epistemic comparativism

A Contextualist Semantics for Knowledge Ascriptions

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1. What is contextualism?

1. The slogan

"Knowledge ascriptions are context-sensitive in a distinctively epistemic way."

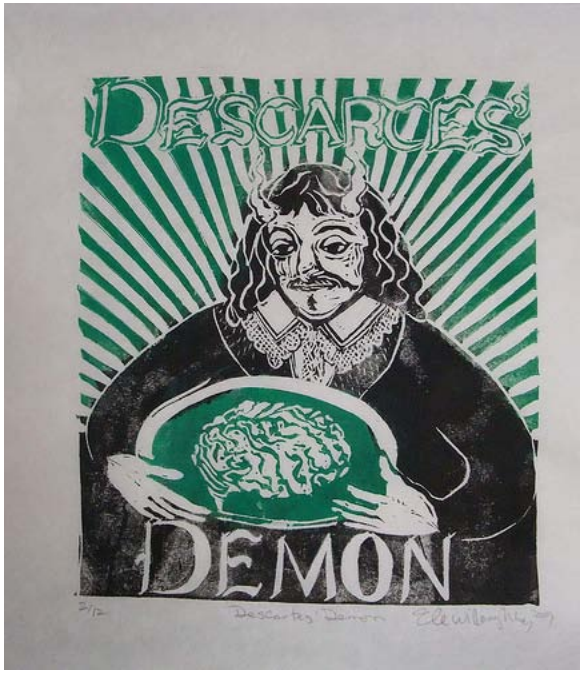
- knowledge ascriptions = sentences (not speech-acts)
- context = context of utterance (not the context of assessment)
- sensitivity = expressing different propositions (not propositional radicals)
- distinctively epistemic way = due to the linguistic meaning of "know"

1. What is contextualism?

2. The payoff

"Knowledge ascriptions are context-sensitive in a distinctively epistemic way."

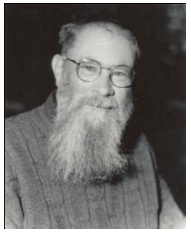
Normal context: "I know I have hands."
Skeptical context: "I don't know I have hands."
Both contexts: "My evidence is the same as before."



1. What is contextualism?

3. Some advocates

"Knowledge ascriptions are context-sensitive in a distinctively epistemic way."



David Lewis

Keith DeRose

Stewart Cohen

Jonathan Schaffer

In a recent large-scale survey of philosophy faculty in the English speaking world contextualism outscored its rivals (40%), including dogmatism, skepticism, sensitive invariantism, relativism, agnosticism, and "other".

2. Motivating contextualism

1. The bank case

(*Low*) It's Friday. Ann and Ben want to deposit a paycheck. Not much hangs on whether they deposit it before next Monday. The lines are long, so Ann recommends that they come back the next day. Ben points out that banks are sometimes closed on Saturdays. But Ann saw that the bank was open two weeks ago on Saturday, so she says: "I know the bank is open Saturdays."

(*High*) It's Friday. Ann and Ben want to deposit a paycheck. If they fail to deposit it before next Monday, an important check they just wrote will bounce. The lines are long, so Ann recommends that they come back the next day. Ben points out that banks are sometimes closed on Saturdays. But Ann saw that the bank was open two weeks ago on Saturday, so she says: "I know the bank is open Saturdays."

2. Motivating contextualism

2. Two problems with the bank case

- Experiments have not corroborated the claim that people in general have the intuition that Ann's claim has different truth-values in the two scenarios. (Cf. Buckwalter *forthcoming*, Schaffer and Knobe *forthcoming*.)

- There is a credible invariantist response to the case, according to which the claims change truth-value because Ann's stakes change. (Cf. Fantl and McGrath 2002, Stanley 2005.)

2. Motivating contextualism

3. The theft case

(*Who*) Claire has stolen the diamonds. Ann and Ben are wondering who stole the diamonds, and Ann finds Claire's fingerprints all over the safe. So Ann says: "I know that Claire stole the diamonds."

(*What*) Claire has stolen the diamonds. Ann and Ben are wondering what Claire stole, and Ann finds Claire's fingerprints all over the safe. So Ann says: "I know that Claire stole the diamonds."

2. Motivating contextualism

4. No problems with the theft case

- There is solid empirical evidence that knowledge-ascriptions are question-sensitive. (Cf. Schaffer and Knobe *forthcoming*.)

- Since there is no change in what is at stake the standard invariantist response fails.

