
Tomorrow is not always a day away

Non-utterance time
uses of 'tomorrow'

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Non-utterance time uses of ‘tomorrow’

Utterance time referent:

Athena is going to water my plants tomorrow.
I hope she does!

Non-utterance time referent:

Last week, Athena said that she would water my plants tomorrow, but she never did.

Non-UT examples in corpus data

Krause: Also listening last night, Dave Wiethop, news editor at the Fulton Sun. He [...] decided not to lead this morning's paper with the President's speech.

Wiethop: I played Bush pretty low because like I said, we didn't hear anything that we hadn't heard before. **If he said we were going to bomb Baghdad tomorrow morning, I think that might have been my lead story there.**

(PBS Newshour, taken from COCA)

Indexicality

Indexical: referring relative to the context of utterance and not to the circumstances of evaluation, the ‘actual and counterfactual situations with respect to which it is appropriate to ask for the extensions of a well-formed expression’ (Kaplan 1989).

Indexicals refer relative to the context parameter.

Anaphoricity

Anaphoric: referring relative to a discourse-given reference point.

?Jane will cook the next day.

On Tuesday Jane will go shopping, and she will cook the next day.

Indexical or anaphoric?

Indexical hypotheses

- **Free Indirect Discourse** effect
- **Shifty indexical**

Anaphoric hypotheses

- **Anaphoric to a time**
- **Anaphoric to a salient perspective**

Free Indirect Discourse

Free Indirect Discourse: a pragmatic convention in which a narrator takes on the perspective of a main character.

Mrs. Dalloway said she would buy the flowers herself.

For Lucy *had* her work cut out for her. The doors would be taken off their hinges; Rumpelmayer's men were coming. And then, thought Clarissa Dalloway, what a morning— fresh as if issued to children on a beach.

What a lark! What a plunge! For so it *had* always seemed to *her*, when, with a little squeak of the hinges, which *she* could hear now, *she had* burst open the French windows and plunged at Bourton into the open air.

(Mrs. Dalloway; Woolf 1925)

Free Indirect Discourse

Conventions of Free Indirect Discourse

- Tense and aspect are from the narrator's perspective
- 1st-person pronouns refer to the narrator
- Temporal and locative adverbials are relative to the protagonist
- Expressives, epithets, and other perspectival expressions are from the protagonist's point-of-view

(Banfield 1982; Eckardt 2015)

Indexical Shift

Indexical shift: when embedded under a speech or attitude verb, indexicals refer relative to the context parameter of the embedded context rather than the matrix context (Schlenker 2003; Quer 2005; Deal 2014; Anand & Nevins 2014).

Context: It is January 8th.

cinan cwu-ey Mary-ka nwuka nayil
last week-in Mary-NOM who-NOM tomorrow
ttenanta-ko malhayss-ni?
leave-C said-Q

‘Who did Mary say a week ago would leave on January 2nd/9th?’ (Park 2016)

Indexicality and quantificational binding

*Obama-ka malhal ttyaymyun manhun
Obama-NOM speaks when many

salamtul-i cikum paksuwuchinta.
people-NOM now clap

Intended:

‘When Obama speaks, many people clap now’ (Park 2016).

Anaphoricity and quantificational binding

Times

Every time it snows, my car is very icy **the next day**.

Perspectives (Barlew 2017)

Every woman was glad that her wayward child **came** to Christmas dinner.

Predictions of different analyses

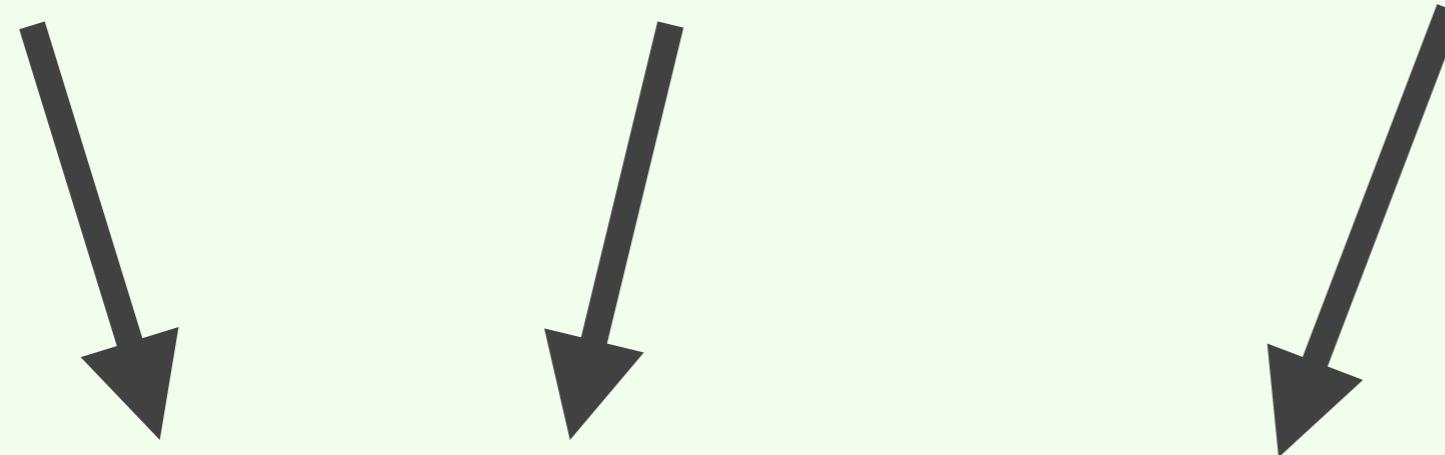
	1st-person pronouns	Unembedded	Quantificational binding
Free Indirect Discourse	X	✓	X
Shifty Indexical	✓	X	X
Time anaphoric	✓	✓	✓
Perspective anaphoric	✓	✓	?

Experiment 1: Establishing a baseline

3rd-person
subject

Speech
verb

Verb consistent with
either interpretation



Aidan said that he would
bring the keys {tomorrow / the next day}.

Experiment 1 item

Monday



Tuesday



Wednesday



Kate is buying a car from Aidan.

Rate the following sentence as a caption for the third panel:

Kate is worried because Aidan said that he would bring the keys {tomorrow / the next day/ Monday/ Tuesday}.

