

Projection pilots

The goal of these pilots was to identify a suitable response paradigm for exploring the projection variability of various types of (projective) content.

Pilot 1: “Is Debby sure that p?”

This pilot originally was supposed to be a variant of the paradigm I used in June 2015. Instead of using negation or *perhaps* as an embedding, I used questions (based on a suggestion by David). I also changed the question from *Does Debby think that p?* to *Is Debby sure that p?*, for the following reasons:

- Having the question be “Does Debby think that...?” didn’t seem like such a good idea: Debby can think that p and still ask about it, i.e. I wasn’t sure that main clauses would receive a “no” answer.
- I then entertained making the question “Does Debby know that...?” because if Debby knows p then she won’t ask about it. But the question didn’t sound natural, so I went for “Is Debby sure that...?”.
- I couldn’t figure out how to do expressive content in this paradigm, so I took it out. (*Did that idiot Larry go to the store to get more beer?*)

Instructions: Imagine you are at a party. You walk into the kitchen and overhear Debby, the party host, ask a question, like this one:

Debby: *Does Frank's brother own a dog?*

We ask you to judge what Debby is sure of, given what she asks. For example, we might ask you to judge whether Debby is sure that Frank has a brother. (Presumably she is sure that he does, given her question.)

Or we might ask you to judge whether Debby is sure, given what she asks, that Frank’s brother owns a dog. (Presumably Debby isn't sure about that.)

There are 12 questions total.

To make sure you are paying attention, we have included some questions for which we know the right answer. If you read Debby’s questions carefully, you will definitely get those right.

Stimuli:

1. **Main clause:** Did Mary bring a fruit salad? / Is Debby sure that Mary brought a fruit salad?
2. **NRRC:** Is Jack, who works for a bank, giving out investment tips? / Is Debby sure that Jack works for a bank?

3. **Change of state implication of “stop”**: Did Larry stop dancing? / Is Debby sure that Larry has been dancing?
4. **Complement of “discover”**: Did Paula discover that her husband is cheating? / Is Debby sure that Paula’s husband is cheating?
5. **Main clause**: Does Sue, a teacher, work on Sundays? / Is Debby sure that Sue works on Sundays?
6. **VP implication of “stupid”**: Was Sam stupid to post his social security number on Facebook? / Is Debby sure that Sam posted his social security number on Facebook?
7. **Nominal appositive**: Is Phillip, a yoga teacher, wearing sweat pants? / Is Debby sure that Phillip is a yoga teacher?
8. **Main clause with manner adverb**: Did Eve dance terribly? / Is Debby sure that Eve danced?
9. **Complement of “annoyed”**: Is Tamara annoyed that the pizza is gone? / Is Debby sure that the pizza is gone?
10. **Presupposition of “again”**: Is Carl getting drunk again? / Is Debby sure that Carl got drunk before?
11. **Possessive implication**: Is Susi flirting with her neighbor? / Is Debby sure that Susi has a neighbor?
12. **Scalar implicature**: Is the soup is warm? / Is Debby sure that the soup is not hot?

I mistakenly coded stimulus 5 (main clause) as an assertion: *Sue, a teacher, runs three times a week*. Turkers were asked whether Debby is sure that Sue runs three times a week. (Expected answer is yes.)

30 participants:

- Every Turker gave between 4 and 10 projective answers (for a total of 12 stimuli)
- Wrong answers:
 - 1 Turker gave “yes” response to main clause stimulus 1 (interrogative).
 - 1 Turker gave a “no” response to stimulus 5, which was a main clause assertion (not question, see coding error comment above).

“yes” responses (projection) were coded as ‘1’; “no” responses (no projection) were coded as ‘0’.

Results: (based on the data from all 30 Turkers)

29	97%	again, main clause assertion
28	93%	NRRC, nom app, complement of annoyed
26	87%	VP of stupid
23	77%	pre-state of stop, possNP
22	73%	complement of discover
17	57%	main clause with manner adverb
1	3%	main clause interrogative, scalar implicature

Pilot 2: “Is Debby certain that p?”

Projection pilot 1 used the question “Is Debby sure that p?”. The AI experiment I ran used “Are you sure?” and the response “Yes, I am sure that p”, and some people in the audience at Köln and Oxford thought that “sure” couldn’t just target AI content but also NAI content (though the results of the experiments prove them wrong). Furthermore, the “Are you sure?” AI pilot got much lower numbers than the other AI pilots (on questions, though). So, the goal of this pilot was to see whether similar projection results are obtained with “Is Debby certain that p?” and “Is Debby sure that p?”, i.e. whether it matters that “sure” is used.

Instructions: Imagine you are at a party. You walk into the kitchen and overhear Debby, the party host, ask a question. Here's an example:

Debby: *Does Frank's brother own a dog?*

Your job is to judge what Debby is certain of, given what she asks. For example: Given what Debby asks, is she certain that Frank has a brother? (You answer "Yes" or "No".) Or: Is Debby certain that Frank's brother owns a dog? (Again, you answer "Yes" or "No".)

There are 14 questions total that we ask you to judge.

To make sure you are paying attention, we have included some questions for which we know the right answer. If you read Debby's questions carefully, you will definitely get those right.

