Ways to Protolanguage 3

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Contents

Introduction

The present volume unveils the vast scope and the huge potential of contact linguistics and protolanguage studies. It is demonstrated here how language contact and protolanguage can be approached from the perspectives of epistemology, sociology, culture studies, cognitive studies and cognitive linguistics. Interpreting and language training are also addressed. The epistemological and the socio-cultural aspects are studied by Bertolotti and Upchurch. The works by Boguska-Kawałek and Kłos can also be "classified" in this group, as they focus around the phenomenon of discourse. The social and the civilizational motives underlie the contributions by Stępkowska and Iwanowski – the former refers to interpreter social competence (hence at least indirectly also to interpreter training), while the latter promotes a civilizational rationale for language education. The group of articles that relate to cognitive studies includes texts by Adornetti and a collective work by Oliveira da Motta Sampaio, Improta França and Rezende Maia. The label "cognitive" as used here is only a working category, and the content of each of the above-mentioned contributions illustrates a vast spectrum of research undertaken in this domain. Krzeszowski's work stays in close relation to cognitive linguistics, but its content directly pertains to the studies of prelanguage, since it discusses selected terminological problems that these studies should take heed of. Ultimately, the articles by Dunbar, Napierała, Słoboda, Skrzypczak, Tamas and Wach focus on issues of protolanguage, language change and contact linguistics. This overwhelming variety of topics provides insight into the conceptual richness of the domain of contact linguistics and studies on protolanguage. It is hoped that the broad thematic scope of the volume can be inspirational for a large number of researchers of language, human communication (including text studies and translation), culture and literary studies, as well as broadly understood education.

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Does Time Perception Influence Language Processing? Self-Paced Reading Evidence of Aspectual Coercion in Durative Events

Abstract. In recent decades, several articles have been published on Aspectual Coercion (Pustejovsky 1995; Jackendoff 1997). The mainstream hypothesis, Iterative Coercion, proposes that punctual verbs such as "punch" combined to durative modifiers such as "for five minutes" induce an aspectual mismatch, triggering an iterative interpretation. Psychophysical and neurophysiological experiments provide evidence for the iterative coercion hypothesis (Todorova *et al.* 2000; Brennan, Pylkkännen 2008). However, since the results found so far for punctual verbs could on the whole be predicted by the aspectual coercion features of the punctuality and durativity discussed in linguistics theory, a trivial question has failed to be asked: can all prediction be posed to durative verbs? In the present work, we propose that this aspectual coercion can also be seen as a referential change from a single individual event to a set of events. Here we launch the hypothesis that when the event is larger than its mean duration, such as "dance a waltz for 20 hours," an iterative meaning is triggered once the event cannot consume the whole duration described by the adverbial phrase. As for the acquisition of the duration of events, we propose that a language external system as the Internal Clock Model (Church 1984; Meck 1996 *et al.*) may be responsible for tracking how long events last in the real world. We tested our hypotheses in a self-paced reading experiment using the same sentence in four duration conditions (minutes, days, months and years). Our results present increased reading times for [year] compared to [minutes] and a later but stronger

effect for [days] compared to [months] and [years] conditions. The reason for the different behavior remains an open question.

Keywords: time perception, language processing, aspectual coercion, experimental linguistics.

Introduction

In linguistics, *punctuality* and *durativity* are two settings of just one among several parameters of *Aspect*, a linguistic property concerning the developmental frame of a linguistic event. *Aspectual Coercion* is a phenomenon seen in the aspectual mismatch between non-resultative punctual verbs such as "sneeze" and a durative modifier such as "all day long." As for the cognitive mechanisms involved in solving the mismatch, the mainstream hypothesis, *Iterative Coercion Hypothesis*, proposes that durative contexts trigger a third and epiphenomenal parameter resulting in an iterative reading of linguistic punctual events (Pustejovsky 1995; Jackendoff 1997).

However, linguists do not have a clear definition for punctual events and it seems that they overestimate their intuition. For example, some papers use verbs such as [dive] and [jump] as if they had the same aspectual features as [break] or [sting]. This classification can lead us to a problem concerning the event-duration perception. Even if [jump] sounds fast compared to [dance] or [sleep], which in a longer duration scope gives us the perception of a point in a timeline. On the other hand, it sounds durative when compared to [break] or [sting], which in a narrow duration scope gives us the perception of a small line in a timeline. The point to be discussed can be summarized in the following question: Is linguistic perception of duration also influenced by Weber Law? If so, we can not say that aspectual coercion is only a linguistic problem as it may involve other cognitive processes.

Some experimental studies using behavioral and neurophysiological methods have been looking for empirical evidence of aspectual coercion. Their results are consistent with the iterative coercion

hypothesis,[1] presenting increased times for iterative condition. However, as the punctuality parameter from Linguistics is enough to predict the results of the so-tested punctual events, it seems to have been taken for granted that durative verbs in durative contexts should not have any effect as they do not present any kind of linguistic mismatch. Our discussion lies at this point: what if durative verbs present the same effects?

