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The Influence of Animacy, Givenness, and Focus on Object Order in Croatian Ditransitives

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/ BACKGROUND

Croatian is considered a free word order language (Siewierska 1998), and thus all relevant word orders are attested but their usage depends on pragmatic factors. Pragmatic factors like givenness, animacy, and focus and many other influence word order (Branigan et al. 2008). The current study investigates the influence of animacy, givenness, and focus on word order preference in ditransitives sentences. In this study we consider an element *given* (GIV) if it has been mentioned in the context sentence; we controlled for *animacy* (AN) as a binary distinction between human and inanimate; and the focus (FOC) contexts were created with questions so the element in FOC is the one that answers the question.

/ METHODOLOGY

We have used an online Acceptability Judgment Task (AJT) with the necessary contrasts of the three factors we are investigating. A total of 82 (mean age=23.3) native speakers of Croatian completed the AJT. The structure of the AJT was a contexts sentence and then the target sentence displayed in 4 word orders that consisted in a combination of the verb (V), indirect object (I), and direct object (D) (VID,IVD, VDI, DVI). The word orders were randomized for each participant and each of them was judged on a 5-point Lichert scale. The target conditions are presented in tables 1 and 2.

/ TABLE 1: CONDITIONS W/O FOCUS

Givenness	Balanced AN		Unbalanced AN
	Both AN	Both InAN	I AN
D-GIV	1	1	1
I-GIV	1	1	2
No-GIV	1	1	2
Total	6		6
		11	

/ TABLE 2: CONDITIONS W FOCUS

FOC	Both AN	I AN
I FOC	1	1
D FOC	1	1
Subject FOC	1	1
Total	6	

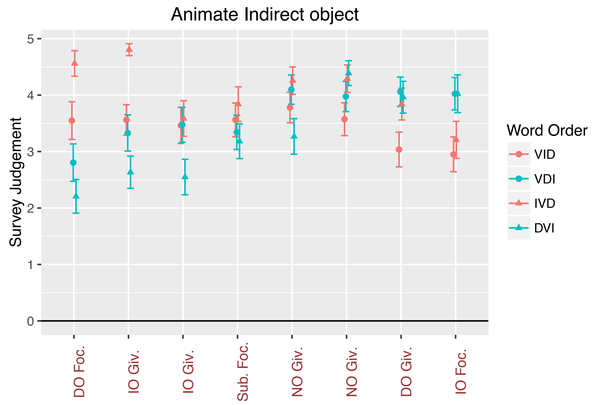
This setup gives us a total of 12 contexts of combinations of the three factors distributed over 17 examples. Originally there were supposed to be 2 examples of D-GIV and I-AN but one was excluded due to a completion error.

Example of AJT question:
(1)) CONTEXT:
A: Imaš li još uvijek onaj svoj kalkulator?
have-2nd.SG Q-particle more still that-ACC your-ACC calculator-ACC
B: Ne, nažalost nemam, sad koristim onaj na mobitelu.
no unfortunately do_not_have-1st.SING now use-1stSING that on mobile-LOC
TARGETS:
VID: Pred puno godina sam dala nećaku kalkulator
ago many years have-AUX gave-1stSING.FEM nephew-DAT calucator-ACC
VDI: Pred puno godina sam dala kalkulator nećaku
IVD: Pred puno godina sam nećaku dala kalkulator
DVI: Pred puno godina sam kalkulator dala nećaku
'A: Do you still have that calculator of yours? B: No, unfortunately I don't have it, now I am using the one in my mobile. Many years ago **I gave the calculator to my nephew**.' (VID, VDI, IVD, and DVI alternatives are provided for the participant to judge).
CONDITION: IO Animate, DO Given