Experiment 1 design

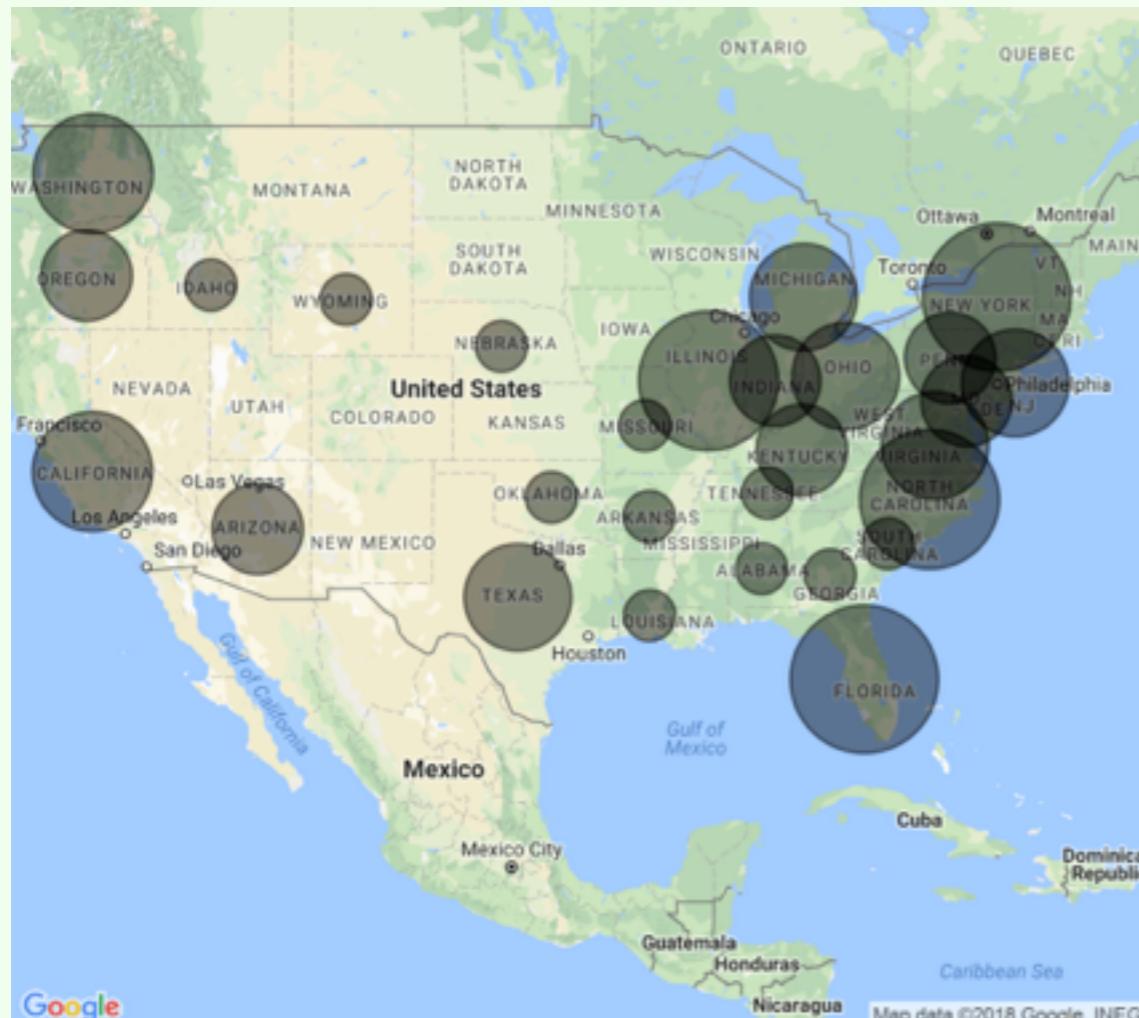
- Task: rate the target sentence as a caption for the third panel on a 7-point Likert scale
- 6 items in each of 4 conditions, for a total of 24
- Four conditions:
 - ❖ **True control**: day-of-week name for 2nd panel
 - ❖ **False control**: day-of-week name for 1st panel
 - ❖ **Anaphoric condition**: *the next day*
 - ❖ **Critical condition**: *tomorrow*
- Preregistered through the Open Science Foundation

Experiment 1 fillers

- Truth-conditionally true
- True but pragmatically ill-formed
- Truth-conditionally false

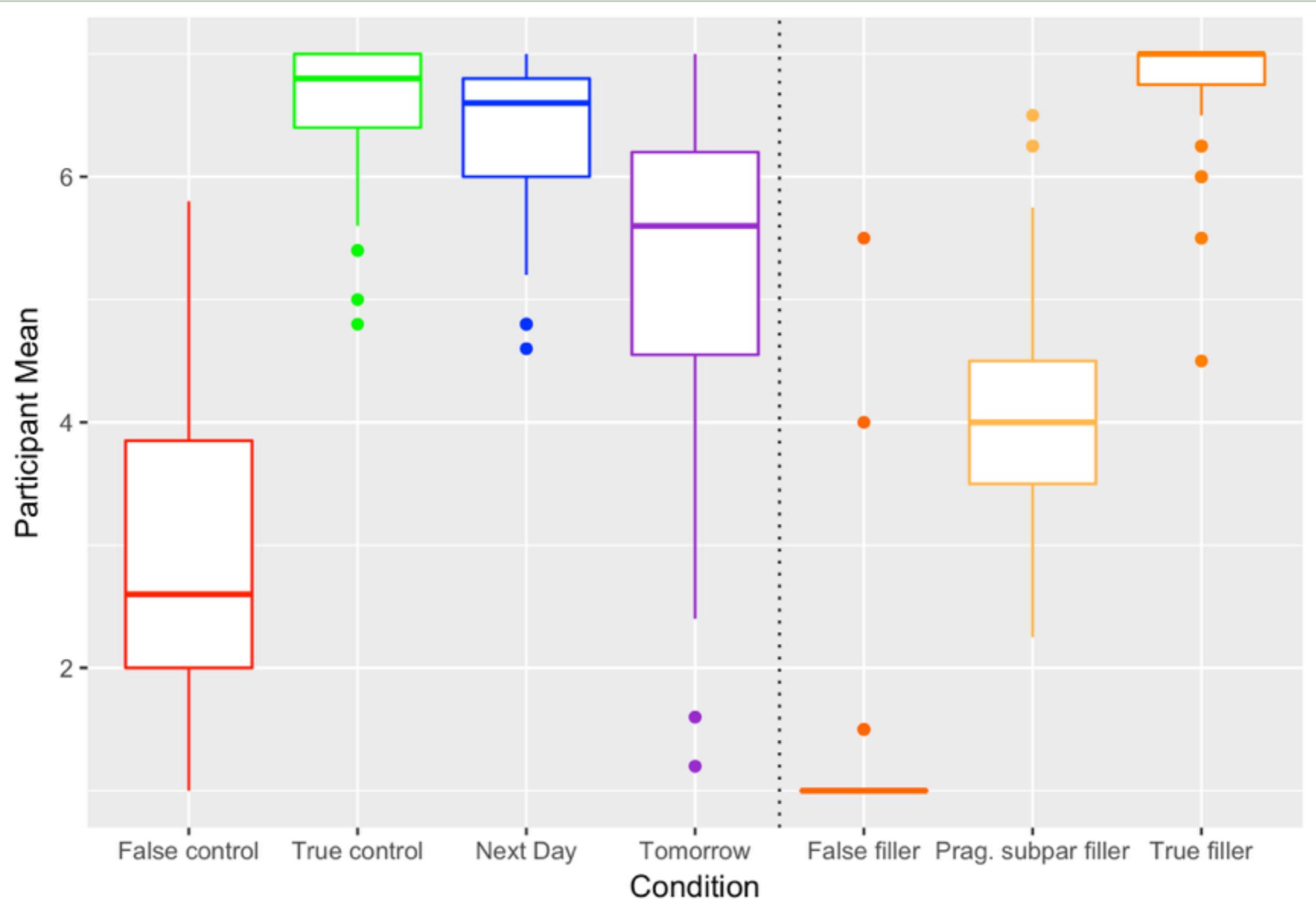
Participants

- Recruited on Amazon's Mechanical Turk Platform
- N=72
- Fairly diverse age and geographic spread