In this work we propose (i) that aspectual coercion can also be seen as a referential change from a single individual event to a multiple/set of events. Our hypothesis predicts that durative verbs such as "sing" in very large contexts such as "for three hours" will present the same effects found so far for punctual verbs as a single event is not able to fill the whole timespan described by the adverbial phrase.

As a consequence of our proposal, we are supposed to point the process by which one can acquire the mean duration of an event and know that it cannot last for so much more. At this point we also propose (ii) that a language external system is responsible for counting, storing and comparing durations that humans experienced during their lives. A great candidate seems to be the *Internal Clock Model* (or *Pacemaker-Accumulator Model*, Treisman 1984; Church 1984; Meck 1996). The model consists in a pacemaker emitting "ticks" which are counted by the accumulator, processed by the working memory and stored in the reference memory. In a hypothetical Language-Time Perception interface, the parser should pick up event-duration properties from reference memory at the moment of lexical activation.

In order to test the proposal in (i), we ran a self-paced reading experiment in 36 volunteers from Federal University of Rio de Janeiro. Stimuli are composed by 12 sentences in four durative contexts: [minutes], [days], [months] and [years]. Our results present increased reading times for [days], [months] and [years] compared to [minutes] condition. However, while [days] condition present longer times in the word describing the duration, [days] and [months] present a later and stronger effect. The nature of the different behavior between conditions remains an open

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1   It is important to remark that Pickering *et al.* (2006) present two self-paced reading and one eye tracker experiments in which they did not find any significant results. However a significant effect was found in the second eye tracker experiment presented in the paper. Also, the MEG result found by Brennan and Pylkkännen (2008) is usually considered weak compared to other neurophysiological results.

question. The proposal in (ii) remains as an explanatory hypothesis which we intend to present more empirical evidence in the near future.

1. Aspectual coercion in theoretical and experimental linguistics

Considering the context of a sentence as being fully specified by the co-herent combination of their lexical items and their syntactic structures (*Strong Compositionality*), sentences like (1a–b) should have similar meanings. However it is not the case as (1a) is not understood as if the clown performed a very long jump lasting for about ten minutes, neither (1b) is understood as if the clown did several running events. In this sense we need an explanation of how our linguistic processor can assign different meanings to verbs inserted in the same syntactic and lexical contexts (*Weak Compositionality*).

1.   a.   The clown jumped for ten minutes.
      b.   The clown ran for ten minutes.

The difference between these verbs should thus lie in their lexico--syntactic or in their lexico-semantic properties. Philosophers of language argue that verbs have different structural, aspectual and eventive properties. Typology studies thus proposed a categorization of verbs into different event classes. In a classical vendlerian classification (Figure 1), "run" is classified as an activity (*e.g.* atelic durative event) while "jump" is classified as an achievement (*e.g.* telic[2] punctual event).

Based on some properties pointed by event classification studies, the literature in Experimental Linguistics generally tests the Iterative Coercion Hypothesis (Pustejovsky 1995; Jackendoff 1997) proposing that punctual verbs used in durative contexts are coerced to an iterative meaning. The findings present positive evidence in audio-visual cross modal experiments (Piñango *et al.* 1999), in classic linguistic protocols as self-paced reading experiments (Todorova *et al.* 2000; Brennan, Pylkkän-nen 2008), eye-tracker experiments (Pickering *et al.* 2006 experiment 4; Townsend 2013) and kinectic reading/RSVP with neurophysiological methods as EEG (N400-like component: Paczynski, Kuperberg 2011)

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2   In the literature, events having an inherent endpoint such as "built a house" or "reach the summit" are named *telic events*. Atelic events are those which can last indefinitely such as "to work."

