

SAYING AND SHAKING 'NO'

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HEAD SHAKE AND 'NO' I

- Claim: headshake is a form variant of verbal 'No'.
- Initial support:

- (1) a. A: (1) Do you want some coffee? / (2) You don't want some coffee?
b. B: 😐 (= head shake)

- The crucial observation here is that depending on whether A produced a negative or a positive propositional kernel in the question, B's head shake is either a denial of the positive proposition (1) or a confirmation of the negative one (2). That is, a head shake behaves like q/a 'No'.

HEAD SHAKE AND 'NO' II

- This is one of the meanings of *no* discussed by Tian and Ginzburg¹ as “‘No’ with explicit antecedent’, a simplified lexical entry for which is given as in (2):

(2)

$$\left[\begin{array}{l} e_{head} : no / \text{😬} \\ \\ \text{dgb-params} : \left[\begin{array}{l} \text{spkr} : Ind \\ \text{addr} : Ind \\ \text{u-time} : Time \\ \text{c1} : \text{addr}(\text{spkr}, \text{addr}, \text{u-time}) \\ \text{p} : Prop \\ \text{MaxQUD} = p? : \text{PolarQuestion} \end{array} \right] \\ \\ \text{content} = \text{Assert}(\text{spkr}, \text{addr}, \text{u-time}, \text{NoSem}(p)) : \text{IllocProp} \end{array} \right]$$

¹Y. Tian and J. Ginzburg. ‘No I Am: What are you saying “No” to?’ In: *Sinn und Bedeutung* 21. 2016.

- NoSem negates p if p is a positive proposition, and confirms p if p is a negative proposition:

$$\text{NoSem}(p) = \begin{cases} \neg p & \text{if } p : \text{PosProp} \\ p & \text{if } p : \text{NegProp} \end{cases}$$


- Note that the result of 'NoSem(p)' is always of type *NegProp*.

HEAD SHAKE AND 'NO' I

- The other uses of “No” discussed by Tian and Ginzburg are called ““No” with exophoric antecedent’ (3) and ““No” with implicit antecedent’ (4).

- (3) a. (*A child is about to touch a socket*) Adult: No!
b. (*A discovers smashed beer bottle in freezer*) A: No!

- (4) a. A: How’s your girlfriend?
b. B: She is no longer my girlfriend.
c. A: Ah, I’m sorry.
d. B: No, she is my wife now.

- The occurrences of *No* in (3) and (4) can be replaced by the head shake  without a change in meaning.

- Hence, there is evidence that the head shake and the particle 'No' are both form variants of the same lexical resources (this in cultures where the head shake is associated with negation and not with affirmation, as it is in Bulgaria and, with some modifications, Greece, Turkey, and Southern Italy²).

²R. Jakobson. 'Motor signs for 'yes' and 'no''. In: *Language in Society* (1972), pp. 91–96.

In order to account for the uses of head shake and 'No' observed above ((A. Kendon. 'Some uses of the head shake'. In: *Gesture* 2.2 [2002], pp. 147–182) mentions eight uses) in terms of linguistic theory, one needs at least:

- a dialogical framework that defines speakers and illocutionary interactions,
- distinguishes negative and positive propositions,
- offers a means for representing appraisals (noetics),
- and provides access to the exophoric context.

- **Context in KoS** (J. Ginzburg. 'An Update Semantics for Dialogue'. In: *Proceedings of the 1st International Workshop on Computational Semantics*. Ed. by H. Bunt. Tilburg: ITK, Tilburg University, 1994; S. Larsson. 'Issue based Dialogue Management'. PhD thesis. Gothenburg University, 2002; M. Purver. 'CLARIE: Handling Clarification Requests in a Dialogue System'. In: *Research on Language & Computation 4.2* [2006], pp. 259–288; R. Fernández. 'Non-Sentential Utterances in Dialogue: Classification, Resolution and Use'. PhD thesis. King's College, London, 2006; J. Ginzburg and R. Fernández. 'Computational Models of Dialogue'. In: *Handbook of Computational Linguistics and Natural Language*. Ed. by A. Clark, C. Fox and S. Lappin. Oxford: Blackwell, 2010; J. Ginzburg. *The Interactive Stance: Meaning for Conversation*. Oxford, UK: Oxford University Press, 2012)
- instead of a single context, analysis is formulated at a level of cognitive states, one per conversational participant.

