

Linguistic reference and schizotypal personality: interpretation of definite descriptions

Definite singulars, when combined with generic predicates (e.g. *o gato é fofo/the cat is cute*), can receive either a generic reading or a specific one in Brazilian Portuguese (BrP).^[3] These readings depend on information previously introduced in the universe of discourse. Although children acquire definiteness earlier, mastering the range of possible interpretations of definite DPs seems to happen later during language acquisition process.^[12] Besides, Brazilian children with learning disabilities fail to use salient discourse information to interpret definite DPs.^[8] We present new experimental results from BrP suggesting that negative features of schizotypy construct might also affect the retrieval of discourse information regarding the interpretation of singular definite DPs.

Schizotypy is a latent personality organization, which manifest in a continuum from healthy to schizophrenic individuals, that might predict liability to schizophrenia-spectrum disorders.^[2] The speech of healthy relatives of schizophrenics shows the same types of referential failures observed in schizophrenic speech, though to a lesser degree.^[5,6] A number of linguistic studies have showed that reference failures can differentiate between schizophrenia profiles.^[7,11] Thus, our aim is to investigate whether schizotypal personality traits influence the way speakers use previously introduced discourse information when interpreting definite DPs. Our hypothesis is that schizotypal personality traits alter the way contextual information is used in the interpretation of singular definite DPs.

An offline acceptability judgment task was conducted. After reading a discourse scenario, subjects were asked to judge (using a 4-point Likert scale: 1-bad, 2-not good, 3-good, 4-very good) the acceptability of given readings for a target singular definite DP (table 2). The independent variables were (i) type of antecedent given in the discourse scenario (specific indefinite/bare singulars), (ii) type of discourse scenario (short/long), and (iii) type of reading (generic/specific) (table 1). While bare singular antecedents should favor generic readings of the target definite DP, specific indefinite antecedents should favor specific readings. Also, antecedents were expected to be less salient in short discourse scenarios.

Participants saw all 20 experimental items (table 2), 5 per condition, and 30 fillers (10 VP ellipsis and 20 inalienable possession), which were randomized per participant (the readings were also randomized per participants). In addition, 3 training items (1 VP ellipsis, 1 inalienable possession, and 1 quantification) were included at the beginning of the experiment. Subjects also answered two psychometric questionnaires: *Schizotypal Personality Questionnaire* (SPQ)^[10] and *Formal Thought Disorder-Self* (FTD-S)^[1], in order to identify individual differences between participants. SPQ measures all personality traits related to schizophrenia; and FTD-S focus on language ones. A sociolinguistics questionnaire was added at the end of the experiment to check level of education, age, sex, and history of language and mental disorders in the family.

The final sample was composed of 46 subjects (20 males/26 females, mean age: 25.5). An ANOVA within subjects, repeated measures, showed 2 significant main effects: *antecedent* ($F(1,45)=48,60; p=.001$) and *reading* ($F(1,45)=17,96; p=.001$). It also showed 4 significant interaction effects: *antecedent vs. reading* ($F(1,45)=315; p=.001$), *antecedent vs. discourse scenario* ($F(1,45)=4,52; p=.039$), *discourse scenario vs. reading* ($F(1,45)=5,57; p=.023$), and *antecedent vs. discourse scenario vs. reading* ($F(1,45)=5,37; p=.025$)(Graph.). In general, BrP speakers had a significant preference for specific readings, but when the given antecedent was a bare singular, they attributed higher scores to generic readings. Yet when the scores of both psychometric questionnaires were correlated to the conditions of the language test, there was a significant correlation between condition 1 and negative factors of both psychometric scales: participants with higher scores on *constrict affect*, a factor of SPQ scale, attributed higher scores to specific readings ($r=302, p=.041$) and lower scores to generic readings ($r=-$

.349, $p=.018$); participants with higher scores on *conversation ability*, a factor of FTD-S, attributed higher scores to specific readings ($r = .352, p=.016$).