Age	N
18-25	5
25-35	31
35-45	17
45-55	12
55-65	5
65-75	2

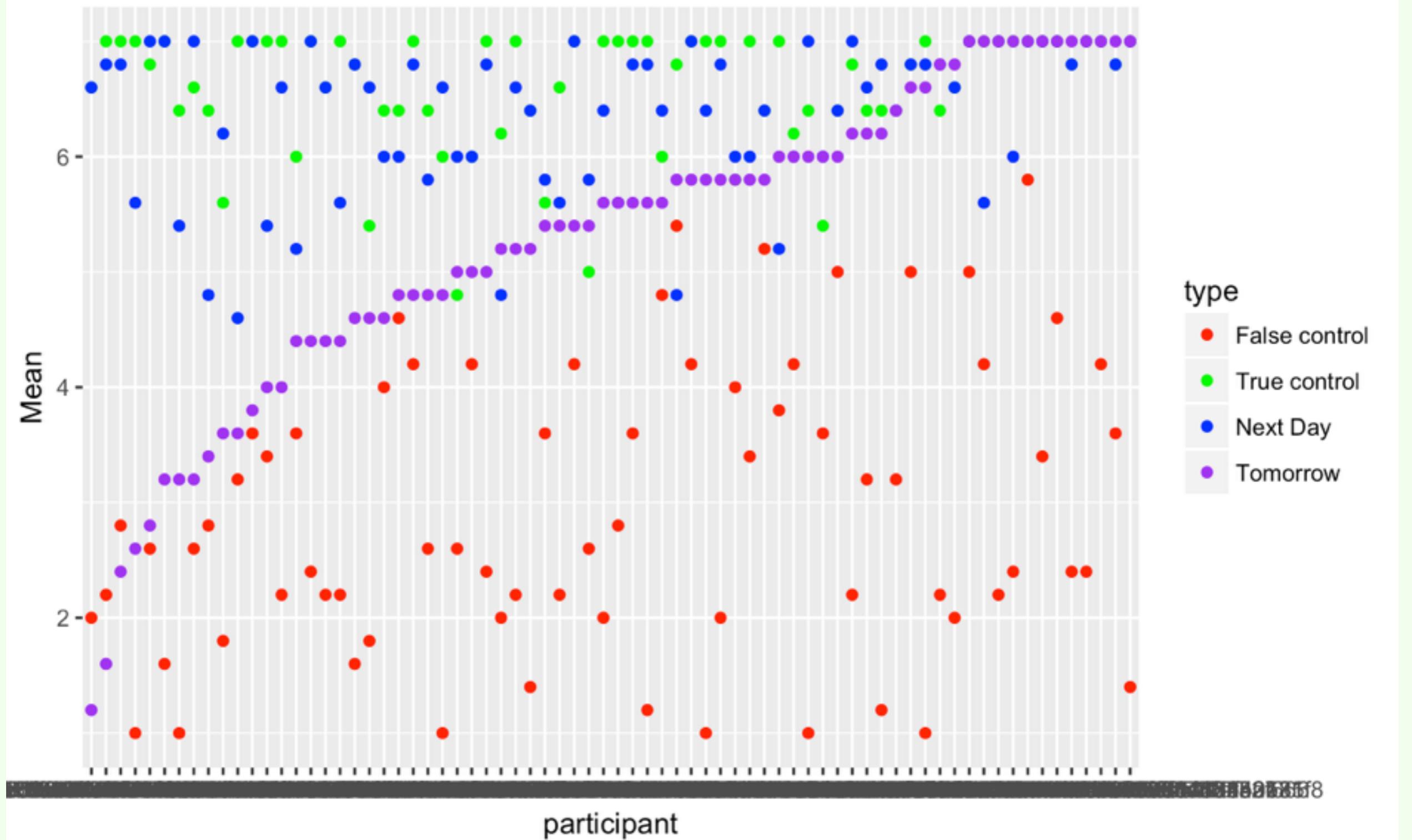
Exp. 1 Means by Condition



Exp. 1 Post-hoc Mixed Effects Analysis

Condition	$\hat{\beta}$	z	p
False control	-2.78(+/- 0.29)	-9.5	< 0.00001
True control	2.25(+/- 0.33)	6.74	< 0.00001
<i>the next day</i>	1.34(+/- 0.25)	5.45	< 0.00001
Pragmatically sub-par fillers	-1.53(+/- 0.27)	-5.59	< 0.00001

Exp. 1 Participant Means by Condition



Interpretation

For some speakers, non-utterance time interpretations of *tomorrow* are possible, at least in attitude contexts.

Some speakers do not accept non-UT *tomorrow*.

Even speakers who do accept non-UT *tomorrow* tend to rate it less highly than the temporal anaphoric expression *the next day*.

Experiment 1 item

Monday



Tuesday



Wednesday



Kate is buying a car from Aidan.

Rate the following sentence as a caption for the third panel:

Kate is worried because Aidan said that he would bring the keys {tomorrow / the next day/ Monday/ Tuesday}.

Experiment 2: Free Indirect Discourse

Temporal indexicals like *tomorrow* are known to receive non-utterance time interpretations in Free Indirect Discourse contexts, where they are interpreted relative to the *now* of the protagonist, rather than the narrator.

Are these non-utterance time uses of *tomorrow* simply due to Free Indirect Discourse?

Predictions of different analyses

	1st-person pronouns	Unembedded	Quantificational binding
Free Indirect Discourse	X	✓	X
Shifty Indexical	✓	X	X
Time anaphoric	✓	✓	✓
Perspective anaphoric	✓	✓	?