- Of these contextual parameters two, *VisSit* and *Mood*, are probably never entirely identical across participants.
- Distinct interlocutors do not share the same pair of eyes—much of the time interlocutors have each other as their focus of attention.
- But there are various devices such as pointing or the verbal *Look!* to effect alignment.
- Nor do they register the same public ‘face’.

PUTTING IT ALL TOGETHER: DIALOGUE GAMEBOARD, I I

[dialoguegameboard : DGBtype]
private : Private

DGBType =_{def}

spkr : Ind	<i>turn</i>
addr : Ind	<i>owner-</i>
utt-time : Time	<i>ship</i>
c-utt : addressing(spkr,addr,utt-time)	
Facts : Set(Proposition)	<i>shared assumptions</i>
VisSit : [InAttention : Ind]	<i>visual field</i>
Pending : list(locutionary Proposition)	<i>ungrounded utts</i>
Moves : list(illocutionaryProposition)	<i>grounded utts</i>
QUD : poset(Question)	<i>qs under disc</i>
Mood : Appraisal	<i>face</i>

- KoS provides a theory of meaning for highly context dependent elements such as non-sentential utterances (10a-c) and filled pauses (10d):
- yes \mapsto p (p? is MaxQUD);
- Dunno ('I don't know') \mapsto \neg Know(spkr,MaxQUD)
- Right \mapsto Understand(A,u) (u is MaxPending, A current speaker);
(all Ginzburg, *The Interactive Stance: Meaning for Conversation*)

SIMULTANEOUS HEAD SHAKE I

- Simultaneous head shake can be used by a speaker to emphasize negative utterances, as in a famous speech given by Bill Clinton in (5).
- Note that three chunks of head shake gestures are produced, one for each of the negated verbal sub-utterances (*never ... not ... never*).
- ➔ Repetition seems to be used as a temporal means of aligning head movements and the scope of negation.

(5) *I never told anybody to lie* (.) *not a single time* (..) *never*
[repeated 🤨] (.) [repeated 🤨] (..) [🤨]

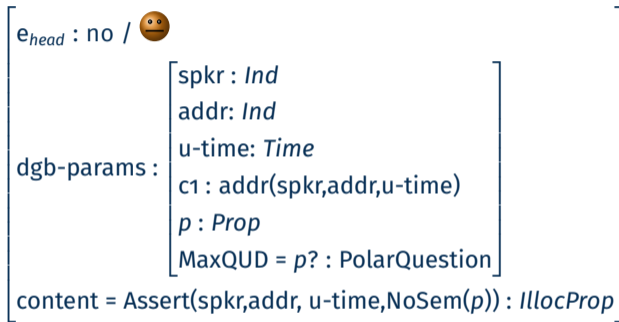
SIMULTANEOUS HEAD SHAKE II

- Simultaneous head shake seems to presuppose a negative particle in speech:

(6) a. I don't believe you.



b. ?I believe you.



- (6a) provides a negative proposition, $\neg believe(A,B)$, which by the lexical entry in the headshake affirms.
- (6b) provides a positive proposition, $believe(A,B)$, which by the same lexical entry the headshake negates, hence a contradiction ensues.

- However, the contradiction can be ameliorated:

(7) *(Context: Claims that B stole 500 Euro)*

- B: **They say I stole the money.** I didn't. (= I did not steal the money.)
- A: I believe you.



