

Irony comprehension in multilingual and bi-dialectal speakers

Past research with children and adults has reported a negative effect of bilingualism on vocabulary proficiency and a positive effect on Theory of Mind (ToM) and executive control [1]. With regards to bilinguals' pragmatic skills, previous research has mainly focused on children and has provided mixed results. Studies with pre-schoolers reported superior bilingual performance in detecting violations of Gricean maxims and in understanding scalar implicatures [1]. Studies with older children, however, found no differences between multilinguals, bi-dialectals, and monolinguals in various implicatures [1].

We present preliminary results from research examining the effect of speaking two languages (bilingualism) or two closely similar dialects of the same language (bi-dialectalism) on irony interpretation and processing in young adults. We focused on irony for various reasons. First, to our knowledge, there has been so far no comprehensive examination of irony interpretation in multilinguals and bi-dialectals. A previous study found no effect of bilingualism on irony comprehension in school-aged children [2], but, in this study, the test on irony included only two ironic items (hence, irony comprehension was not reliably measured). Second, we hypothesised that, even though past research showed no bilingual effect on implicature understanding, a bilingual advantage might be found specifically for irony (in comprehension accuracy or processing time) for various reasons. From a theoretical perspective, it has been proposed that irony is a distinct pragmatic phenomenon that draws on a higher-order mindreading ability (second-order ToM) [3]. Thus, bilinguals might have an advantage in irony interpretation because of their superior ToM skills. Moreover, a previous study indicated that bilingual children relied more than monolinguals on tone of voice to judge a speaker's emotion behind an utterance, but only when the paralinguistic cue was inconsistent with semantic content [4]. This situation resembles irony where intonation indicates a different interpretation than the utterance's literal meaning. Finally, there is some evidence that bilinguals weigh pragmatic information more heavily than linguistic cues during language acquisition and processing [1]. Bi-dialectals were tested to examine whether the close similarity between the languages spoken modulates the cognitive outcomes of bilingualism (if any).

Thirty-three bilingual (in Greek and another language), 52 bi-dialectal (in Standard Modern Greek and Cypriot Greek) and 29 monolingual (in Standard Modern Greek) young adults were given: (1) An irony test in Standard Modern Greek (SMG). For irony, we used ironic criticisms, where the speaker provided a positive reply to mean something negative, with a teasing, jocular and critical (though not severely) intent [5]. Participants watched videos where one character asked the other whether s/he wanted one of two objects. The second character's reply (=target) 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). There were 12 items in each condition (Literal-no, Literal-yes, Ironic) and, within each condition, three items for each cue or cue combination. For irony, we used different ironic markers to determine whether bilingualism confers a global advantage in irony comprehension or whether the benefit is found only when irony is indexed by non-verbal cues (e.g. intonation, facial expression). Participants had to select the object the second person wanted (for irony, one object corresponded to the literal interpretation). Accuracy and reaction times (RTs) from the end of the target (e.g. "Yes, you know how much I like wearing red clothes") were recorded. (2) Mill Hill Vocabulary test [6]. (3) Matrix reasoning test for general intelligence [7]. (7) The Family Affluence Scale (FAS) [8] and parental education levels for socioeconomic status (SES).

Percentage accuracy and mean RTs by Condition, Cue and Group are presented in Table 1. We formed a composite score for SES by averaging the z-transformed FAS score and parental education levels (to more reliably measure SES). There were no group differences in SES ($F(2, 101)=0.016, p>.05$) or general intelligence ($F(2, 121)=1.511, p<.05$), but bilinguals had a smaller SMG vocabulary than the other two groups ($F(2, 119)=6.46, p<.05$). An Analysis of Variance (ANOVA) on accuracy with Group as a between-subjects factor and Condition as a within-subjects factor 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. Participants were slower in the Ironic than in the other conditions ($F(1, 80)=32, p<.05$). A further ANOVA on accuracy for the ironic items with Group as a between-subjects factor and Cue as a within-subjects factor 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 Intonation + Face condition ($p<.05$).

In general, we found some evidence that irony interpretation is more demanding than understanding literal meanings and that it is facilitated when more than one ironic markers are present. Nevertheless, there were no group differences in irony. Our results add to the growing body of evidence showing no differences between bilinguals, bi-dialectals and monolinguals in pragmatic interpretation, despite bilinguals' often-reported lower proficiency in the target language. We discuss these findings in the context of a recent proposal that bilinguals have a single, language-independent pragmatic system that develops and functions in the same way to that of monolinguals [2].

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

	Context		Irony				Context + Intonation + Face +		Literal Yes		Literal No	
			Intonation		Intonation + Face				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

References

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