Experiment 2 item

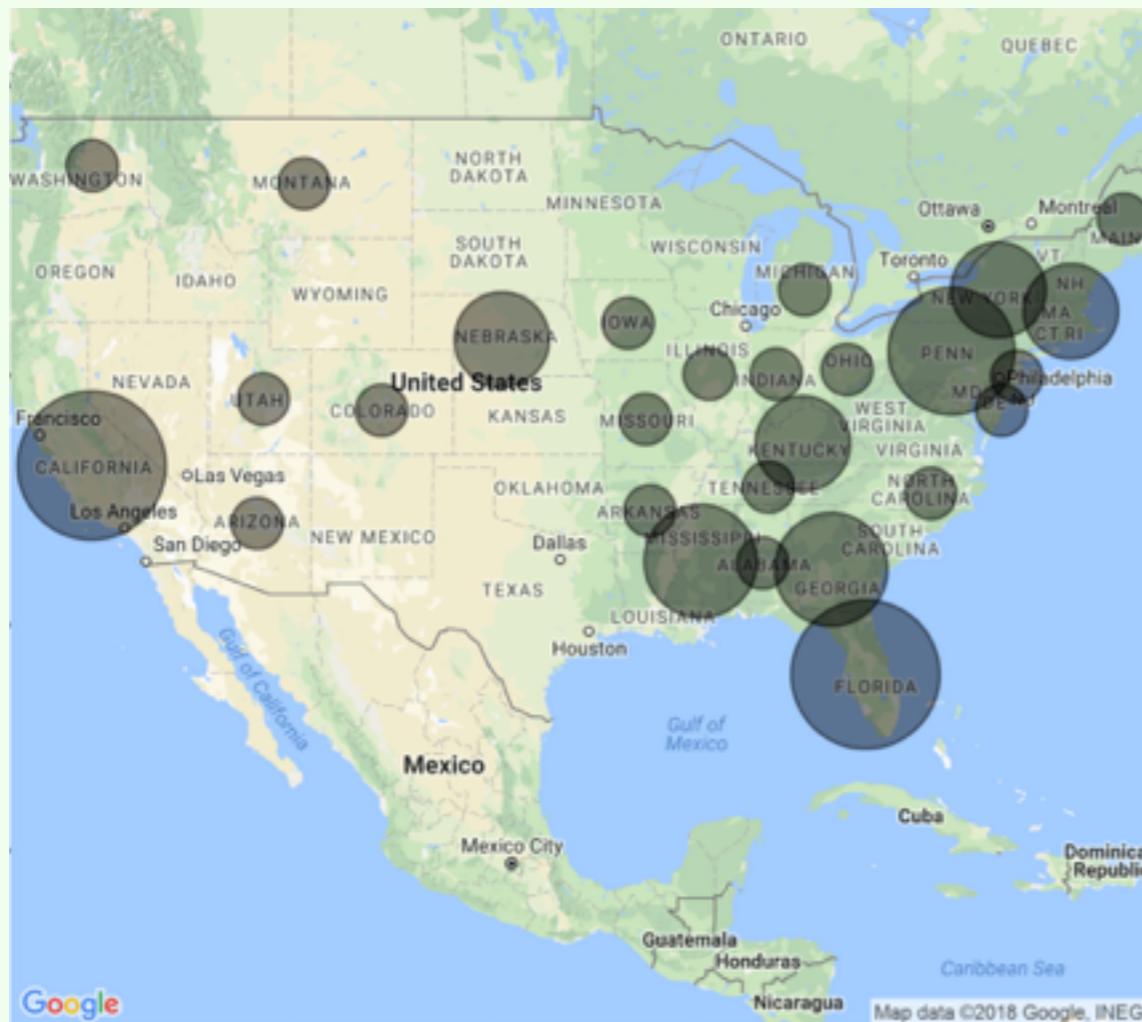


Rate the following sentence as a journal entry for the third day:

Kevin is angry because I said that I would water his plants {tomorrow / the next day/ Friday/ Saturday}.

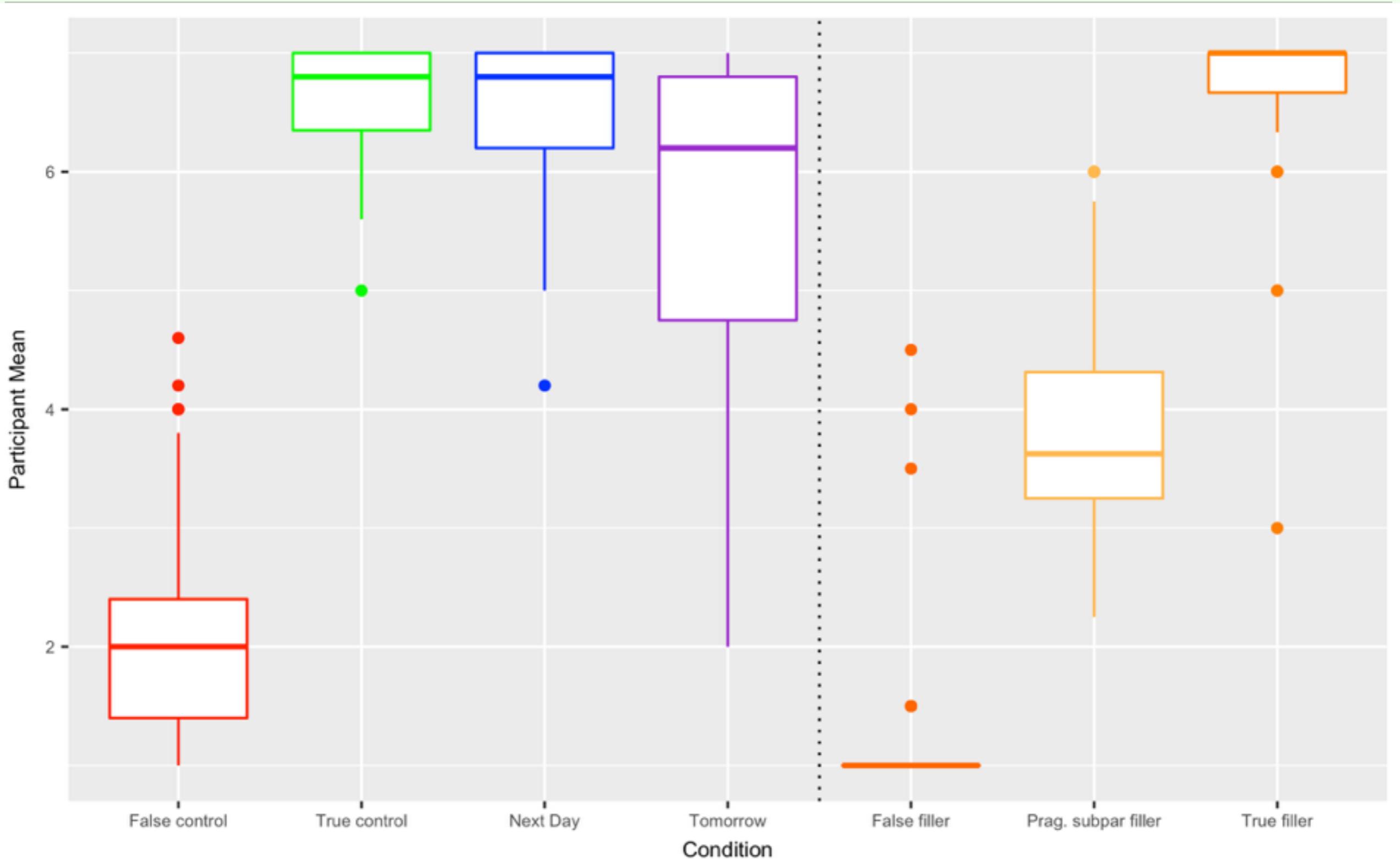
Exp. 2 Methods

- Same methods as Experiment 1
- Smaller number of participants (N=48)