2. Motivating contextualism

5. Challenges: Hidden evidence?

- Perhaps the setup suggests that Ann has additional evidence.

(*WhoThird*) Claire has stolen the diamonds. Dan the detective is investigating the theft. The store attendants Ann and Ben are watching Dan's investigation on closed circuit television from the back room, and wondering who stole the diamonds. They see Dan find Claire's fingerprints all over the safe , and exclaim: "Aha! Claire stole the diamonds!" So Ann says: "Dan knows that Claire stole the diamonds."

(*WhatThird*) Claire has stolen the diamonds. Dan the detective is investigating the theft. The store attendants Ann and Ben are watching Dan's investigation on closed circuit television from the back room, and wondering what Claire stole. They see Dan find Claire's fingerprints all over the safe , and exclaim: "Aha! Claire stole the diamonds!" So Ann says: "Dan knows that Claire stole the diamonds."

2. Motivating contextualism

6. Challenges: Mysterious evidence?

- Perhaps the setup suggests that Dan has additional evidence.

Claire has stolen the diamonds. Dan the detective has received a text message saying "Theft at Ed's Jewelry!" and has headed to the store to investigate. Dan is aware that Ed's Jewelry sells mostly diamonds and that Claire has long planned to rob it. So, Dan assumes that diamonds were stolen and that Claire has committed the theft. The store attendants Ann and Ben are watching Dan's investigation on closed circuit television from the back room, and wondering ...

(*WhatThirdPlus*) ...<u>who stole the diamonds</u>. They see Dan find Claire's fingerprints all over the safe, and exclaim: "Aha! Claire stole the diamonds!" So Ann says: "Dan knows that Claire stole the diamonds."

(*WhatThirdPlus*) ...<u>what Claire stole</u>. They see Dan find Claire's fingerprints all over the safe, and exclaim: "Aha! Claire stole the diamonds!" So Ann says: "Dan knows that Claire stole the diamonds."

2. Motivating contextualism

7. Challenges: *De re* reading?

- Perhaps the setup suggests different readings.

(*WhoEasy*) Claire has stolen the diamonds. Ann and Ben are wondering whether Claire or Dan stole the diamonds. Ann sees a woman who looks exactly like Claire captured on the security video in the act of stealing the diamonds. So Ann says: "I know that Claire stole the diamonds."

(*WhoHard*) Claire has stolen the diamonds. Ann and Ben are wondering whether Claire or her identical twin Dana stole the diamonds. Ann sees a woman who looks exactly like Claire captured on the security video in the act of stealing the diamonds. So Ann says: "I know that Claire stole the diamonds."

3. Semantic analogies

1. Indexicals

(*Reference*) Setting aside demonstrative pronouns, indexicals refer to people and regions of space-time, or at least have a distinctive spatiotemporal flavor; cf. “up”, “former”, etc. “Know” does not fit the pattern.

(*Nominalization*) Indexicals do not give rise to ordinary nominalizations, presumably because they pick out different things in different contexts. But we do have the word “knowledge.”

(*Indirect reports*) Indexicals (at least in English) must be adjusted in indirect reports. Yet homophonic indirect reports are typically fine even if the context has changed considerably.

3. Semantic analogies

2. Gradables

Gradables are a better analogy than indexicals: they are unrestricted in their reference, they can be nominalized, and they can be used in homophonic indirect reports.

? Jill doesn't know very well that she needs four more credits to graduate.

? Does Jill know very well that she needs four more credits to graduate?

✓ Jill doesn't know as well as she should that she needs four more credits to graduate.

✓ How well does Jill know that she needs four more credits to graduate?

3. Semantic analogies

2. Gradables

(*Ad hoc scale*) A gradable expression doesn't merely license comparative and degree morphology; it associates with a lexically determined scale. This does not hold for "know".

I regret very deeply that you will not come to my party.
My regret that you will not come to my party is vast.
The degree of my regret that you will not come is high.

I know very well that you will not come to my party.
? My knowledge that you will not come to my party is strong.
?? The degree of my knowledge that you will not come to my party is high.

3. Semantic analogies

3. Quantifiers

Quantifiers are a good analogy: they aren't plagued by any of the previous problems. On the version of contextualism that is rooted in the relevant alternatives approach knowing that *p* requires eliminating every (relevant) possibility in which *p* is false. Lewis argues that universal quantification introduces context sensitivity through its domain.

3. Semantic analogies

3. Quantifiers

(*No overt restrictor*) Quantificational determiners, like “every”, combine with nominal expressions to form quantifier phrases. The nominal expression restricts the domain of quantification. “Know” typically has no overt restrictor.

