

## Antonymy and verbs of cognitive attitude: When *know* is the opposite of *think* and *believe*

Gloria Cappelli  
University of Pisa



## Some questions

- What is the opposite of *know*?
- What is the opposite of *think*?
- Does one even exist?

Test: no straightforward answer or universal agreement.



## A simple test

30 native speakers of AmE  
23 native speakers of BrE  
7 native speakers of English (variety not indicated)

They were asked to provide the opposites for a list of words: adjectives (e.g. hot, tall, happy, etc.) adverbs (e.g. fast, kindly, etc.) and verbs (e.g. live, stand up, believe, think, know, etc.)



## Some statistical data

Hot	Cold	100%
White	Black	90%
Big	Small	60%
Think	Don't think	30%
Think	Know	25%
Think	Doubt	10%

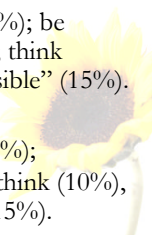


## Informants' answers

Think  $\iff$  don't think (30%); know (25%); feel (5%); doubt (10%); believe (5%), no answer or "not possible" (25%).

Know  $\iff$  don't know (50%); suppose (5%); be ignorant of (15%); guess (5%); think (10%), no answer or "not possible" (15%).

Believe  $\iff$  doubt (40%); don't believe (20%); disbelieve (5%); know (10%); think (10%), no answer or "not possible" (15%).



## However...

"Wow, do you really think so?" I fished. "**I don't think so, I know so!**" was this geniuses reply.  
<http://mitchfatel.com/iournal/iournal12.html>

— Oh you're smiling now, dude, but in a couple of minutes that smile will be long gone. It ends here. Right now.

— You think so?

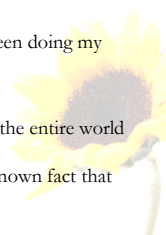
— **I don't think so. I know so.** You see, I've been doing my research.

[http://www.infoware.org/omnivore/archives/hot\\_sauce.html](http://www.infoware.org/omnivore/archives/hot_sauce.html)

Tomas: "Let me get this straight. You think that the entire world is getting dumber?"

Ross: "No, **I don't think so. I know so.** It's a known fact that the world is evolving into chaos."

<http://atp.cw/2a=4&b=6wtrpx>



## More examples

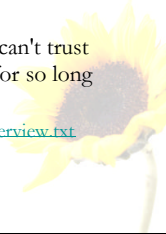
PN: How would I know?

KK: Of course you would know. It's so easy to judge a man by just looking at him. You look at these film people and you instantly know they're rogues.

PN: I believe so.

KK: **I don't believe so. I know so.** You can't trust them an inch. I have been in this rat race for so long that I can smell trouble from miles afar.

<http://www.geocities.com/~sm0e/R-kishoreInterview.txt>



## Possible explanation

Occurrence of *know* and *think/believe* in a particular syntactic pattern.

Pragmatic and contextual factors can favour the antonymic construal.

Fellbaum (1995), Jones (2002), Murphy (2003)  
“y not x”, “not x but y”



## Other considerations

*Know* is inserted in a **marked structure** (non-standard, normally not possible):

I \_ so



## Other interesting questions

1. **Why** is *know* commonly found in opposition with *think* and – much more rarely – with *believe* but not with other verbs of cognitive attitude (e.g. *suppose*, *assume*, *reckon*, *presume*, *guess*, etc.)?



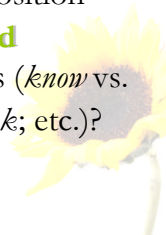
## Other interesting questions

2. **What kind of lexical semantic relation** is construed in this case?
  - Opposition? Upper-bound interpretation of negation?
  - Are the available ontologies for this opposition applicable?



## Other interesting questions

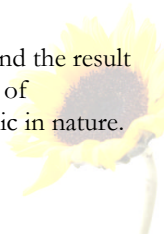
3. What is the relationship between these oppositions (*know* vs. *think*; *know* vs. *believe*) and the opposition between the **affirmative and negated forms** of the verbs (*know* vs. *don't know*; *think* vs. *don't think*; etc.)?