Age	N
18-25	4
25-35	20
35-45	14
45-55	7
55-65	2
65-75	1

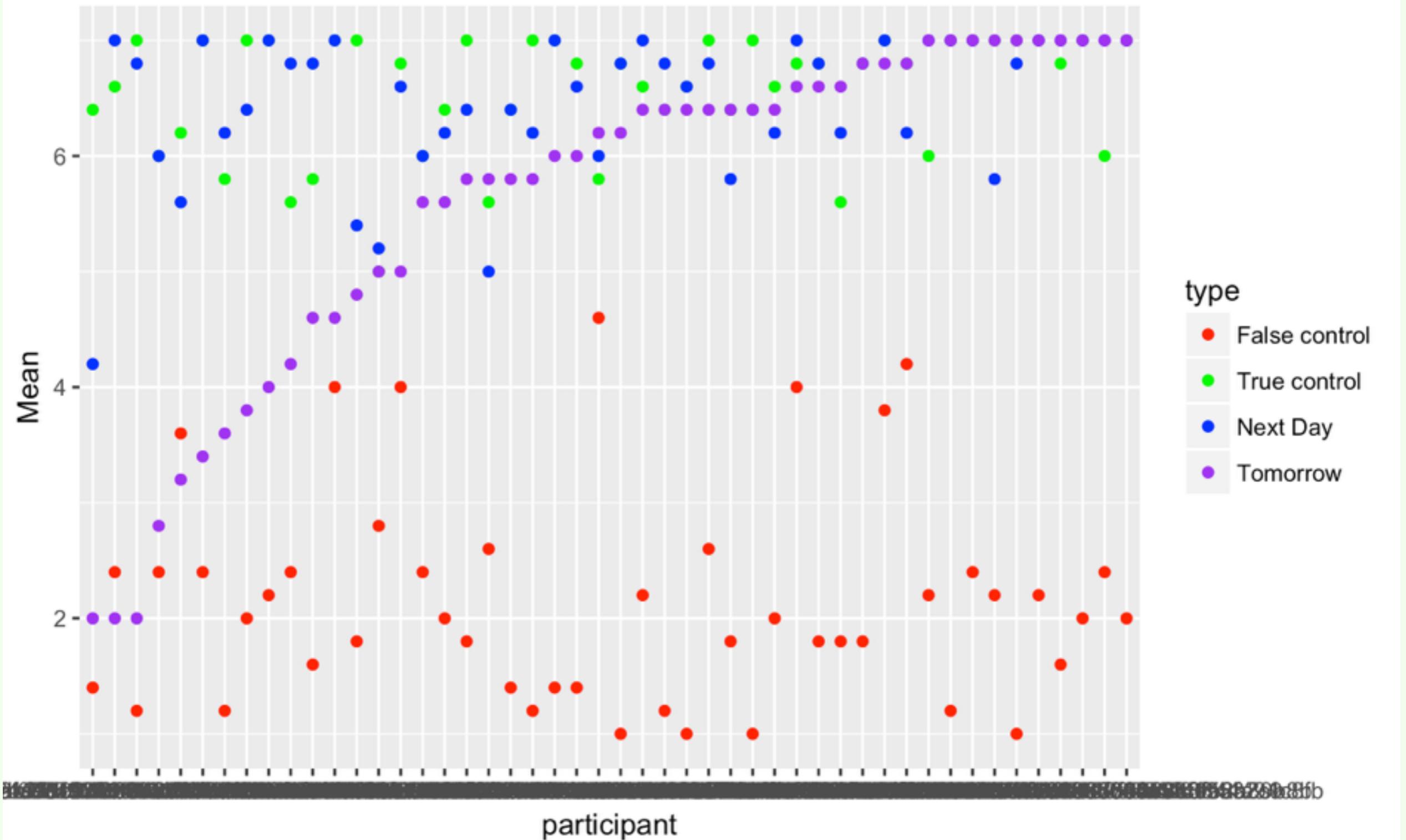
Exp. 2 Means by Condition



Exp. 2 Post-hoc Mixed Effects Analysis

Condition	$\hat{\beta}$	z	p
False control	-4.51(+/- 0.45)	-9.9	< 0.00001
True control	1.58 (+/- 0.42)	3.8	< 0.001
<i>the next day</i>	1.41(+/- 0.40)	3.6	< 0.001
Pragmatically sub-par fillers	-2.46(+/-0.39)	-6.4	< 0.00001

Exp. 2 Participant Means by Condition



Interpretation

The use of first-person pronouns does not affect ratings of non-utterance time instances of *tomorrow*, which shows that they are not due to Free Indirect Discourse effects.

Experiment 3: Indexical Shift

Perhaps non-UT interpretations of *tomorrow* are due to indexical shift, since all examples seen so far occur under attitude verbs.

Predictions of different analyses

	1st-person pronouns	Unembedded	Quantificational binding
Free Indirect Discourse	X	✓	X
Shifty Indexical	✓	X	X
Time anaphoric	✓	✓	✓
Perspective anaphoric	✓	✓	?

Experiment 3 item



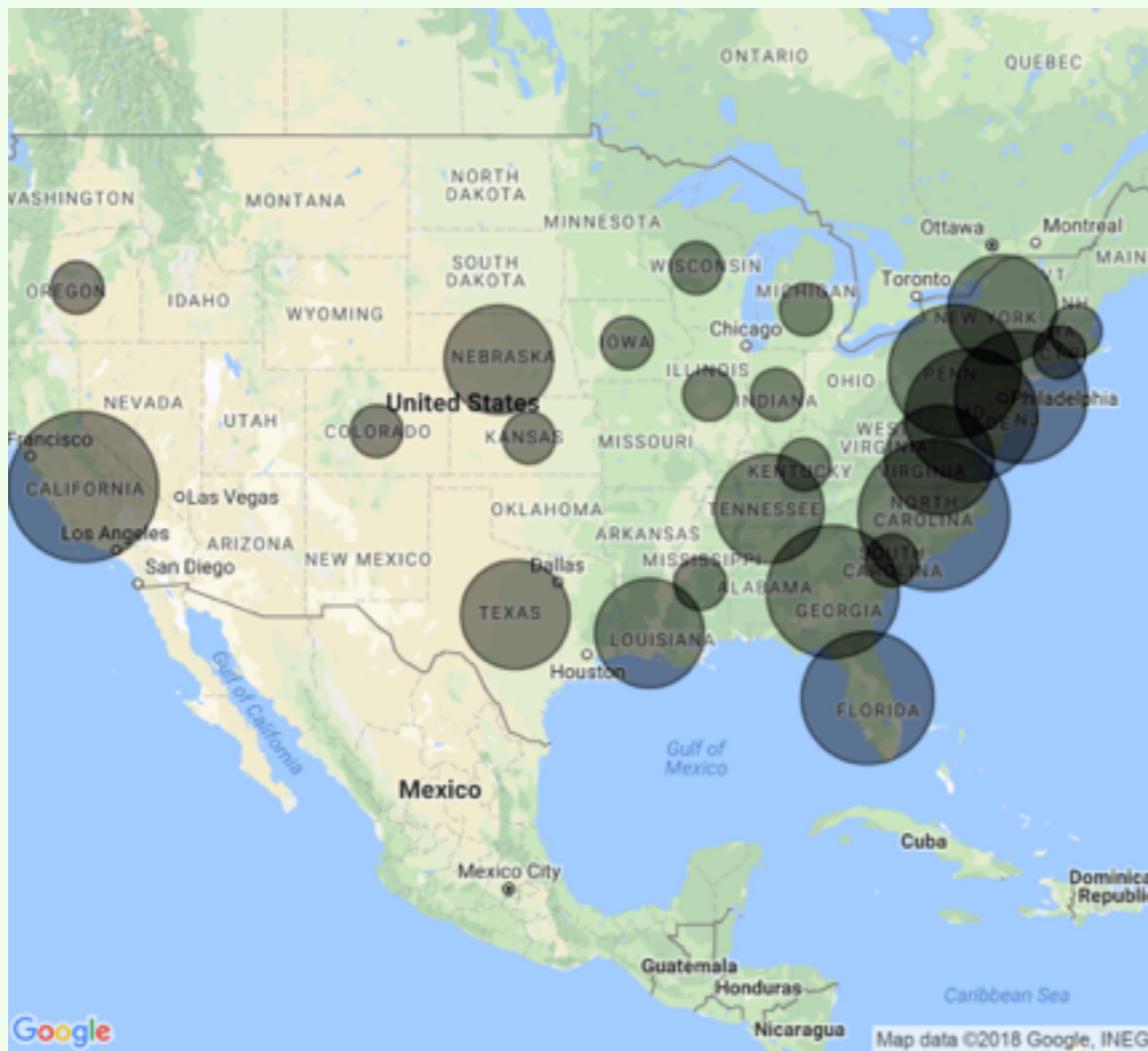
Rate the following sentence as a journal entry for the third day:

It was such a simple chore to return Kevin's pan
{tomorrow / the next day/ Tuesday/ Wednesday}!

But I totally forgot!