(*Shiftability*) Quantifier domains shift easily in a discourse, even within a single clause. (Cf. ✓ “Everyone is asleep and is being monitored by a research assistant.”) “Know” cannot pull such a trick. (Cf. ? “I know I have hands but I don’t know that I am not a handless brain in a vat.”)

3. Semantic analogies

3. Quantifiers

(*WhoAlways*) Claire has stolen the diamonds. Ann and Ben are wondering who stole the diamonds, and Ann finds in the police record that all recent jewelry thefts have been traced to Claire. So Ann says: “Claire always steals the diamonds.”

(*WhatAlways*) Claire has stolen the diamonds. Ann and Ben are wondering what Claire stole, and Ann finds in the police record that all recent jewelry thefts have been traced to Claire. So Ann says: “Claire always steals the diamonds.”

3. Semantic analogies

3. Quantifiers

Bach, Kratzer and Partee (1987) conjecture that natural language quantification comes in two broad categories. D-quantification is based on *d*eterminers, which occur in sentences where syntax straightforwardly delivers a tripartite logical form. A-quantification is based on *a*dverbs, *a*uxiliaries, and *a*rgument-structure *a*djusters. With A-quantification, the tripartite logical form depends on additional factors, including information structure (what information is new, what is presupposed, what is the topic, etc.)

Perhaps “know” is an A-quantifier.

4. A sketch of a contextualist semantics for "know"

1-2. The slogan debugged

"*Know* is just like *always*, except...

i. "know" takes an additional subject argument for the knower,
ii. while "always" quantifies over a domain constrained by fact, the domain of "know" is constrained by evidence,
iii. "know" involves additional requirements beyond that of the quantitative comparison.

4. A sketch of a contextualist semantics for "know"

3. Tripartite structure

Basic tripartite structure:
[Everyone][who came][had a good time]
[Quantifier][Restrictor][Scope]

Distinguishing implicit and explicit restrictors:
[Every [one]][who came][had a good time]
[Q[I-restrictor]][E-restrictor][S]

Distinguishing lexical and contextual restrictors:
[Every [one][*C*]][who came][had a good time]
[Quantifier[L-restrictor][C-restrictor]][E-restrictor][S]

4. A sketch of a contextualist semantics for "know"

4. Kratzer's thesis

Possible situations are mereologically ordered (via $\leq$ on S); possible worlds are maximal possible situations (the world of s is w_s). Propositions are sets of possible situations. (We will not assume that propositions expressed by sentences are persistent.)

$[\![\textit{Claire stole the diamonds}]\!] = \lambda s.\ \textit{Claire steals the diamonds}\ (s)$

$[\![(\text{when})\ \textit{Claire is in Paris}]\!] = \lambda s.\ \textit{Claire is in Paris}\ (s)$

4. A sketch of a contextualist semantics for "know"

5. Berman's thesis

When Q is an A-quantifier QRS says that Q-many R situations are part of an S situation. R (and thus QRS) is sensitive to context. (We will not assume that either that A-quantification is over minimal situations.)

$[\![always]\!]^c = \lambda E \lambda P \lambda s$.for all s' such that s' is compatible with the facts in the world of s and C and E there is an $s' \leq s''$ such that C and E and P

First pass:

$[\![know]\!]^c = \lambda E \lambda P \lambda x \, \lambda s$.for all s' such that s' is compatible with x' evidence in s and C and E there is an $s' \leq s''$ such that C and E and P

4. A sketch of a contextualist semantics for "know"

5. Berman's thesis

def.: *P* p-entails *Q* iff very situation where *P* is true is part of a situation where both *P* and *Q* are true.

$[\![always]\!]^c = \lambda E \lambda P \lambda s.\{\underline{\text{the facts of the world of}}\ s, C, E\}$ p-entail P

First pass:

$[\![know]\!]^c = \lambda E \lambda P \underline{\lambda x}\ \lambda s.\{\underline{x\text{'s evidence in}}\ s, C, E\}$ p-entail P

4. A sketch of a contextualist semantics for "know"

6. Hamblin's thesis

Questions are sets of contextually available alternatives. An alternative of a *wh*-question is a proposition expressible by a sentence where the *wh*-word is replaced by an expression of the lowest possible type (modulo changes in word order).

