The minimal interface in children's language acquisition: evidence from recursively embedded relative clauses in Mandarin

Caimei Yang, Bing Bai, Xin Dong (Soochow University, China)
Tom Roeper (University of Massachusetts, Amherst)

Overview: A challenge lies in recognizing that the pragmatic trigger is not a part of the final grammar, and therefore an independent ("autonomous") grammar can deliver analyses and meanings that do not honor pragmatics and in fact may contradict it (e.g., *the mouse was eaten by the cheese*). The current study provided first acquisition evidence of recursive relative clauses (RCs) in Mandarin-speaking children aged from 4 to 9, in order to investigate how pragmatic knowledge and different types of recursive embedding influence the acquisition of Indirect Recursion.

Participants: 245 monolingual Chinese-speaking children aged 4 to 9, and 39 undergraduates in Soochow University as controls.

Materials: Four types of recursively embedded RCs were tested in two pragmatic conditions (reversible and irreversible) (**Table 1**) with Mandarin instructions. Concerning the distinction of the pragmatic condition, for example, we mean in non recursive RCs *jiejie diao de yu* (the fish the sister fishes) is pragmatically irreversible, while *gou yao de mao* (the cat the dog bit) is pragmatically reversible.

Procedures: A picture-elicited repetition-like task was used. Take the embedding of a preceding subject RC with an object RC as an example to illustrate the whole procedure. When the experiment began, an introduction recording (i.e., a) was played immediately the pictures were presented on the screen (**Figure**). The two balloons were flickering to arrest attention. With a recorded elicited sentence (i.e., b) played, the finger pointing moved from the balloon in the elicited stimulus to the balloon in the target picture, immediately an elicited question (i.e., c) was given.

Results: One the one hand, different recursive RCs differed in acquisition age (**Table 2**). A subject RC embedded inside another subject RC (SS)was acquired later, while an object RC inside another object RC(OO) was acquired earlier, regardless of pragmatic conditions. On the other, the developmental data showed that pragmatic cues truly facilitated the acquisition of recursive RCs. An acquisition delay of at least two years was found in all type of recursive RCs under the pragmatically reversible condition, with the exception of recursive object RCs (i.e., OO) which only showed one year delay. Additionally, the non-target production showed that conjoined analysis was only used by children, and that this strategy is more applicable in the pragmatic reversible condition. The non-target production also showed that reduced recursive relativization was far more frequent in SO and SS in the pragmatically reversible condition.

Account: The results suggested that pragmatic knowledge played a role in language acquisition, and that the extent to which the pragmatics affect acquisition is dependent on structure. This study suggested that children sought to find a simple and economical cross-modular interface called the minimal interface, and that pragmatic knowledge served as a triggering experience in the picture of acquisition.

Word count: 467

pragmatically irreversible	Subject Verb de Object Verb de Object (OO) gege yang de yu tu-chu-lai de na-chuan paopao brother feed de fish spit-out de DEM-CL[1] bubbles	
	Verb Object de Subject Verb de Object (SO) chi pingguo de jiejie na de na-ge qiqiu eat apple de sister hold de DEM-CL balloon	
	Verb Subject Verb de Object de Subject (OS) xiang-chi jiejie diao de yu de na-zhi mao want-eat sister capture de fish de DEM CL cat	
	Verb Verb Object de Subject de Subject (SS) qian-zhe dai maozi de gou de na-ge gege drag-ASP wear hat de dog de DEM-CL brother	
pragmatically reversible	Subject Verb de Object Verb de Object (OO) zhu yao de mao xiangda de na-zhi hou pig bite de cat want-to-hit de DEM CL monkey	
	Verb Object de Subject Verb de Object (SO) yao-le mao de gou xiang-da de na-zhi hou Bite-ASP cat de dog want-to-bit de DEM-CL monkey	
	Verb Subject Verb de Object de Subject (OS) da-le mao yao de gou de na-zhi hou hit-ASP cat bite de dog de DEM-CL monkey	
	Verb Verb Object de Subject de Subject (SS) xiang-da yao mao de gou de na-zhi hou want-to-hit bite cat de dog de DEM-CL monkey	

Table 1. A 4 (four types of recursive embedding in syntax) X 2 (pragmatically reversible and irreversible) design

	OO	SO	OS	SS
Pragmatically reversible	7（p=1.000）	8(p=0.142)	9 (p=1.000)	>9 (p=0.033)
Pragmatically irreversible	6（p=0.360）	6（p=0.092）	7(p=1.000)	8(p=1.000)

Table 2. The acquisition age of different recursively embedded relative clauses


Figure

a. zheli you liang ge qiqiu
here has two CL balloon
'Here are two balloons.'

b. zhe shi chi xiangjiao de jiejie na de na ge qiqiu
this BE eats banana de sister holds de that CL balloon
'This is the balloon the sister who is eating an apple holds'

c. na zhe ge ne?
that this CL SFP?
'what about this one?'

[1] DEM is short for demonstrative, and CL is short for classifier.