Irony comprehension in multilingual and bi-dialectal speakers

We examined the effect of speaking more than one language (bilingualism) or two dialects of the same language (bi-dialectalism) on irony interpretation in young adults. We wanted to test between three views of bilingual pragmatics: The first account suggests that bilinguals enjoy a pragmatic advantage. In support to this view, some studies with children reported superior bilingual pragmatic skills [1]. The second view suggests that pragmatic interpretation does not differ in bilinguals and monolinguals (as long as bilinguals have adequate proficiency in the target language for semantic processing to proceed unobstructed) [2]. Finally, the Interface Hypothesis suggests that linguistic phenomena at the interfaces (e.g. semantics-pragmatics) lead to difficulties in bilinguals, which cannot be overcome, even at the highest level of language proficiency [3]. Thus, bilinguals cannot attain monolingual-like pragmatic performance. We also aimed to adjudicate between two models of irony. The modular view suggests that ironic meanings always take longer to process because they always involve accessing a literal interpretation first. The direct access view suggests that ironic meanings can be accessed without processing delay, at least in some situations [see in 4].

We expected a multilingual advantage in irony because, from a theoretical perspective, irony is a pragmatic phenomenon that draws on advanced Theory of Mind skills (second-order ToM) [5] and bilinguals have been reported to exhibit superior ToM [6]. Moreover, bilinguals weigh pragmatic information (e.g. intonation) more heavily than linguistic cues during language processing [7, 8]. Bi-dialectals were tested to examine whether close similarity between the languages spoken modulates the cognitive outcomes of bilingualism (if any).

Multilingual (in Greek and other languages; n=33), bi-dialectal (in Cypriot and Standard Modern Greek; n=52) and monolingual (in Standard Modern Greek; n=29) young adults were given an irony test [9] in Standard Modern Greek (SMG). We used ironic criticisms, where the speaker provided a positive reply to mean something negative, with a critical intent (see Table 2). Participants watched videos where one actor asked the other which of two objects s/he wanted. The second actor's reply could be sincere (literal negative or positive) or ironic and was accompanied by different cue(s) (Context only, Intonation only, Intonation + Face, Context + Intonation + Face). We used different ironic cues to determine whether multilingualism confers a global advantage in irony or whether the benefit is found only when irony is indexed by non-verbal cues. We also wanted to test if irony is processed as fast as literal meanings in all, none or in some contexts that clearly bias irony. Participants had to select the object the second person wanted (for irony, one object corresponded to the literal meaning).

Percentage accuracy and mean RTs are presented in Table 1. There were no group differences in socioeconomic status (F(2, 101)=0.016, p>.05) or general intelligence (F(2, 121)=1.511, p<.05). An Analysis of Variance (ANOVA) on accuracy with Group and Condition as factors indicated only a significant effect of Condition (F(2, 222)=213, p<.05). Participants were least accurate in the Ironic condition and less accurate in the Literal-yes than in the Literal-no condition (ps<.05). A similar ANOVA on RTs showed, again, only a significant Condition effect (F(1, 80)=32, p<.05). Participants were slower in the Ironic than in the other conditions (ps<.05). A further ANOVA on accuracy for the ironic items with Group and Cue as factors indicated only a significant Cue effect (F(3, 333)=29, p<.05). Participants were less accurate in the Context only and Intonation only conditions than in the other cue conditions (ps<.05). A similar ANOVA on RTs for ironic items showed only a significant Cue effect (F(3, 129)=28, p<.05): participants were slower in the Context only than the Context + Intonation + Face condition (p<.05). In fact, in this and the Intonation + Face condition ironic interpretations were processed as fast as interpretations in the two literal control conditions (ps>.05).

We found that irony is facilitated when more than one ironic marker are present and that it can be processed as fast as literal meanings. Moreover, our results showed no group differences in irony. These findings support the view of bilingual pragmatics according to which pragmatic interpretation is no different in bilinguals compared to monolinguals (at least at high proficiency level for bilinguals) and to the direct access processing model of irony.

Table 1: Mean percentage accuracy (A) and mean reaction times (RTs) for correct responses by Condition, Cue and Group.

	Irony								Literal Yes		Literal No	
	Context		Intonation		Intonation + Face		Context + Intonation +Face +					
	A	RTs	A	RTs	A	RTs	A	RTs	A	RTs	A	RTs
Monolinguals	44	799	38	1280	53	1050	62	1094	92	797	96	746
Bilinguals	30	1761	31	1045	49	1245	52	893	94	755	97	759
Bi-dialectals	31	1309	33	1163	44	1205	51	884	96	720	97	723

Table 2. Example items from each meaning condition (with context incongruity as an ironic cue).

Context	George, I know that you like wearing [blue][1] [red][2] clothes and [that you really hate red clothes. But a red t-shirt would be nice to wear][1]. [you have said this to me many times][2].
Labelling	Here is a blue t-shirt and here is a red t-shirt.
Target question	Would you like the red t-shirt as a gift, now?
Target ironic sentence (12 items)	Yes, you know how much I like red clothes!
Target Literal Yes sentence (12 items)	Yes, you know how much I like red clothes!
Target Literal No sentence (12 items)	No, you know how much I hate red clothes!

[1]For Ironic and Literal No items
[2] For Literal Yes items

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