Incremental processing of laughter in interaction

laughing hing

Arash Eshghi (Heriot-Watt University) · Vladislav Maraev (University of Gothenburg) · Christine Howes (University of Gothenburg) · Julian Hough (Queen Mary University of London) · Chiara Mazzocconi (Université de Paris)

Laughter in Dynamic Syntax

— What is Dynamic Syntax? It is an action-based grammar (-as-parser) framework.

- We are laughing *at* LAUGHABLES what laughter is "pointing at" (Glenn, 2003).
- We laugh a lot: laughter is 17% of dialogue (Tian et al., 2016).
- 90% of laughables are present in the dialogue (endophoric).
- Laughter does not necessarily follow the laughable.
- Laughter does not only occur at phrase boundaries.

Self-produced laughables (134 laughters)

— How is it helpful?

It directly captures the time-linear, incremental nature of comprehension and production. It also models dialogue phenomena, such as grounding and split utterances.

— Why is it good for modelling laughter?

Laughter is a dialogue phenomena, and incrementality is vital, so we get many things "for free" with DS. — How can we do it?

We treat laughter in a way similar to pronouns, but with additional semantic information that the referent (laughable) is laughed at. — I already know

₽		L _
	IF	Ty(X)
laughter		$\neg \langle \downarrow_L \rangle \exists x.Tn(x)$
	THEN	$make(\downarrow_L)$
		$go(\downarrow_L)$
		put(Ty(X))
		$put(Fo(\left[\begin{array}{cc}head & : X\\ p_{=laughable(head)} & : t\end{array}\right]))$
		$go(\uparrow_L)$
		$put(?\exists \mathbf{x}.Fo(\mathbf{x}))$
		$put(Fo(\mathbf{U}))$

Other-produced laughables (152 laughters)

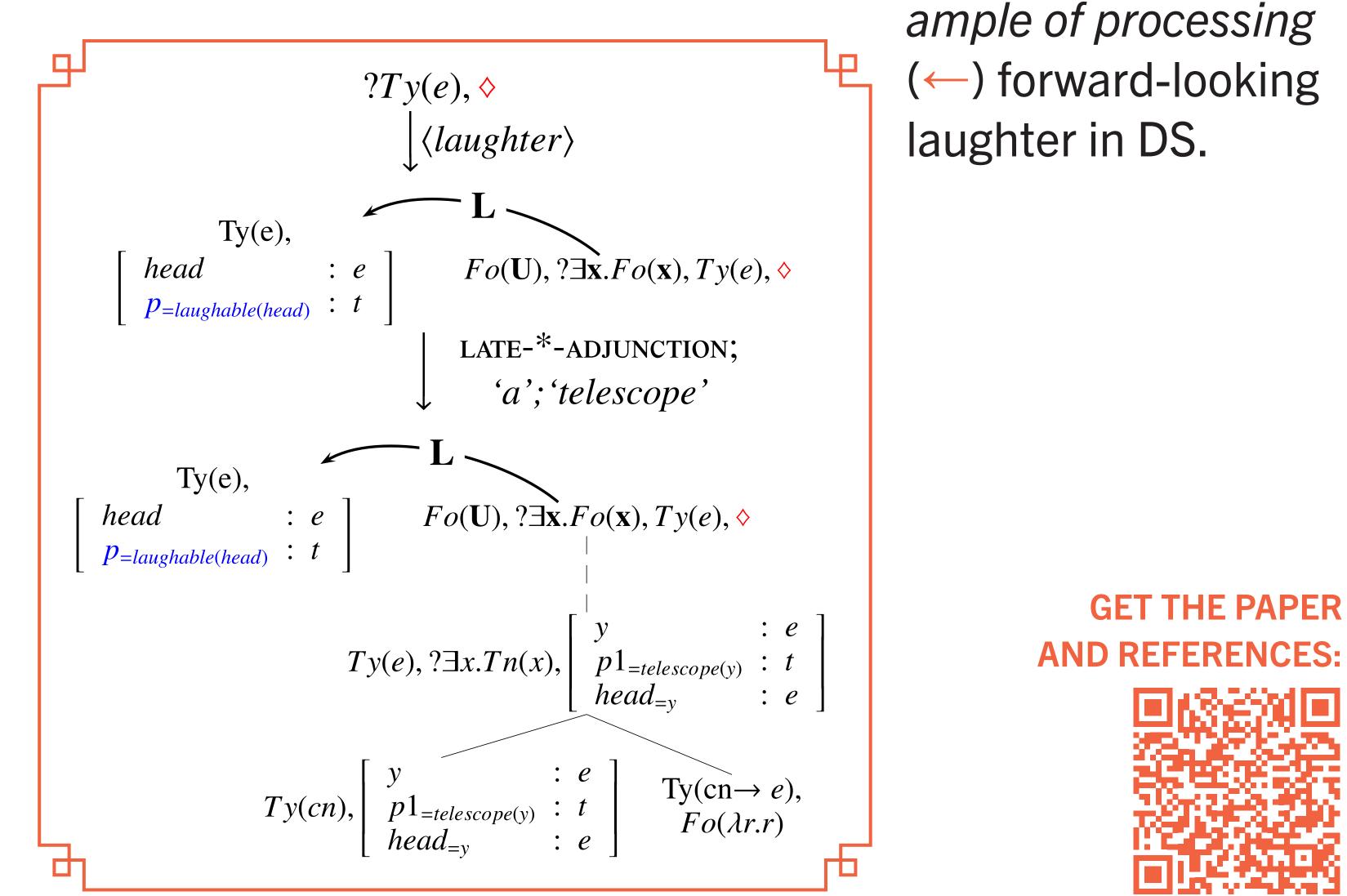
Figures: Distribution of laughters that **follow**, overlap or precede the endophoric laughable (from Mazzocconi et al., 2019)

by laughter form: laughter bouts (70% of all laughters) laughters, co-occurring

what Dynamic Syntax is, can you be more technical?

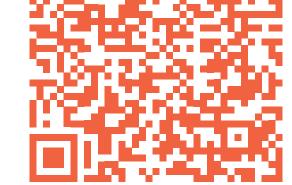
ABORT ELSE

Yes. Here we present the *lexical entry for laughter* (1) and *ex*-





with speech



Backward-looking

This is a lovely surprise Nicola Thank you! It's very nice nice of you! Have a nice day! Linda Nicola laughter> Doing the hoovering

<...> [BNC JNW 372-376]

Distant backward-looking

have to be away and we don't hear from lan you we think, [Oh you naughty boy, yes]. [You might get worried, yes.] John We'll take him off the scheme lan <laughter> John because he hasn't replied to any of our lan correspondence John Yes. [BNC JNW 372-376]

Forward-looking

Michael Heseltine (talking about his experience) *in the hospital*): Erm e e they're all individual and mine I think, looking back, was erm erm er a light er experience and I mean as I've said, the <laughter> the erm er w this telescope they shove up you, er I mean, Chris Patton had the same thing. [BNC K6A 90]