**Question 1:**  
**why know, think and believe**

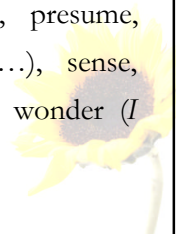
**Theory of lexical complexity**  
 (Bertuccelli Papi 2003; Bertuccelli Papi and Lenci 2007)

Meaning is highly context-sensitive and the result of variable combinations of portions of conceptual information, encyclopaedic in nature.



**Question 1:**  
**why know, think and believe**

assume, believe, bet, conjecture, consider, doubt, expect, fancy, feel, figure, gather, guess, imagine, judge, know, presume, reckon, see (*I can't see that...*), sense, suppose, surmise, think, trust, wonder (*I shouldn't wonder*)



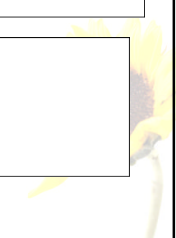
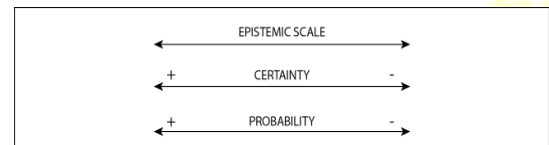
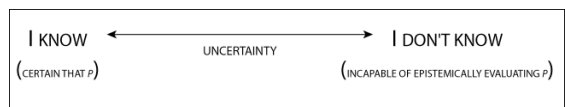
**Question 1:**  
**why know, think and believe**

Verbs of cognitive attitude:  
 complex dynamic micro-systems lexicalizing a low number of dimensions which are gradable and very abstract in nature.

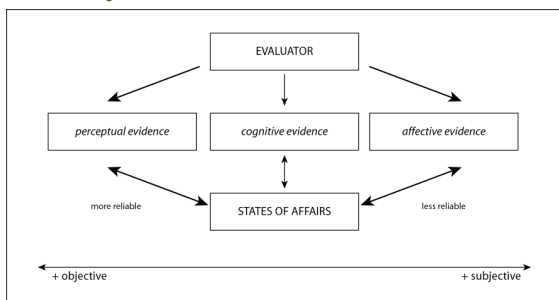
They lexicalize the **interplay of epistemicity and evidentiality**.



**Question 1:**  
**why know, think and believe**



**Question 1:**  
**why know, think and believe**

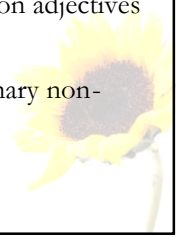


**Question 1:**  
**why know, think and believe**

**Binarity for binarity's sake**

Verbs of cognitive attitude ≈ emotion adjectives

The contrast set is a case of non-binary non-canonical contrast.



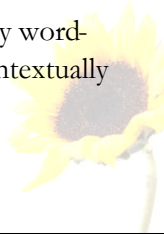
### Question 1:

#### why *know*, *think* and *believe*

#### Relation by Contrast – Lexical Contrast

(Murphy 2003)

“A lexical contrast set includes only word-concepts that have all the same contextually relevant properties but one”



### Question 1:

#### why *know*, *think* and *believe*

- *Believe-know*: opposition is (pragmatically) created

**I don't believe so. I know so.** You can't trust them an inch. I have been in this rat race for so long that I can smell trouble from miles afar

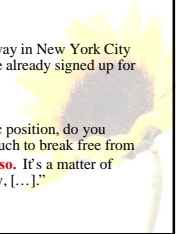
- *Think-know*: two opposite effects

- **Opposition**

“A: d'you think Dr. Luby will lead a theater trip to Broadway in New York City again this year?” “B: **I don't think so. I know so!** and I've already signed up for it.”

- **Intensification**

“At the risk of unnecessarily adding validity to the nihilistic position, do you REALLY think that black folks as an aggregate will do much to break free from our racial subordination?” [...] “**I don't think so. I know so.** It's a matter of putting in work, individual by individual, family by family, [...]”