$[\![\textit{who stole the diamonds}]\!]^c = \{[\![\textit{Claire stole the diamonds}]\!],$
$[\![\textit{Desire stole the diamonds}]\!],[\![\textit{Eleanor stole the diamonds}]\!]\}$

$[\![\textit{what did Claire steal}]\!]^c = \{[\![\textit{Claire stole the diamonds}]\!],$
$[\![\textit{Claire stole the rubies}]\!],[\![\textit{Claire stole the emeralds}]\!]\}$

4. A sketch of a contextualist semantics for "know"

7. von Fintel's thesis

The restrictor of an A-quantifier is anaphoric to the current question; the value of the restrictor is constrained by the union of the alternatives.

$s \in \cup [\![\textit{who stole the diamonds}]\!]^c = [\![\textit{someone stole the diamonds}]\!]^c(s)$

$s \in \cup [\![\textit{what did Claire steal}]\!]^c = [\![\textit{Claire stole something}]\!]^c(s)$

4. A sketch of a contextualist semantics for "know"

8. Paraphrases

Claire always steals the diamonds.

(*Who*) Always when someone steals the diamonds, it's Claire.

(*What*) Always when Claire steals something, it's diamonds.

Ann knows that Claire stole the diamonds.

(*Who*) Ann knows that when someone stole the diamonds, it was Claire.

(*What*) Ann knows that when Claire stole something, it was diamonds.

Suppose there were in fact many diamond thefts in the past in which Claire was not involved. This makes the first sentence false in the (*Who*) context but not the second.

The reason is that presumably only one diamond theft is compatible Ann's evidence. The difference is encoded through tense.

4. A sketch of a contextualist semantics for "know"

9. The non-evidential aspect of knowledge

(*Relevant alternatives theory of knowledge*) To know is to have evidence that eliminates the relevant alternatives, and to form a true belief on this basis.

First pass:

$[\![know]\!]^c = \lambda E \lambda P \lambda x\ \lambda s.\{x$'s evidence in s, C, $E\}$ p-entail P

Second (*and final*) *pass*:

$[\![know]\!]^c = \lambda E \lambda P \lambda x\ \lambda s.\{x$'s evidence in s, C, $E\}$ p-entail P, and C, and x believes P given C and E on the basis of her evidence in s

5. Contrastivism or comparativism?

1. Contrastivism

"...there is no such thing as knowing that *p*, unless one clarifies: *rather than what*?" (Schaffer 1995: 235)

It might seem that whenever the domain of the question is surveyable knowledge ascriptions have a contrastive paraphrase: in the (*Who*) case Ann claims to know that Claire, rather than Desire or Eleanor stole the diamonds; in the (*What*) case Ann claims to know that Claire stole the diamonds, rather than the rubies or the emeralds.

5. Contrastivism or comparativism?

2. Modified theft case

(*Who'*) Claire and Desire have stolen the diamonds. Ann and Ben are wondering who stole the diamonds, and Ann finds Claire's fingerprints all over the safe. So Ann says: "I know that Claire stole the diamonds."

(*What'*) Claire has stolen the diamonds and the emeralds. Ann and Ben are wondering what Claire stole, and Ann finds Claire's fingerprints all over the safe. So Ann says: "I know that Claire stole the diamonds."

5. Contrastivism or comparativism?

3. Non-exclusivity

Hamblin's semantics for questions assumes that alternatives are exclusive. But this is not obligatory.

$[\![\textit{who stole the diamonds}]\!]^c = \{[\![\textit{Claire stole the diamonds}]\!],$
$[\![\textit{Desire stole the diamonds}]\!],[\![\textit{Eleanor stole the diamonds}]\!]\}$

$[\![\textit{who stole the diamonds}]\!]^c = \{[\![\textit{Claire stole the diamonds}]\!],$
$[\![\textit{Desire stole the diamonds}]\!],[\![\textit{Eleanor stole the diamonds}]\!],$
$[\![\textit{Claire and Desire stole the diamonds}]\!],$
$[\![\textit{Claire and Eleanor stole the diamonds}]\!],$
$[\![\textit{Desire and Eleanor stole the diamonds}]\!],$
$[\![\textit{Claire and Desire and Eleanor stole the diamonds}]\!]\}$

5. Contrastivism or comparativism?

4. Formulation

(*Comparativism*) Knowledge ascriptions involve a comparison between two propositions, one explicitly given, one (in part) contextually supplied.

(*Contrastivism*) Knowledge ascriptions involve a comparison between two *incompatible* propositions, one explicitly given, one (in part) contextually supplied.