and MEG (AMF component at about 400ms: Brennan, Pylkkännen 2008). Negative results have also been found in self-paced reading and in eye tracker protocols (Pickering *et al.* 2006 experiment 1, 2 and 3).
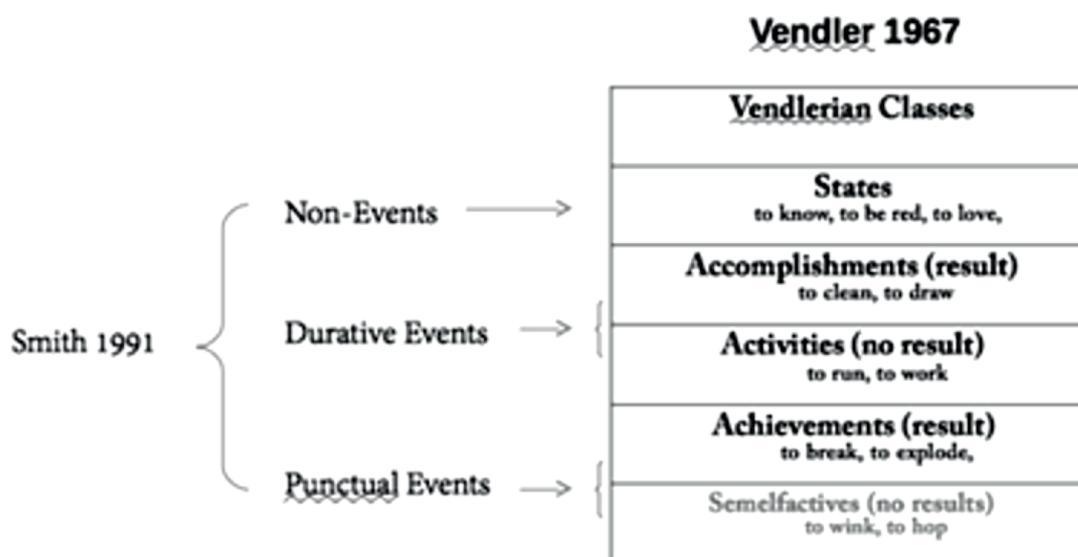
Figure 1. Interception of Vendler (1967) and Smith (1991) event classification. Semelfactive class was proposed by Smith (1991) and completed the logic of two punctual and two durative classes

Linguists have a theory and experiments evidencing the psychological reality of aspectual coercion in language processing. However, as the theory came much earlier than the experiments[3] some highly used concepts have any empirical basis. Are we really looking at the results in the right way or have event classification studies biased their view on the meaning of these data? In the next section we discuss the theory and results from a different perspective.

2. A critic to the mainstream approach on aspectual coercion

In the first section we discussed some event classification works which pointed the parameters that we should look for when studying linguistic events. However, some critics can be pointed to event classification works. As raised by Rosen (1999: 4):

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3   The first event classification was proposed by Aristotle in the ninth book of *Metaphysics*. His proposal has been taken by Kenny (1963) in the Philosophy of Language. The first experiment on aspectual coercion dates from 1999 (Piñango *et al.* 1999).

> [Event Classification...] is not explanatory: It does not address how events are represented in the grammar; nor does it try to determine where events are encoded – within the lexicon, the semantics or the syntax.

In reflection to the non-explanatory and non-objective approach of event classification studies, several proposals have been presented since Aristotle's event classification were raised up by Kenny (1963), and at least up to Dölling (2013), each one working on their own parameter--combination set-up (*cf.* Sampaio, França 2010).

Concerning the aspectual coercion hypothesis, it is possible to divide them in at least two main groups. The first one looks at the settings in an aspectual property of an event (punctuality/durativity) which is coerced in contexts presenting the opposite settings (Figure 2, see Brennan, Pylkkännen 2008 for more details). The second group looks at the change in event classification as the trigger for coercion. It is the case of Dölling (2013) who proposes his own event classification before pointing to nine different kinds of aspectual coercion. In our point of view, classification change can be seen as a consequence of a property shift. However, looking at the classification change makes it easier to predict more than one direction for coercion, which is the higher point of Dölling's proposal.

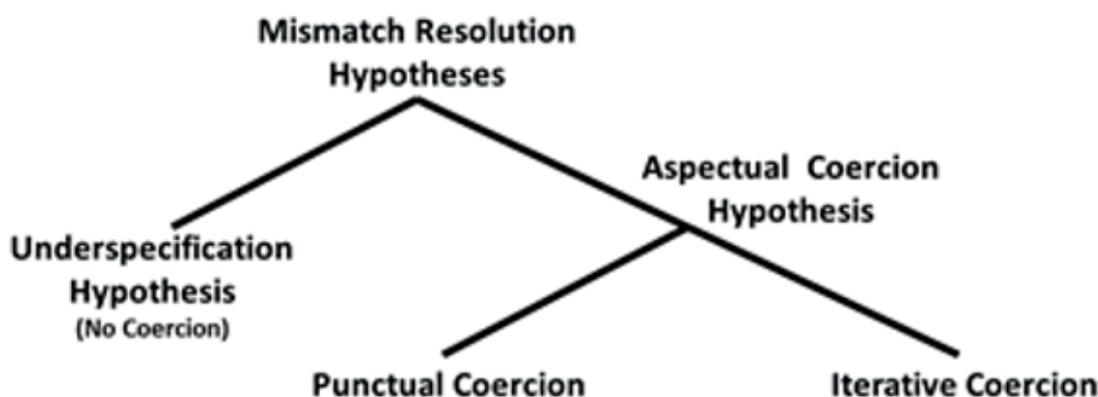Figure 2. Mismatch Resolution Hypotheses for punctuality/iterativity shift (adapted from Brennan, Pylkkännen 2008)

Dölling (2013) proposes a subtractive coercion, an effect of an incomplete event as in (2). Note that the verb [study] is atelic (*i.e.* does not have an inherent endpoint). In this sense, the sentences in (2) should be perfectly built for syntax and for aspect, but not for semantics and/or for pragmatics.