These results indicate that BrP speakers use information previously introduced in the discourse to interpret DPs. They are also aligned with the literature on definite description in BrP: specific readings of definite DPs are based on semantic information, and generic ones result from interactions between grammar and information available in the universe of discourse.^[3,4,8,9] Also, our findings suggest that negative factors of schizotypy affect speakers use of information previously given when interpreting DPs.

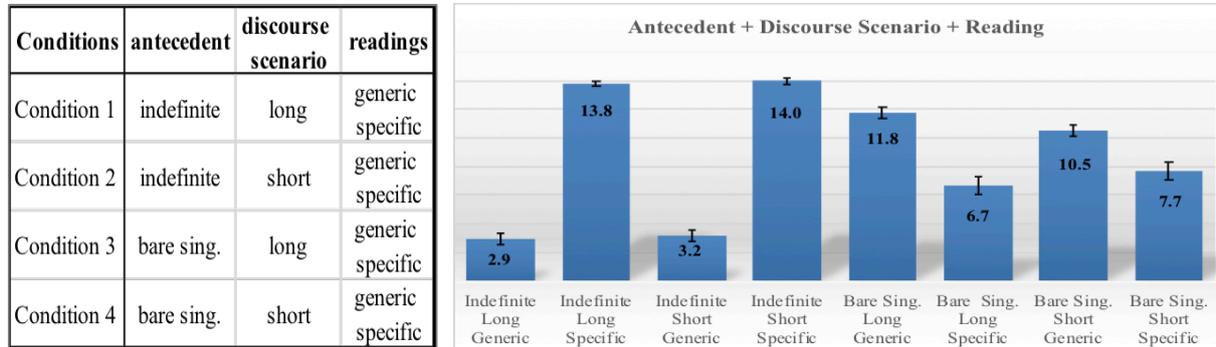


Table 1: Conditions		Graph.: Error Bars - all interactions			
Cond.1: specific indefinite, long discourse scenario, both readings		Cond.2: specific indefinite, short discourse scenario, both readings			
O João comprou uma vassoura de piaçava importada. Ele estava no mercado ontem. Ele me disse que a vassoura é indiana. <i>João bought an imported piassava broom. He was at market yesterday. He said that the broom is Indian.</i>		O Pedro achou uma bola de couro usada. Ele me falou que a bola é ótima para jogar alinha na praia. <i>Pedro found an used leather ball. He told me that the ball is great to play alinha with on the beach.</i>			
- O que é indiana? / <i>What is Indian?</i>		O que é ótima para jogar alinha na praia? <i>What is great to play alinha with on the beach?</i>			
	1 2 3 4		1 2 3 4		
Qualquer vassoura / <i>Any broom</i>		Qualquer bola / <i>Any ball</i>			
Nenhuma vassoura / <i>No broom*</i>		Nenhuma bola / <i>No ball*</i>			
A vassoura de piaçava importada que o João comprou <i>The piassava broom that João bought</i>		A bola de couro usada que o Pedro achou <i>The used leather ball that Pedro found</i>			
Cond.3: bare singular, long discourse scenario, both readings		Cond.4: bare singular, short discourse scenario, both readings			
O Luís estudou baleia no mestrado. Ele fez a faculdade no Canadá. Ele me contou que a baleia dorme na vertical. <i>Luís studied whales for his master. He did his college in Canadá. He told me that the whale sleeps vertically.</i>		O Renato vendeu faca na juventude. Ele me contou que a faca é da Ásia. <i>Renato sold knives in his youth. He told me that the knife is from Asia.</i>			
Quem dorme na vertical? / <i>Who sleeps vertically?</i>		O que é da Ásia? / <i>What is from Asia?</i>			
	1 2 3 4		1 2 3 4		
Qualquer baleia / <i>Any whales</i>		Qualquer faca / <i>Any knives</i>			
Nenhuma baleia / <i>No whales*</i>		Nenhuma faca / <i>No knives*</i>			
A baleia que o Luís estudou no mestrado <i>The whale that Luís studied for his master</i>		A faca que o Renato vendeu na juventude <i>The knife that Renato sold in his youth</i>			

Table 2: Experimental items. *Control items: participants who attributed any scores other than "1" to the "No NP" option were excluded from the final sample.

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