

## Past Participle Forms are Predicted by Argument Structure

Cilene Rodrigues/PUC-Rio (crodrigues@puc-rio.br)

**Past Participles: long & short forms** An interesting current development in Brazilian Portuguese (BP) involves the short form participles (in the perfect, and often the passive as well) that don't look like the corresponding infinitive, as in examples (1). Forms like *acender/aceso* are largely frozen and examples of this sort are widely found in Italian (e.g. *smettere/smesso* 'put'). Throughout the Romance languages most of these reflect diachronic developments from the so-called *t*-stems inherited from Latin. Notably, these irregular participles/short forms can be called *athematic*, as they lack the theme vowel (preserved in *acendido*, but lost in *aceso*). BP is unique among Romance language in allowing the emergence of short forms that do not reflect any inheritance from Latin, but are nonetheless increasing in attestation, as (1d,e)

**Short past participles as morphemes** As examples like (1d,e) reveals, one tempting generalization that can be put forth is that the innovative participial forms are identical to the 1sg.Present, although this is not the case for the entrenched forms as (1b). Thus, Chagas (2007) puts forth the view that the relation between the 1sg.Ind and the athematic participles is increasing in productivity. That is, speakers use 1sg.Ind as the basis to form short past participles, even though, the 1sg.ind has no privileged morphosyntactic closeness to participial forms that would not be shared by other inflected person/mood combinations. Hence, according to this analysis, past participle forms are morphemes (Aronoff, 1994), as there is an arbitrary inflectional mapping between 1sg.ind and short form participles resulting from 'purely morphological correspondences', showing no sensitivity to syntactic properties of the verbs in question.

**Short past participles as pruned structures** Lobato (1999) analyzes short forms as involving an alternative spell-out, without the theme vowel and the *-d-* morpheme (the nature of which has seen various proposals across the Romance languages, e.g. deverbaler, resultative, etc.). Under this analysis, the short-forms are alternate spell-outs of a structure. The intuition is that shorter forms reflect lesser structure. Thus, the specifics of the hierarchical internal structure of words come to be relevant in understanding their morphophonological form. This mapping between syntax and morphology is also explored by Embick (2004) for English past formation.

**Testing these analyses** To test the two analyses above, we put forth an experiment using wug forms. Wug-testing is useful in this case as all of the forms presented have a token frequency of zero; and participants, in rating the goodness of short-form participles, can in principle rely on the phonological form, the syntactic environment, on morphological paradigms (e.g. 1sg.ind) or neither of the above. The experiment consisted on presenting frames as (2)-(3) in which the infinitive (e.g. *pandar/malir*) was presented in the first clause, and the 1sg.indic (e.g. *pando/malo*) in a later clause, before eliciting a question of the well-formedness of short vs. long forms in combination with the perfect auxiliary. Crucial to the experimental design was an equal number of trials in four different verb classes: unaccusative, psych-verb, ditransitive, transitive. Each verbal class was represented by 6 wug-forms, 2 for each verbal conjugation (2 *-ar*, 2 *-er*, 2 *-ir*). Filler trials involved unrelated morphophonological alternations such as diminutive and nominalizer choices.

**Results** Unaccusatives displayed the highest acceptability for short forms, followed by transitives and ditransitives (the difference among which was non-significant). Psych-verbs showed the least acceptance of short-forms. These results suggest that, when forming past participles, speakers pay attention to the argument structure of the verb in question.

**Analysis** A straightforward interpretation of these facts emerges rather easily. Specifically, under the hypothesis that unaccusatives have no little *v*, (di)transitives have a little *v*, and psych verbs little *v* plus Causer (e.g. Pesetsky 1995), the ranking of the three levels of omissibility in short-forms directly corresponds to the amount of structure. This is in accordance with Lobato's analysis. Those verbs with the least amount of heads tolerate short-forms the most, while those with a richer structure prefer to expone it using the long form. Suppressability of *-d-* thus corresponds to amount of structure. The relevance of structure may not be limited to simply counting the number of arguments; in addition, event-structural properties of the verbs (as diagnosed by the relative admissibility of telic-oriented adverbs and *get*-passives) pair along with the well-formedness of short-form passives in the set below.

**Conclusion** Suppression of the theme vowel and *-d-* in the short-form participles is not simply a morphomic generalization based on analogical reasoning stemming from Latin *t*-stems (*acendo/aceso*). Instead, speakers reliably show tolerance for short-forms when they correspond to smaller amounts of argument structure.

(1)

	Infintive	1SgPast	1SgPres	Passive	Perfect
a.	apagar	apaguei	apago	ser apagado	ter apagado
b.	acender	acendi	acendo	ser aceso	ter aceso
c.	comprar	comprei	compro	ser comprado/compro	ter comprado/compro
d.	Trazer	trouxe	trago	ser trazido/ ser trago	Ter trazido/trago

(2) Eu acho que *pandar* a casa todos os dias é importante para manter tudo limpo. Eu *pando* a minha casa bem, mas minha mãe, que é mineira, tem um capricho incrível e *panda* muito bem. No ano novo, depois que ela tinha (**pando/pandado**) toda a casa, ficou um cheiro delicioso.

(3) *Malir* dinheiro para familiares é muito perigoso. Eu nunca *malo* grana para ninguém, mas o Fernando vai ficar na miséria. Ele *male* toda a grana que ele tem para os primos. Se eu fosse ele, eu não tinha (**malido/malo**) 40,000 Reais para aquele primo esquisito dele que mora na Alemanha.

## References

- Aronoff, M. 1994. *Morphology by Itself*. Cambridge, MA: MIT Press.
- Chagas, P. 2007. Athematic Participles in Brazilian Portuguese: A Syncretism in the Making. *Acta Linguistica Hungarica* 54.2: 119–128.
- Embick, D. 2004. On the structure of resultative participles in English. *Linguistic Inquiry* 35: 355-292.
- Lobato, L. 1999. Sobre a Forma do Particípio do Português e o Estatuto dos Traços Formais. *DELTA* 15.1
- Pesetsky, D. 1995. *Zero Syntax*. Cambridge, MA: MIT Press.