2. a. The boy studied for one minute before the final exam.

   b. #Fred played the sonata for one minute.

      (Dölling 2013: 2)

At this point, generative linguists just do not address the question. They argue that the answer lies in the world knowledge, a kind of mysterious box in which Linguistics can not look at and which the content is just picked up by the Lexicon/Encyclopedia during language processing. Other linguistic theories will look at Gricean Conversation Principles (Grice 1975) and at Pragmatics, which are still so far from a real understanding of the cognitive processes involved in the acquisition, refinement and in the performance of such cognitive knowledge.

However a number of works in different Experimental Psychology fields have been uncovering the processes underlying some points that are not entertained by Linguistics. One example is Time Perception, a research field that can pave the way to this controversial realm of event-duration knowledge during language processing.

3. A new look at aspectual coercion

Having robust evidence for iterative coercion and supporting an aspectual-based view of coercion effects, linguists seem to be convinced of their explanatory power for the aspectual mismatch. However, this belief has been keeping us from asking a very trivial question: what if durative events present the same effect? After all, once durative verbs and durative contexts have compatible aspectual properties, there are no reasons for thinking in a different way. However, one can wonder whether it really is an aspectual problem.

It is a consensus that the iterative meaning of punctual events is triggered by their inability to last for the timespan described by the adverbial modifier. Let us call this phenomenon *durational mismatch* from now on. Our very simple explanatory change on aspectual coercion not only has the same entailments as the traditional iterative coercion hypothesis but it also makes possible that even durative events present a coercion effect when used in very large timespans. In our approach, coercion triggers not an aspectual but a semantic or pragmatic mismatch which works for punctual and for durative verbs in the same way. This simple change also

improves the range of predictions and simplifies the explanatory power of coercion effects.

Our hypothesis needs at least two more contributions: (i) a theory of duration acquisition which will be discussed in the next section, and (ii) experimental results evidencing coercion effects on durative events, which are presented in the section 5.

4. Does Time Perception interfaces with language processing?

Even if future experimental results on durative events manage to support our hypothesis, it means that language processor has access to the mean duration of events. It is thus essential to describe how humans acquire the mean duration of durative events. At this point, the Time Perception Internal Clock Model seems to us a powerful and elegant way to describe the acquisition, storing and semantic/memory access of events duration during language processing. Time perception has been studied in the recent decades presenting evidence of an internal mechanism to keep track of time intervals in animals and in humans (Block 1990; Buhusi, Meck 2005).

Psychophysicists thus developed a model aiming at explaining and predicting the cognitive mechanisms involved in the psychological time. *Internal Clock Model* (or *Pacemaker-Accumulator Model*, Treisman 1984; Church 1984; Meck 1996) now has a large number of adepts and robust psychophysical evidence.
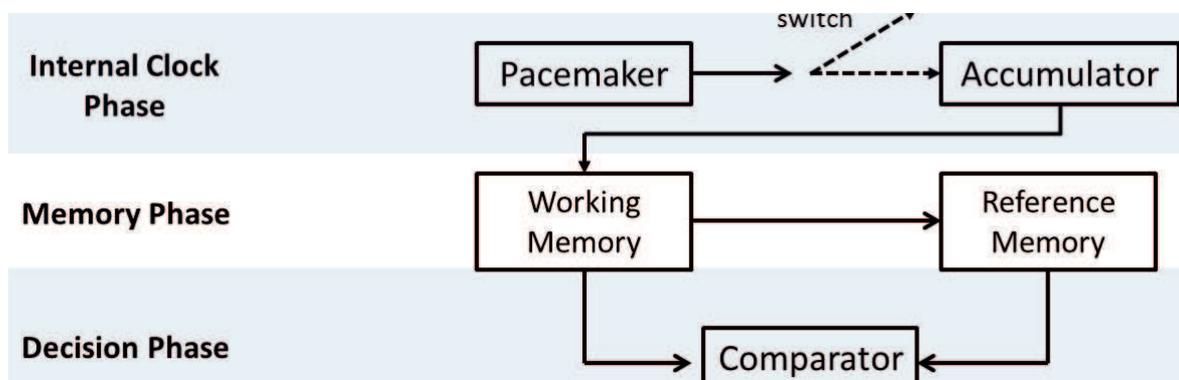

Figure 3. Schematic representation of the three-stage Internal Clock Model (adapted from Meck 1996)

A triphasic processor composes the model above. The idea consists in a biological pacemaker emitting regular pulses like a real clock. Once we take attention to an event-duration or to a time interval, these pulses are accumulated and then stored in our memory. This memory is then used in the ongoing task or just to refine the sense of how long an event last. For example, it is unusual to consider of a sonata played in just two minutes or of a long jump lasting for ten minutes. This sense of the meantime of events can thus come from the Gaussian distribution of all our memories about the duration of each event. The Internal Clock Model is a formal approach of how humans can acquire specific world knowledge about events. Reference memory on events-duration can thus easily output its content to semantics, interfacing constructionist models of language processing.