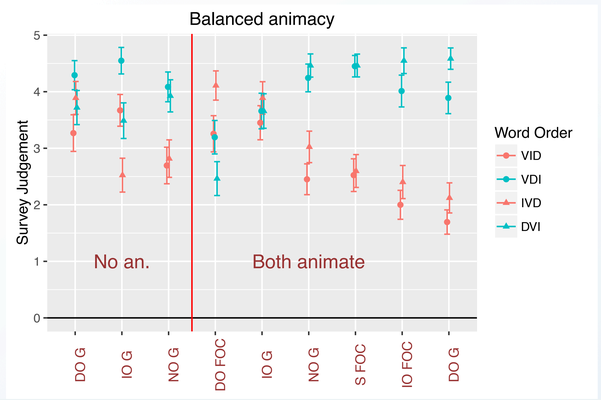
/ DATA

Most of the word orders were judged above the grammaticality line (judgment>2.5) which indicates that in Croatian all the investigated word orders are possible.
The effect of each factor can be noticed in the neutral conditions: we checked for AN effect in the No-GIV and S-FOC conditions, for GIV we balanced animacy, and for FOC we looked into the FOC conditions with balanced AN. Images 1 and 2 display the judgments of all 4 word orders in all conditions. The images are divided in balanced AN (1) and unbalanced AN (2).

/ IMAGE 1: WORD ORDER PREFERENCES IN INDIRECT ANIMATE



/ IMAGE 2: WORD ORDER PREFERENCES WITH BALANCED ANIMACY



Feel free to use the QR code at the top of the poster to see the average judgments for all conditions.

/ RESULTS

We used Linear Mixed Effects to set up a model where word order and each factor is a predictor (factor model) and a null model with only word order as a predictor (null model). We conducted ANOVAs as comparisons of each factor model with the null model. The statistics reveals that AN and FOC have an effect on word order (**p-value=2.2e-16**) while the result for GIV was not significant. The images show that AN has an effect: the animate object prefers to be placed before the inanimate one, and FOC places the focused object in second object position.

The results do not indicate that Croatian speakers take GIV into consideration for word order preference as when animacy is balanced the preferred word orders are DO-IO (VDI and DVI) regardless of which element is given. Image 2 shows that DO-IO is preferred even in IO-GIV when nether object is AN. Additionaly in the 'Both Animate' section of Image 2 there is a strong preference for DO-IO orders with DO-GIV but in IO-GIV all word orders are preferred to the same degree.

The same DO-IO preference is obtained in all neutral conditions (No-GIV/No-AN and No-GIV/Both-AN in Image 2).

In order to establish a hierarchy of the three factors we have to look into the examples where two factors are competing. We use the +FOC conditions (Table 2) in order to establish whether FOC or AN is more relevant. FOC is the stronger factor because we can only see an AN effect when neither object is in FOC (Sub-FOC in Images 1 and 2). In the other conditions the focused object has a strong tendency to be placed second and AN does not have an effect (IO FOC in Image 1).
For establishing which is a stronger factor between AN and GIV we have to look at the judgements of IO AN and DO GIV because here we can see the interaction of the two factors on different objects. Unfortunately, we were left with only one example in this section due to a compiling error in the AJT and here the participants had a preference for DO-IO orders (Average judgements: VID=3.03 IVD=3.84 VDI=4.06 DVI=3.96). However, since there was only one example of AN/GIV contrast left and the effect of GIV was unclear in the balanced AN conditions, we conclude that AN is a stronger factor than GIV.

/ DISCUSSION AND CONCLUSIONS

This task revealed that AN and FOC are relevant factors for word order choice in Croatian ditransitives and that animates precedes inanimate and [–FOC] (background) precedes [+FOC]. The statistical analysis found no clear evidence of givenness effect since when animacy is neutral DO-IO is the preferred word order. DVI seems to be the order with widest contextual applicability since it is never judged with a low score. This could entail that in ditransitive structures DO-IO is the underlying word order, nevertheless a more precise test is needed in order to establish this. With this task we can conclude that givenness has an unclear effect on Croatian word order. Thus we propose a hierarchy of the factors to be **Focus>Animacy>Givenness**.

Selected references:
Branigan, H. P., Pickering, M. J., & Tanaka, M. (2008). Contributions of animacy to grammatical function assignment and word order during production. *Lingua, 118*(2), 172-189.
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Kiss, K. É. (1998). Identificational focus versus information focus. *Language*, 245-273.
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Siewierska, A., and Ludmila Uhlirova. (1998). An overview of word order in Slavic languages. In A. Siewierska (Ed.), *EMPIRICAL APPROACHES TO LANGUAGE TYPOLOGY* (Vol. 20, pp. 46). Berlin: Mouton de Gruyter.

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