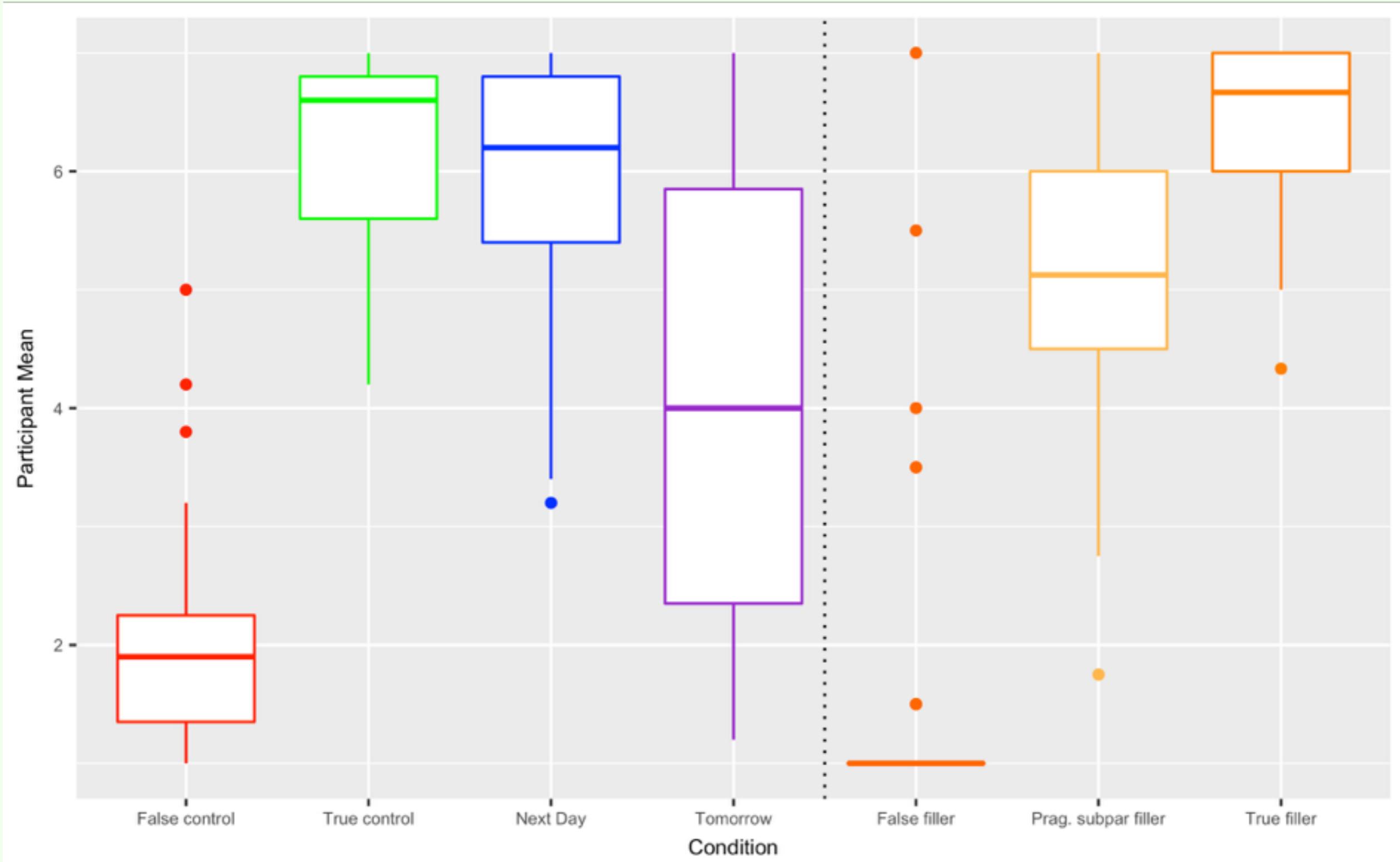
Exp. 3 Methods

- Same methods are Experiments 1 and 2
- Same sample size as Exp. 2 (N=48)
- Less geographic diversity than previous experiments



Age	N
18-25	3
25-35	23
35-45	14
45-55	4
55-65	4
65-75	0

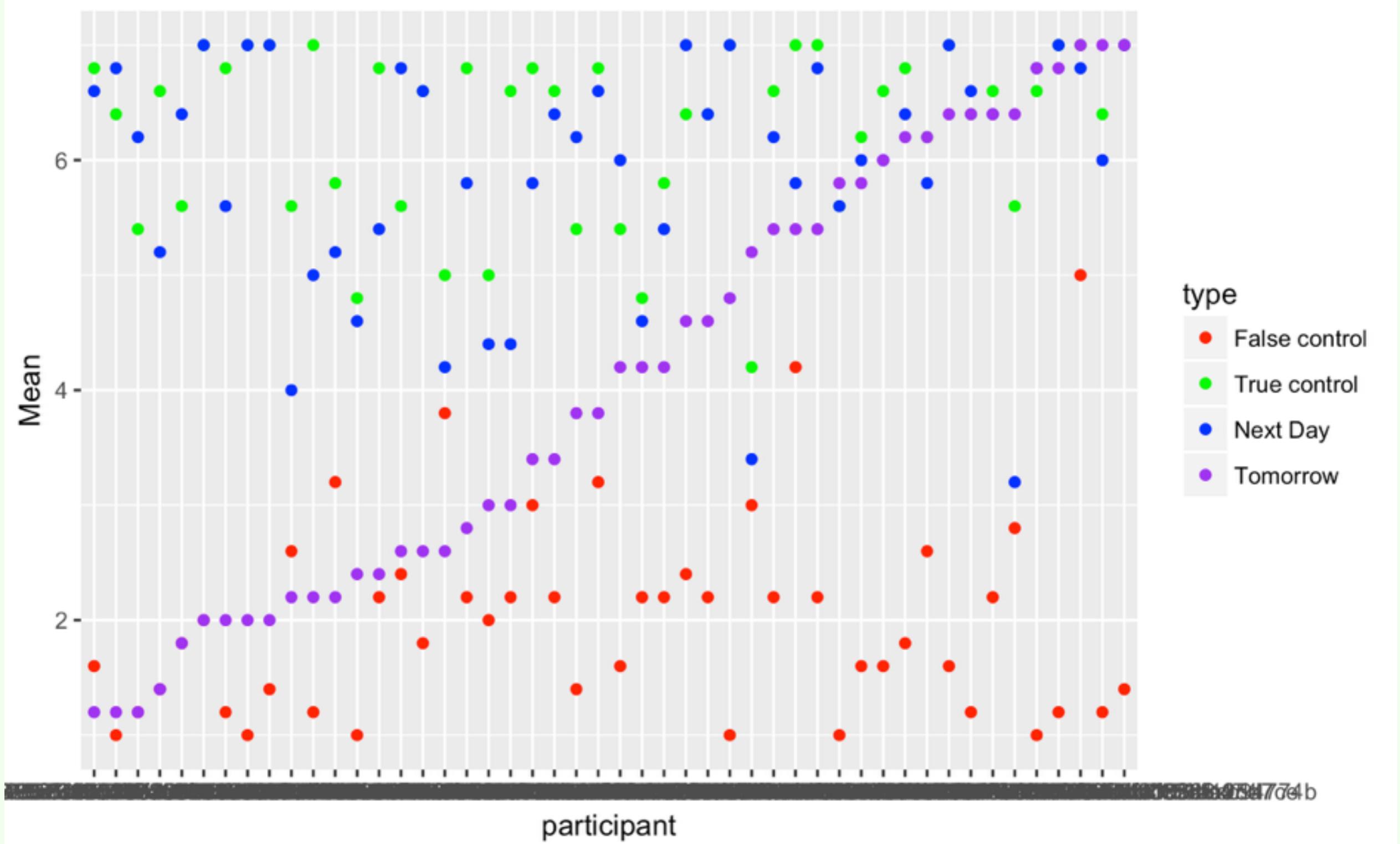
Exp. 3 Means by Condition



Post-hoc Exp. 1 to Exp. 3 comparison using mixed-effects regression analysis, fixed effects and interactions

Condition	$\hat{\beta}$	z	p
False control	-3.44(+/-0.36)	-9.4	< 0.00001
True control	2.31(+/-0.36)	6.5	< 0.00001
<i>the next day</i>	1.50(+/-0.33)	4.5	< 0.00001
Exp. 3	-1.72(+/-0.47)	-3.6	0.0002
False control * Exp. 3	0.35(+/-0.53)	0.7	0.5
True control * Exp. 3	0.87(+/-0.52)	1.7	0.09
<i>the next day</i> * Exp. 3	0.97(+/-0.47)	2.1	0.04

Exp. 3 Participant Means by Condition



Interpretation

Results from Experiment 3 were mixed.