5. Experimental evidence on duration coercion

Iterative coercion has been strongly supported by experimental results. However, as far as we know, no experiments have been run to observe coercion of durative events. This is the challenge we are facing with the following experiment.

5.1. Methods

Participants: 36 native speakers of Brazilian Portuguese, ages between 18–25 years (19 females) participated in this test. They were Language, Speech Therapy or Engineering students at the Federal University of Rio de Janeiro and have normal or corrected to normal vision.

Stimuli: for this test we built a Latin Square design from a list of 12 durative verbs (1/3 of total sentences) and four periods of time: minutes, days, months and years. There were four versions of the experiment. For each of them, verbs were shown in a different modifier period as in (3) and (4).

3. Carla caminhou por dez [time period] na praia de Ipanema.

    Carla walked for ten [time period] on Ipanema Beach.

4. **Time periods**: (a) minutes, (b) days, (c) months, (d) years.

Procedures: the subjects were seated in front of a MacBook White 15" running Psyscope X B57 on Mac OSX 10.5.8. Stimuli were presented in a word-by-word self-paced reading with a simple interpretation question at the end of each sentence. Stimuli were presented in Times New Roman 24 white font in a black background for sentences. Questions were presented in a blue font. Ten practice sentences were presented to the participants before the test. The trials began with a fixation cross screen presented for one second. A series of hash tags was presented indicating the beginning of the sentence. Participants used the [spacebar] to advance through the sentence until they were presented with an interpretation question that they answered yes [k], in green, or no [l], in red. Subjects who did not reach 80% of accuracy (three participants) were eliminated from the analysis and replaced by another three subjects. The mean accuracy was 94% for the total of 36 subjects.

5.2. Results

For the words five to eight and for reaction times, results lasting more than six standard deviations below and above the mean were removed as outliers. This process eliminated 3.45% of the data. The last word was removed from the analysis to avoid some semantic wrapping up effects. The remaining data was organized and processed by IBM SPSS Statistics 20. A one-way ANoVA was run for each of the six relations (minutes/days, minutes/months, minutes/years, days/months, days/years, months/years). After the processing in SPSS, data was imported to MS Excel 2010 to build the graphics.