6. Some evidence

1. Focus: the puzzle

(*WhoFocus*) Claire has stolen the diamonds. Ann finds Claire's fingerprints all over the safe. So Ann says to Ben: "I know that CLAIRE stole the diamonds."

(*WhatFocus*) Claire has stolen the diamonds. Ann finds Claire's fingerprints all over the safe. So Ann says to Ben: "I know that Claire stole THE DIAMONDS."

"Know" associates with focus. This is explained if we follow von Fintel (1994) in assuming that association with focus (at least in this case) is a matter of question-sensitivity. The focus identifies a congruent question which must be accommodated (unless it is already the current question).

6. Some evidence

1. Focus: the explanation

I know that $[\text{Claire}]_F$ stole the diamonds

1. Given congruence, we know that Ann's utterance was felicitous only if the question under discussion was "Who stole the diamonds?"
2. We (charitably) assume that Ann's utterance was felicitous, and so that Ann and Ben must have been wondering about who stole the diamonds.
3. Setting aside the non-evidential component what Ann says is – roughly – that given that someone (among the contextually salient alternatives) stole the diamonds her evidence entails that Claire stole the diamonds.
4. This seems true.

6. Some evidence

1. Focus: the explanation

I know that Claire stole [the diamonds]$_F$

1. Given congruence, we know that Ann's utterance was felicitous only if the question under discussion was "What did Claire steal?"
2. We (charitably) assume that Ann's utterance was felicitous, and so that Ann and Ben must have been wondering about what Claire stole.
3. Setting aside the non-evidential component what Ann says is – roughly – that given that Claire stole something (among the contextually salient alternatives) her evidence entails that Claire stole the diamonds.
4. This seems false.
5. But since uncharitable to interpret Ann as speaking falsely and we derived this via a charitable assumption we may want to reconsider whether that assumption was correct.

6. Some evidence

2. Conditionals: the puzzle

(*KnowCards*) Ann and Ben are playing poker, and Frank is watching. Frank circles behind Ann and sees that she holds a pair of kings. He thinks: “If Ben is holding a pair of queens Ann knows she will win”. So he circles behind Ben and sees that Ben is indeed holding a pair of queens. So he thinks: “Ann doesn’t yet know that she will win, but she will win.”

(*ThrillCards*) Ann and Ben are playing poker, and Frank is watching. Frank circles behind Ann and sees that she holds a pair of kings. He thinks: “If Ben is holding a pair of queens Ann is thrilled she will win”. So he circles behind Ben and sees that Ben is indeed holding a pair of queens. So he thinks: “Ann is not yet thrilled that she will win, but she will win.”

6. Some evidence

2. Conditionals: the explanation

It is typically hard to interpret “know” in the consequent of a conditional *in situ*. This is not so for many other propositional attitudes. And it isn’t so for “know” either if the resulting interpretation is pragmatically odd.

This is expected if we the function of if-clauses in knowledge ascription (but not necessary in all propositional attitude ascriptions) is to provide the explicit restrictor clause and if we assume that covert A-quantifiers show up in logical from as a result of a repair mechanism.

Ann knows [(if) Ben is holding a pair of queens][Ann will win]

(Must) [(if) Ann will win [Ann knows [ ][Ann will win]

6. Some evidence

3. Modals: the puzzle

Ann knows that Claire must have stolen the diamonds.

Ann knows that Claire stole the diamonds.

These two sentences are equivalent (relative to the same context of utterance). On our theory this is so if their quantificational components and basing components are equivalent. The latter is satisfied if Ann believes that Claire must have stolen the diamonds on the basis of her evidence just in case she believes the Claire stole the diamonds on the basis of her evidence. This seems correct.

6. Some evidence

3. Modals: explanation

Ann knows that Claire must have stolen the diamonds.

Ann knows that Claire stole the diamonds.

The rest is easy - all we need is the assumption that the embedded epistemic modal quantifies over the same domain as the embedding attitude verb.

Ann's evidence p-entails that Claire must have stolen the diamonds iff
Ann's evidence p-entails that Ann's evidence p-entails that Claire stole the diamonds iff
Ann's evidence p-entails that Claire stole the diamonds.

7. Conclusion

i. Knowledge ascriptions are context-sensitive because they are sensitive to the question under discussion.
ii. The analogy between “know” and “always” suggest comparativism – a particular version of contextualism.
iii. Semantic comparativism can be developed within a familiar semantic framework for A-quantification.
iv. But “know” is not an A-quantifier – only its evidential aspect is quantificational.

the end

"Am I to understand that my proposal is greeted with some skepticism?"