The mean ratings for *tomorrow* were significantly lower in Exp. 3 compared to Exp. 1, and they were lower than the pragmatically subpar fillers.

However, a substantial group of participants did accept non-utterance time *tomorrow* even though it was not embedded under a speech verb. This is unexpected under an indexical shift analysis.

Interim Findings

	1st-person pronouns	Unembedded	Quantificational binding
Free Indirect Discourse	X	✓	X
Shifty Indexical	✓	X	X
Time anaphoric	✓	✓	✓
Perspective anaphoric	✓	✓	?

Anaphoric to what?

Times

Every time it snows, my car is very icy **the next day**.

Every time it rains, the streets are flooded **tomorrow**.

Exp. 2 Quantificational Binding Stimuli

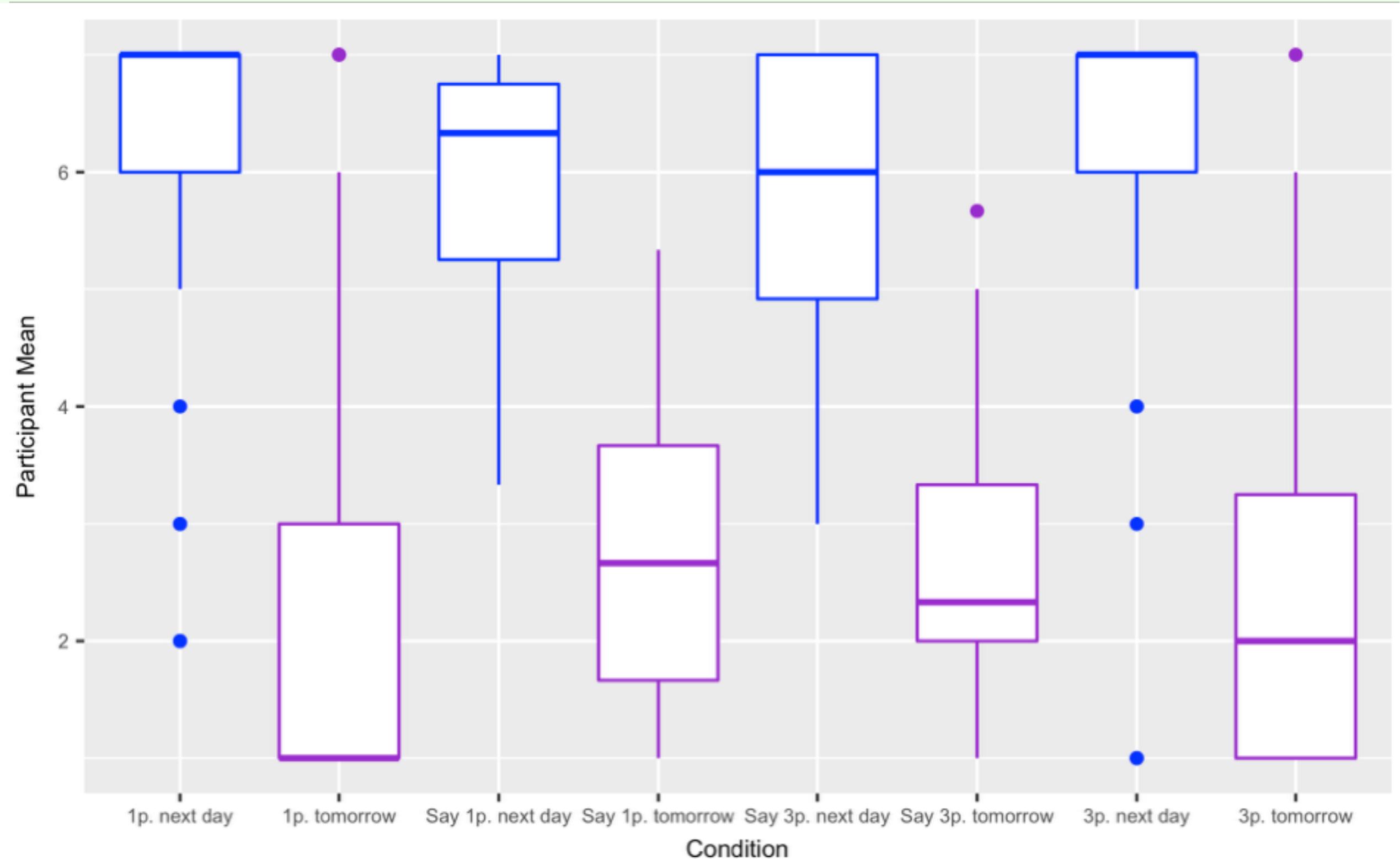
Time

Every time {I/ Kevin} wash(s) {my / his} car, it rains
{tomorrow / the next day}

Speech context

Every time the UPS person says that {my / the}
package has been delivered, it doesn't show up until
{tomorrow / the next day}

Quantificational Binding Task Results



What else is left?

Could *tomorrow* be anaphoric to salient perspectives?

What does perspectival anaphoricity look like?

Perspectival motion verbs like *come* can be anchored in the event-time or utterance-time perspective of the speaker or addressee, or in the perspective of an attitude-holder (Barlew 2017).

Jyoti and Carolyn share an office. Carolyn consistently works in their office, while Jyoti often works from home. They run into each other at the Roost.

Carolyn: Are you planning on **coming** in to the department tomorrow?

What else is left?

Could *tomorrow* be anaphoric to salient perspectives?

Predictions

- ❖ Acceptable under speech verbs
- ❖ Acceptable in non-embedded contexts if a salient perspective is available
- ❖ Quantificational binding is possible if perspectives covary with the quantifier

Is *tomorrow* perspectival?

Could *tomorrow* be anaphoric to salient perspectives?

Quantificational binding

On Christmas Eve, every little girl stays awake for hours wondering what she will find under the Christmas tree tomorrow morning.

Maintain perspective constraints (Harris 2012)

Every time you have to kick a drunk idiot out of the bar, you get to gloat about how hungover they'll be tomorrow.