A visual observation of the reaction times (Figure 4) reveals a scalar result in which "minutes" is faster, days and months have the same results and year has slower times. However, no significance was found between them. Figure (5) presents the average reading times for each word. The first relevant difference was found in the duration word at segment 5 that presented larger times for [years] than for [minutes] $p < .05$. Days and months resulted in no statistical difference in this word. On the other hand, they present a more robust effect later in the eighth word of the sentence $p < .001$.
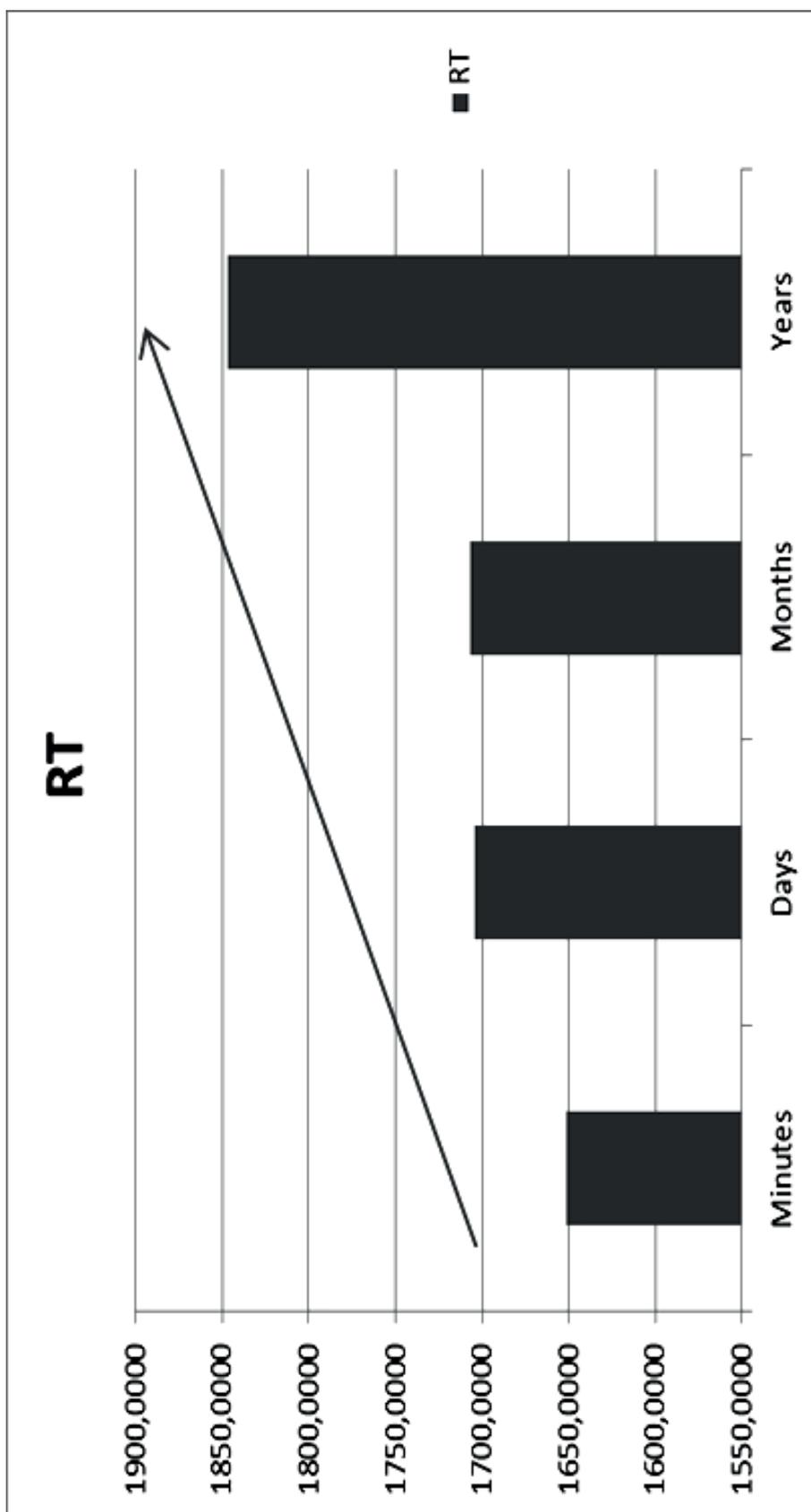
Figure 4. No significance in the reaction time between conditions
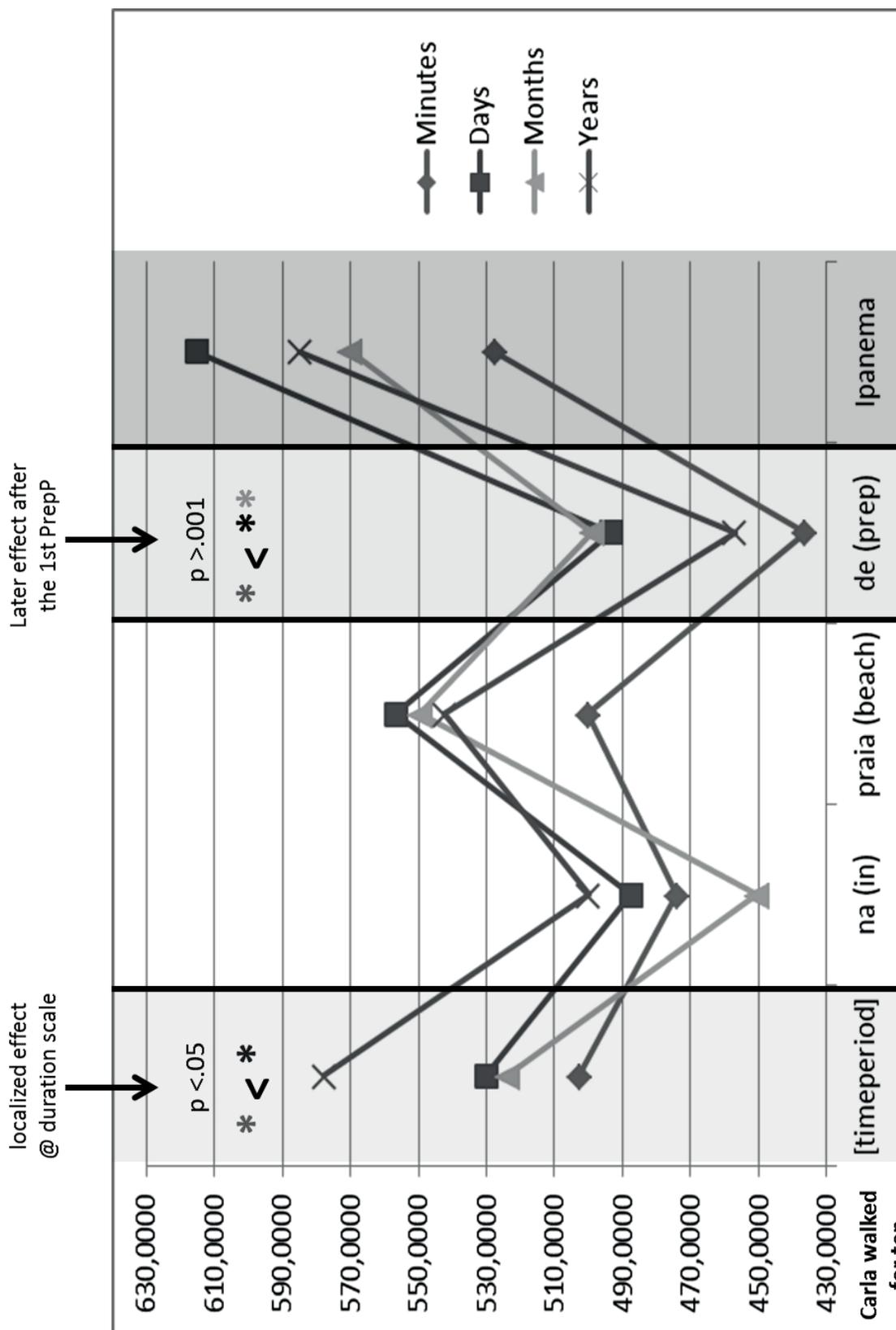
Figure 5. ANoVA reveals a significant difference for word describing event-duration between minutes-years conditions. A latter and more robust effect can be observed between minutes-days and minutes-months condition

