Having to predict a (native or non-native) partner's utterance increases adaptation in L2

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Effects of structural priming and adaptation have been argued to arise as a result of the computation of prediction error (ChangEtAl2006, Jaeger&Snider2013). Top-down factors such as explicit instructions to predict (BrothersEtAl2017) and social characteristics of the interlocutor (WeatherholtzEtAl2014) have been shown to modulate the size of prediction and priming effects. Within the context of second language (L2) acquisition, the view of priming as an (implicit) learning mechanism has led to the exploration of structural priming as a tool for L2 learning (McDonoughEtAl2015) and offered a potential theoretical framework for more unified study of L2 processing and learning (Jackson&Hopp 2020). Yet while of immediate relevance to applied and theoretical goals in L2 acquisition, the modulating roles of top-down factors such as explicit prediction and speaker characteristics on L2 priming and adaptation remain largely unexplored. We present evidence from two written production priming experiments with Korean L2 learners of English, focusing on double-object datives, to address the following questions:

RQ1: Do task instructions to predict a partner's utterance increase effects of (i) immediate priming, and (ii) longer-term adaptation as measured by change from baseline to posttest?

RQ2: Do the partner's social and linguistic status as a native or non-native speaker affect the size of (i) immediate priming, and (ii) longer-term adaptation?

Method. In both experiments, participants in the 'guessing-game' (GG) group (Exp1: *n*=18, Exp2: *n*=27) had to predict how a virtual partner would describe a picture prior to seeing the actual prime sentence, which they then evaluated as the same or different from their initial guess (Fig1). This manipulation was intended to explicitly induce prediction and computation of prediction error. Participants in the control group (CC; Exp1: *n*=17, Exp2: *n*=26) only re-typed the prime sentence in a standard repetition priming procedure (Fig2). The virtual partner consistently used double-object datives (DOs: *The girl fed the squirrel a nut*) with ditransitives, thus priming and adaptation should manifest in terms of increased use of DOs compared to prepositional datives (POs: *The girl fed a nut to the squirrel*), the strongly preferred construction for Korean learners (Kaan&Chun2018). The partner was presented as a native speaker of English ('Jessica') in Exp1 and as a Korean learner of English ('Soo-Min') in Exp2. In a baseline-priming-posttest design (Table1), participants alternated between repeating(CC)/guessing(GG) the partner's picture descriptions (primes) and describing pictures themselves (targets).

Results. Mixed logit models showed increases in DO production from baseline to priming phase in both experiments (*b*s>2, *p*s<.001; Fig3). While effects appeared numerically larger in GG vs CC groups, interactions with group were not robust (Exp1: *b*=1.32, *p*=.06; Exp2: *b*=.52, *p*=.3). Yet group significantly modulated change from baseline to posttest (Exp1: *b*=1.62, *p*=.03; Exp2: *b*=1.31, *p*=.006), with GG participants continuing to produce DOs more frequently than CC participants. While priming effects were numerical smaller in Exp2 than Exp1, experiment did not emerge as a robust modulator in a combined analysis of data from both experiments.

Discussion. In both experiments, explicit instructions to predict a partner's utterance (**RQ1**) led to greater adaptation in terms of change from baseline to posttest. Notably, the effect of this manipulation (GG/CC) only became robust in the posttest, suggesting it affected longer-term adaptation, or learning, more strongly than short-term activation of a primed structure. Future studies including delayed posttests will need to examine the longevity of this effect, yet this finding presents preliminary evidence to suggest that applied approaches seeking to use priming as a tool for L2 learning may benefit from incorporating a forced prediction or guessing component. Meanwhile, no clear evidence for modulation of L2 priming by social factors (**RQ2**) emerged. This is unexpected in light of findings showing native speakers adapt more to talkers using a more standard variety (WeatherholtzEtAl2014), but aligns with the only previous study of social factors in L2 structural priming (Chun&Kaan2020), which suggested such effects may be more complex than predicted by models based on data from native language processing.

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Table 1*. Experiment design. (NB: no lexical boost)*

Phase	*Experimental items*	
	# and structure of prime-target pairs	
Baseline	6	prime: (in)transitive target: ditransitive
Priming	8	prime: ditransitive: DO target: ditransitive
Posttest	6	prime: (in)transitive target: ditransitive

Figure 2*. Prime trial, CC condition (Exp1)*

Figure 1. *Prime trial, GG condition (Exp1); sample participant responses in blue*

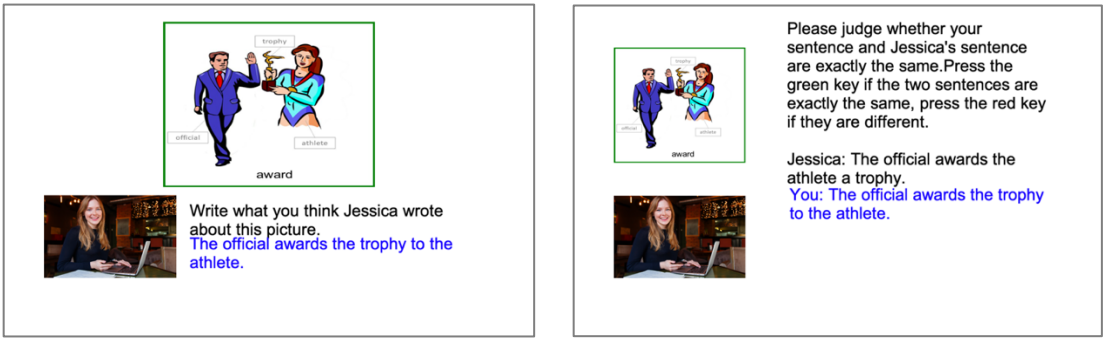

Figure 3. *Prop. DO/(DO+PO) by experiment, group and task phase. (Participant Ms, 95%CIs)*