Stimuli:

1. **Main clause:** Did Mary bring a fruit salad? / Is Debby certain that Mary brought a fruit salad?
2. **NRRC:** Is Jack, who works for a bank, giving out investment tips? / Is Debby certain that Jack works for a bank?
3. **Change of state implication of “stop”:** Did Larry stop dancing? / Is Debby certain that Larry has been dancing?
4. **Complement of “discover”:** Did Paula discover that her husband is cheating? / Is Debby certain that Paula’s husband is cheating?
5. **Main clause:** Does Sue, a teacher, run three times a week? / Is Debby certain that Sue runs three times a week?
6. **VP implication of “stupid”:** Was Sam stupid to post his social security number on Facebook? / Is Debby certain that Sam posted his social security number on Facebook?
7. **Nominal appositive:** Is Phillip, a yoga teacher, wearing sweat pants? / Is Debby certain that Phillip is a yoga teacher?
8. **Main clause with manner adverb:** Did Eve dance terribly? / Is Debby certain that Eve danced?

9. **Complement of “annoyed”:** Is Tamara annoyed that the pizza is gone? / Is Debby certain that the pizza is gone?
10. **Presupposition of “again”:** Is Carl getting drunk again? / Is Debby certain that Carl got drunk before?
11. **Possessive implication:** Is Susan flirting with her neighbor? / Is Debby certain that Susan has a neighbor?
12. **Complement of “glad”:** Is Raul glad that he left his wife at home? / Is Debby certain that Raul left his wife at home?
13. **Cleft:** Was it Jack who brought a coat? / Is Debby certain that Jack is the only person who brought a coat?
14. **Scalar implicature:** Is the soup is warm? / Is Debby certain that the soup is not hot?

Participants: 30 Turkers

- Every Turker gave between 6 and 11 “no” responses (out of 14 possible).
- Nobody gave projection response to main clause 1 (Q1)
- Nobody gave projection response to main clause 2 (Q2)

Results:

30	100%	NRRC, C of annoyed, again, possNP
28	93%	nomapp, C of glad
26	87%	pre-state stop, VP of stupid
23	77%	manner with main clause
16	53%	C of discover
5	17%	cleft
1	3%	scalar impl
0	0%	main clause1, main clause2

Pilot 3: “Does Debby think that p?”

The goal of this pilot was to see whether similar projection results are obtained with “Does Debby think that p?”.

Instructions: Imagine you are at a party. You walk into the kitchen and overhear Debby, the party host, ask a question. Here's an example:

Debby: *Does Frank's brother own a dog?*

Your job is to judge what Debby thinks, given what she asks. For example:
Given what Debby asks, does she think that Frank has a brother? (You answer "Yes" or "No".) Or: Does Debby think that Frank's brother owns a dog? (Again, you answer "Yes" or "No".)

There are 14 questions total that we ask you to judge.

To make sure you are paying attention, we have included some questions for which we know the right answer. If you read Debby's questions carefully, you will definitely get those right.

Stimuli:

1. **Main clause:** Did Mary bring a fruit salad? / Does Debby think that Mary brought a fruit salad?
2. **NRRC:** Is Jack, who works for a bank, giving out investment tips? / Does Debby think that Jack works for a bank?
3. **Change of state implication of “stop”:** Did Larry stop dancing? / Does Debby think that Larry has been dancing?
4. **Complement of “discover”:** Did Paula discover that her husband is cheating? / Does Debby think that Paula’s husband is cheating?
5. **Main clause:** Does Sue, a teacher, run three times a week? / Does Debby think that Sue runs three times a week?
6. **VP implication of “stupid”:** Was Sam stupid to post his social security number on Facebook? / Does Debby think that Sam posted his social security number on Facebook?
7. **Nominal appositive:** Is Phillip, a yoga teacher, wearing sweat pants? / Does Debby think that Phillip is a yoga teacher?
8. **Main clause with manner adverb:** Did Eve dance terribly? / Does Debby think that Eve danced?
9. **Complement of “annoyed”:** Is Tamara annoyed that the pizza is gone? / Does Debby think that the pizza is gone?
10. **Presupposition of “again”:** Is Carl getting drunk again? / Does Debby think that Carl got drunk before?
11. **Possessive implication:** Is Susan flirting with her neighbor? / Does Debby think that Susan has a neighbor?
12. **Complement of “glad”:** Is Raul glad that he left his wife at home? / Does Debby think that Raul left his wife at home?
13. **Cleft:** Was it Jack who brought a coat? / Does Debby think that Jack is the only person who brought a coat?
14. **Scalar implicature:** Is the soup is warm? / Does Debby think that the soup is not hot?

Participants: 30 Turkers

- Excluded one Turker who only responded “no”/0 to everything
- 16 gave “yes” response to main clause 1 (Q1)
- 14 gave “yes” response to main clause 2 (Q2)

Results (out of 29)

29	100%	NRRC, compl of discover, nomapp, compl of annoyed, again
28	97%	compl of glad
27	93%	pre-state stop, VP stupid, manner main
26	90%	possNP

18	62%	cleft
16	55%	main clause
14	48%	main clause (with app)
9	31%	scalar implicature

Comparison of results:

	Proj 1 “sure”	Proj 2 “certain”	NAI “asking”	NAI 1: What does “no” mean?	NAI 2: Is “wondering”	NAI 3: Are you sure?
possNP	77%	100%	97%	100%	100%	
C of annoyed	93%	100%	93%	97%	97%	78%
NRRC	93%	100%	100%	97%	93%	93%
C of glad		93%	97%		93%	73%
NomApp	93%	93%	100%	100%	90%	98%
Main clause w manner	57%	77%	93%	97%	90%	
again	97%	100%	93%	90%	87%	63%
VP of stupid	87%	87%	83%	90%	87%	23%
stop	77%	87%	87%	97%	80%	
C of discover	73%	53%	87%	70%	77%	45%
Cleft		17%	52%			
main clause1	97% ass	0%	0%	3%	7%	0%
main clause2	3% ques	0%	0%	10%	0%	0%