6. Discussion

Our experiment found evidence of coercion for durative events, arguing against the aspectual-driven approach on coercion effects. However, a lot of work is still needed in order to get more robust evidence on our hypothesis.

6.1. How does this work contribute to language research?

On the one hand, theoretical works on aspectual coercion have been seeking alternatives to deal with the issue, instead of iterative coercion hypothesis but still in aspectual-driven hypothesis. One example is the proposal of the nine types of aspectual coercion in Dölling (2013). On the other hand, experimental works seem stuck with the idea of iterative coercion, since innumerous positive results have been found in very different methodologies, such as those in Piñango *et al.* (1999), Todorova *et al.* (2000), Pickering *et al.* (2006) and Brennan and Pylkkän-nen (2008). However, it is reasonable to notice that, as we pointed out, iterative coercion is not the only possible interpretation to their experimental results. Furthermore, no work has been done to verify whether durative verbs are also subject to aspectual coercion. Our experiment fills this gap by finding clues of the psychological reality of coercion in verbs embedded in larger durative contexts. Our results are consistent with the proposal that aspectual coercion is triggered by temporal modifiers lasting more than the average duration of the event. In this case, coercion operates a reference shift from a single event to a set of events and it raises the question of whether coercion is related to aspect or to a time magnitude.

6.2. On language and Time Perception

If our results are really related to a "duration-coercion," how do we know the average duration of an event? As we are studying duration, a reasonable way to solve the question is proposing an interface between the lexicon/encyclopedia with Internal Clock Models of Psychology's Time Perception. Such interface could explain how the human brain estimates duration of events (Church 1984; Treisman 1984; Block 1990; Meck 1996). As to why we found different results for the days-months conditions in comparison with the *years* condition, we observed a spillover

effect in the wrap-up of the sentence. As for the years condition, we have a localized effect in the time period word and a little effect at the end of the sentence. These different results can tell us something about the processing of this kind of sentence. A possible interpretation looks at larger timespans, as in the *years* condition, as being less natural for durative events than *days* and *months*, resulting in an earlier and localized effect similar to those reported in iterative coercion experiments.

6.3. Weak points and future improvements for this study

Why did we find different effects between experimental conditions? Our interpretation will look at this difference as a magnitude related problem. Once years are too large than other durational categories, it would elicit a higher semantic/pragmatic mismatch which is solved earlier in the sentence. As for days and months conditions, they are not too large and a possible temporal mismatch can be solved later in the sentence. However, there are other plausible interpretations. Another view will look at the possibility that days, months and years do not elicit continuous duration, but a cyclical meaning. A future experiment is needed to compare duration timespans such as *seconds*, *minutes* and *hours* with cyclical timespans such as those of *days* and *months*. Also we did not control the mean duration of events used in the experimental sentences, an important step to get a higher level of control for our stimuli. We are now working to develop a pretest aiming at controlling the mean duration of events.

Another open question is whether our effects happen only for the temporal dimension and not for distance and quantity, for example. A comparison experiment between different magnitude of dimensions would be an interesting step forward. As we can see, our experiment still needs some improvements. The reason for finding different results is still unclear.

Conclusions

The experiment above is consistent with our main prediction that coercion effects can be observed for durative verbs as well as for punctual verbs. In our proposal, aspectual coercion is a resource used by the language processor to reach a plausible meaning when an event is wrapped in a larger temporal context. However, some questions still remain about

the nature of our effects. Would an experiment controlling the scale of distance or quantity, for example, have the same results? This is where we are probably heading next.