1. One can understand A as verbally expressing his belief in B's protestation of innocence, whereas the head shake affirms the negative proposition B makes **or**
2. the head shake expresses that A is upset about what 'they' did (**neg. appraisal**)

- In either case, this requires us to assume that the head shake can be **disassociated from speech** that is simultaneous with it, an assumption argued for in some detail with respect to speech laughter by³.
- Such observations are of great importance for a multimodal theory.
- This is because it has been claimed that multi-tier interpretation is guided by the heuristic ‘if multiple signs occur simultaneously, take them as one’⁴.

³C. Mazzocconi, Y. Tian and J. Ginzburg. ‘What is your laughter doing there: a taxonomy of the pragmatic functions of laughter’. In: *IEEE Transactions of Affective Computing* (2020).

⁴N. J. Enfield. *The Anatomy of Meaning: Speech, Gesture, and Composite Utterances*. Language, Culture and Cognition 13. Cambridge, UK: Cambridge University Press, 2009, p. 9.

- Further motivation for dissociated, expressive head shake uses:

(8) *Contestant throat whistles while playing the guitar in talent show*

Judge: **You're such a talent. Incredible** + 🤨

(Simplified from <https://languagelog.ldc.upenn.edu/n11/?p=50436>)



[show on YT, images clickable]

- The head shake expresses amazement concerning the artistic achievement. So it can be understood as a way of signaling disbelief.
- Disbelief in turn is a notion which, plausibly, rests on negation, corroborating Kendon's conjecture that every head shake use directly or indirectly involves a negative context.⁵
- However, the disbelief in (8) is rooted in a **positive appraisal** (whereas ex. 'B stole 500 Euro' involved *negative* appraisal).

⁵A. Kendon. 'Some uses of the head shake'. In: *Gesture 2.2* (2002), pp. 147–182, p. 180.

- incorporate the effect of pos/neg valenced signals (laughs, smiles, frowns, sighs) on an interlocutor's public face in the DGB in terms of Mood.⁶

- $$\left[\begin{array}{l} \text{form : } \text{😊} \\ \\ \text{dgb-params : } \left[\begin{array}{l} \text{spkr : } \text{Ind} \\ \text{vis-sit : } \left[\text{foa : } \text{Rec} \right] \\ \delta : \text{Int (pos or neg)} \\ \text{c2 : } \text{Arousal}(\delta, \text{form}) \\ \text{L : } \text{Type} \\ \text{p} = \left[\begin{array}{l} \text{sit} = \text{foa} \\ \text{sit-type} = \text{L} \end{array} \right] : \text{Prop} \end{array} \right] \\ \\ \text{cont} = \text{Amaze}(\text{spkr}, \text{p}, \delta) : \text{Prop} \end{array} \right]$$

⁶J. Ginzburg, C. Mazzocconi and Y. Tian. 'Laughter as Language'. In: *Glossa* 5.1, 104 (2020).

- PleasantnessIncr:

$$\left[\begin{array}{l} \text{pre: [LatestMove.cont = Assert(spkr, Amaze(spkr, p, \delta)) : IllocProp]} \\ \text{effect : [PleasantnessIncr(\delta, \epsilon)]} \end{array} \right]$$

- where PleasantnessIncr is an operation on DGB.MOOD.

- Polarity: negative if δ is negative, positive if δ is positive

- ➔ Uniform analysis of appraisal contribution of various nonverbal social signals

Judge

You're such a talent. Incredible + 🙄

- it does not seem to be possible to replace the head shake in (8) with verbal 'No', regardless of intonation:
*Incredible + No
- Hence, the positive appraisal head shake turns out to be an exception to the claimed parallelism of 'No' and 🙄
- It seems to be possible to say 'No' first, however: No + Incredible
- ? In speech, expressing appraisal of an event seems to have to precede expressing the attitude towards the event, while in multimodal interactions both can be uttered simultaneously.

FOR QUESTIONS/COMMENTS VISIT THE
DISCUSSION SESSION ON FRIDAY, 30TH OF JULY
2021, 17:45 (CEST)