### Question 1:

#### why *know*, *think* and *believe*

- *Think-know*: two opposite effects

- **Opposition:**

- prototypical cognitive attitude meaning certainty vs. uncertainty

- **Intensification:**

- speaker's viewpoint --- upper-bound interpretation of negation (degree of certainty)



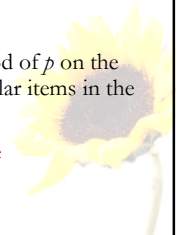
### Question 1:

#### why *know*, *think* and *believe*

**Foreground-background principle:** negation brings semantic dimension to the fore making it available for contrast.

*Believe* vs. *Know*

- Strong commitment towards the likelihood of *p* on the basis of some sort of evidence (most similar items in the contrast set)
- **Affective** vs. **objective, verifiable evidence**



### Question 1:

#### why *know*, *think* and *believe*

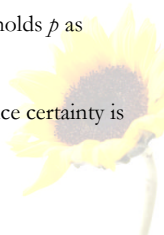
*Think* vs. *Know*

- Pragmatically-derived opposition

*Think*: **no evidentiality lexicalised**, evaluator holds *p* as generally possible but he is not certain.

vs.

*Know*: **evidence** to support the truth of *p*, hence certainty is entailed.



### Question 1:

#### why *know*, *think* and *believe*

**Implied certainty vs. uncertainty** (*know* vs. *think*) and **objectivity vs. subjectivity** (*know* vs. *believe*) offer the basis for the creation of opposition.

The **other verbs of cognitive attitude** represent the **semantic middle ground** and contrast on more than one property. **Near-opposites** at best.



**Question 2:**  
**What kind of lexical relation?**

**Complex opposition** (Cruse 1986, Murphy 2003)

Similar to *winter – summer* or *heaven – hell* similarity runs deep in the complex antonymic pairs of verbs of cognitive attitude.



**Question 2:**  
**What kind of lexical relation?**

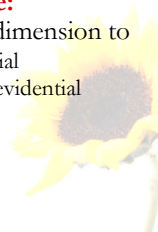
In given contexts the complexity of the opposition is reduced.

**Foreground-background principle:**

Focus is brought upon the relevant dimension to be contrasted by negation (i.e. evidential information; implicatures derivable from evidential information)

**Gradable complementaries**

(*certain* vs. *uncertain*; *objective* vs. *subjective*)



**Question 3:**  
**different verbs vs. negated forms**

*Think/ don't think*

*Believe/ don't believe*

*Know/ don't know*

All possible (and provided by informants as options) but...



**Question 3:**  
**different verbs vs. negated forms**

*Know* vs. *think* = contrast on the presence vs. absence of evidence and therefore on the entailment about the **evaluator's certainty** about the likelihood of *p* (opposition or intensification effect)

*Know* vs. *believe* = contrast on the entailment about the **evaluator's certainty** about the likelihood of *p* on the basis of the type of evidence (objective vs. subjective)



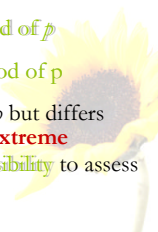
**Question 3:**  
**different verbs vs. negated forms**

*I think* that he will come vs. *I don't think* that he will come  
*I believe* that he will come vs. *I don't believe* that he will come  
*I know* that he will come vs. *I don't know* if he will come

*Think* vs. *don't think* = contrast on the **likelihood of p**

*Believe* vs. *don't believe* = contrast on the **likelihood of p**

*I don't know whether p* entails *I am not certain that p* but differs from *I think that p*: **no preferred reading. Extreme negative epistemological attitude**: **impossibility** to assess the **likelihood of p**



**Question 3:**  
**different verbs vs. negated forms**

*Know* has **two sets of antonyms**

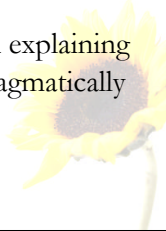
– Similar to adjectives of emotion  
(*happy/ sad*; *happy/ unhappy*)



## Conclusions

**Theory of lexical complexity** explains in a principled way context-sensitive meaning construal.

The **RC-LC principle** succeeds in explaining this non-canonical, quite rare, pragmatically created complex opposition.



## Thank you

Gloria Cappelli

Dipartimento di Anglistica  
Università di Pisa

Email: [cappelli@cli.unipi.it](mailto:cappelli@cli.unipi.it)  
<http://www.gloriacappelli.it/>