Acknowledgements

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Stimuli list:

1. Carla caminhou por 10 [*time period*] na praia de Ipanema.
Carla walked for 10 [time period] in Ipanema Beach.
2. Liliane nadou por doze [*time period*] na piscina do clube.
Liliane swum for twelve [time period] in the club's pool.
3. Raquel brincou por trinta [*time period*] no pátio da escola.
Raquel played for thirty [time period] in the schoolyard.
4. Matheus jogou por cinco [*time period*] no time de futebol.
Matheus played for five [time period] in the football team.
5. Camila dormiu por quinze [*time period*] no quarto da colega.
Camila slept for fifteen [time period] in her friend's room.
6. Renato lutou por seis [*time period*] na academia de karatê.
Renato fight for six [time period] in Karate Academy.
7. Joana viajou por vinte [*time period*] no carro do Marcelo.
Joana traveled for twenty [time period] in Marcelo's car.
8. Eduarda correu por três [*time period*] na pista de corrida.
Eduarda ran for three [time period] in the cinder track.
9. Julia trabalhou por nove [*time period*] na loja de calçados.
Julia worked for nine [time period] in the shoe store.
10. Lucas ajudou por dois [*time period*] nas tarefas do amigo.
Lucas helped for two [time period] with his friend's works.
11. Isabelle dançou por oito [*time period*] no palco do teatro.
Isabelle danced for eight [time period] on the theater stage.
12. Maria estudou por nove [*time period*] no curso de turismo.
Maria studied for nine [time period] in the course on tourism.

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Conceptual and Textual Constellations in Aboriginal Australia

Abstract. The aim of this article is to present linguistic and pragmatic aspects of Aboriginal English in Australia as viewed against the general background of Aboriginal languages, creoles and cultures on the one hand, and mainstream Australian culture, on the other. A brief presentation of the two polarised background domains will lead to a closer characterization of contemporary Aboriginal English in terms of its potential to convey the universe of Aboriginal traditional concepts, as well as how it aspires to meet the demands of contemporary Australian discourses. Emphasis will be placed on those aspects of Aboriginal English, which require a greater cross-cultural sensitivity on the part of non-Aboriginal users of English visiting Aboriginal communities. These sensitivity factors will also be addressed with regard to legal affairs and educational policies. The article is intended for the general academic public in Poland and elsewhere beyond Australia, who would wish to access a survey of key issues involving Aboriginal condition in Australia.

This text largely draws upon research done by Australian scholars and is meant to mediate their ideas to the aforementioned public, namely, on this side of the planet. I personally met two prominent theoretical figures quoted extensively in this article, namely Michael Walsh of the Department of Linguistics at Sydney University, where I stayed for three months in 1993, and Stephen Muecke of the Sydney University of Technology, who allowed his time for an extensive interview and generously shared the gift of his books and other materials during my visit in 2005. My visits at the Koorie Centre at Sydney University and the Department of Immigration and Multiculturalism and Indigenous Affairs in Canberra in 2005 also largely contributed to the shaping of my views. Responsibility regarding the selection of issues and their verbal rendering rests on me.

Keywords: Aboriginal languages, Australian English, creoles, culture, pragmatics.

1. Terra Australis Incognita

In brief, Australia can be defined in terms of three powerful dichotomies that embrace the landscape and human condition in terms of material artefacts and socio-psychological domains. Australia can be viewed as a realm likened to both the planet Mars and botanical gardens (a dry and barren interior vs. fertile fringes and tropical rainforests). Australia is both remotely archaic and ultra-modern (geological past, endemic flora and fauna, Indigenous cultures vs. the latest developments in technology and lifestyles). Australia can be considered in terms of both the fatal shore and Arcadia (early convict and settler physical and emotional condition vs. modern urban and multicultural society). All these shortcuts in defining Australia amount to the overstatement which suggests an assumption that in modern times even boomerangs require sophisticated remote control GPS navigational systems and the unique quality of Australian visual arts and literary imagery makes its presence internationally.

Australia, or *Terra Australis Incognita*,[1] stands out as an exceptional entity – art of the prehistoric Gondwanaland supercontinent, isolated from the rest of the world, its landscapes providing home to unique forms of flora and fauna. The First Australians are one of the longest continuing cultures on the planet . They were the first custodians of the land, which for over 40 000 years has been the pillar for their diverse societies. Despite their apparent Stone Age simplicity, Aboriginal cultures display a rich and highly intricate semiotic fabric that reflects the inventive mind embracing a coherent universe of deep time-space relationships. These organically inscribe the tribe along with totemic land features into an iconographic mode, fully integrated with the *Dreamtime* – the Aboriginal equivalent of the Book of Genesis, the time when the "world was sung into existence." *Songlines* (or *Song Cycles*), the invisible tracks combining landscape features, chanted in words, provide an equivalent of Aboriginal epics, not lesser than those of European traditions, *The Iliad* and *The Odyssey,* or *Beowulf*.

After the first white settlement, following the First Fleet's arrival in 1788, Indigenous Australians suffered physical and spiritual

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1 *Terra Australis Incognita: próba definicji poprzez kontrapunkt* (Skrzypczak 2010).