Explore other non-utterance time perspectives

Event-time speaker

Utterance-time speaker mistaken about temporal location

Conclusion

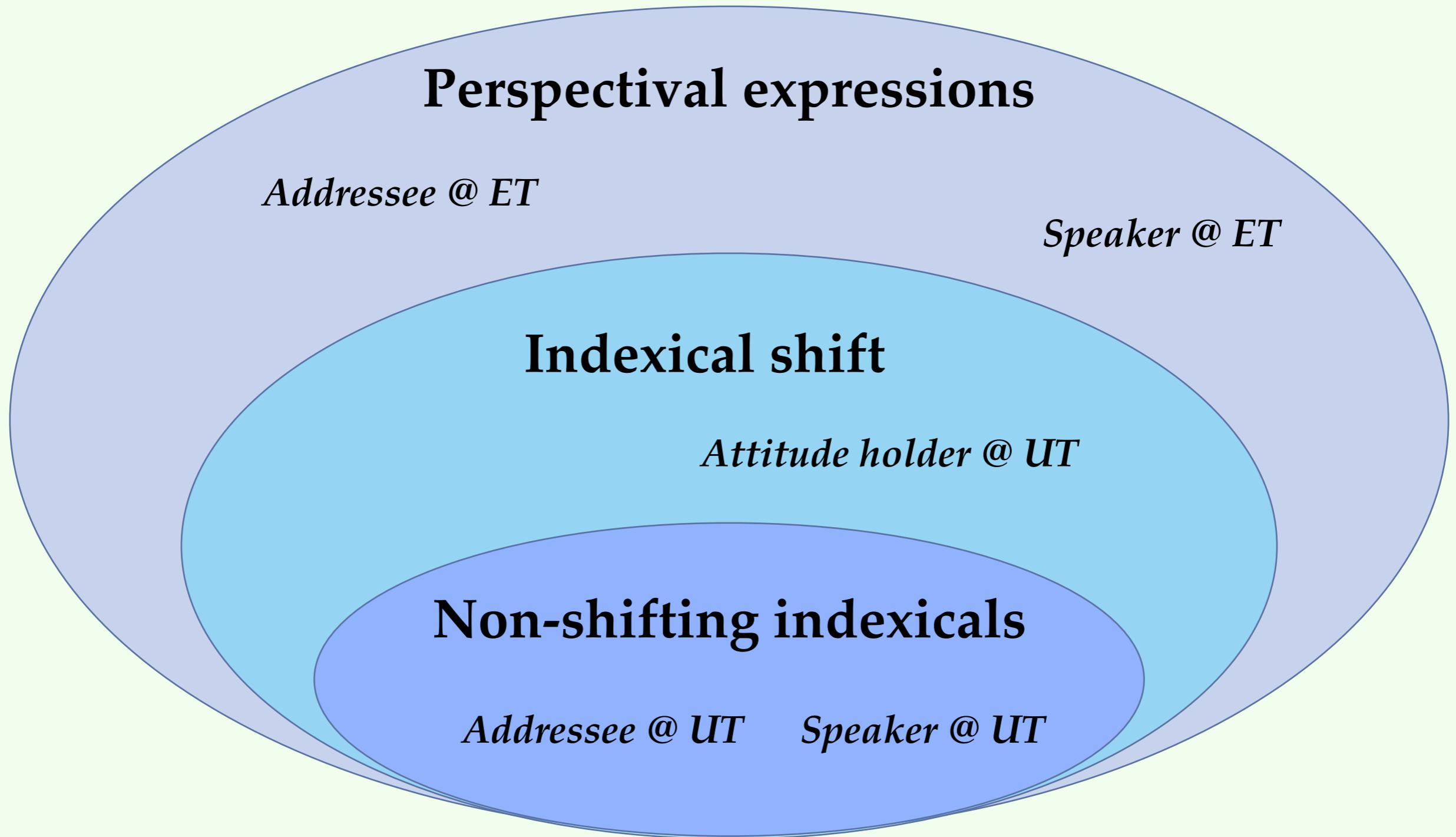
Speaker perspective at event-time is critical:

Martha and Amy are talking to each other on the bus. Martha is telling Amy about meeting up with a guy she met online.

When he messaged me last week, we made plans to meet up **tomorrow**, but then he had to postpone until yesterday.

When I arrived, the bar was very crowded, but I managed to snag a table before Lawrence **came**.

Licensing environments



Acknowledgments

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Pragmatically-subpar filler

Saturday



Sunday



Monday



Athena is lending Sophie some binoculars.

Rate the following sentence as a caption for the third panel:

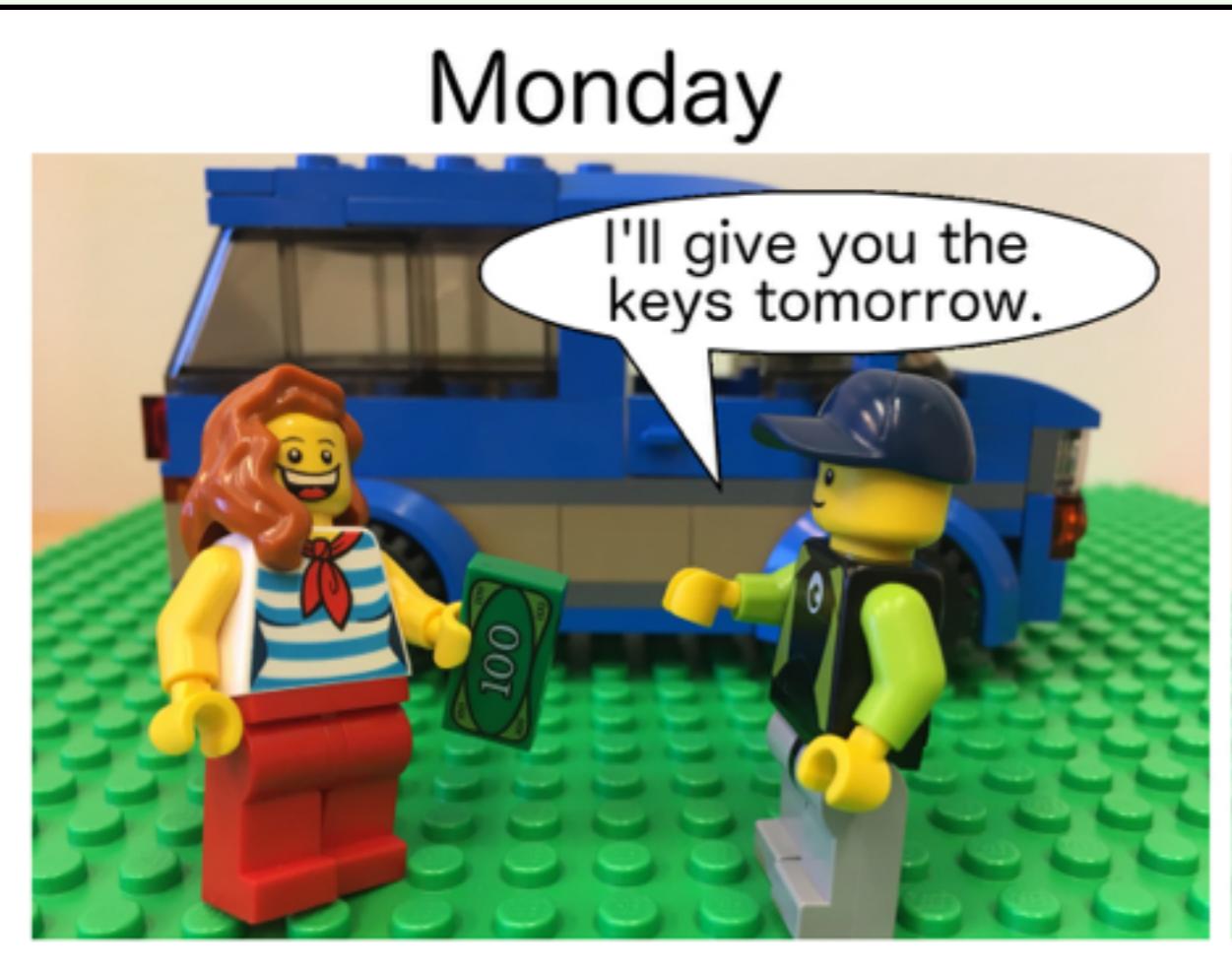
Athena is frustrated because she is bored.

Replication

Methods

- Larger sample size ($N=80$)
- Comics modified so that *tomorrow* does not appear:

Experiment 2



Replication

