings skepticism ho!