RL Vol. 12.4 2014

Research in Language

edited by
IWONA WITCZAK-PLISIECKA, EWA WANIEK-KLIMCZAK AND JAN MAJER

WYDAWNICTWO
UNIWERSYTETU
ŁÓDZKIEGO

ŁÓDŹ 2014

EDITORS

Iwona Witczak-Plisiecka, Ewa Waniek-Klimczak, Jan Majer – University of Łódź
Faculty of Philology, Department of English Language and Applied Linguistics
90-236 Łódź, Pomorska 171/173

PUBLISHING REVIEWERS

Hanna Pułaczewska (University of Regensburg), *Agnieszka Piskorska* (Warsaw University)

All papers published in RiL have been blind-reviewed by at least two independent readers

EDITING AND TYPESETTING

Przemysław Ostalski

COVER DESIGN

Barbara Grzejszczak

Printed directly from camera-ready materials provided to the Łódź University Press

Published by Łódź University Press
First Edition. W.07023.15.0.C

Printing sheets 7,875

ISSN 1731-7533

Łódź University Press
90-131 Łódź, Lindleya 8
www.wydawnictwo.uni.lodz.pl
e-mail: ksiegarnia@uni.lodz.pl
phone (42) 665 58 63, fax (42) 665 58 62

CONTENTS

TENSES, DATES AND TIMES*

KEPA KORTA
University of the Basque Country
kepa.korta@ehu.eus

MARÍA PONTE
University of Seville
mdeponte@us.es

Abstract
This paper presents a theory of utterance content that is neutral with respect to some of the key issues in the debate about the proper semantics of tense. Elaborating on some ideas from Korta & Perry (2011), we defend a proposal according to which utterances of both temporally specific and temporally unspecific sentences have a systematic variety of contents, from utterance-bound to incremental or referential. This analysis will shed some light on the contribution of tense to what is said by an utterance.

Keywords: time, tense, critical pragmatics

1. Introduction

Utterances of temporally unspecific present-tensed sentences seem to express the same proposition as utterances of temporally specific present-tensed sentences, when both are uttered at the same time. That is, an utterance like "Mary is laughing (now)",[1] uttered at 4 p.m. on Monday October 21, 2013 certainly seems to express the same proposition as "Mary is laughing at 4p.m. on Monday October 21, 2013" (uttered at that time and date). The speaker would say the same thing. But then, the utterances clearly differ in what is usually known as cognitive significance: the hearer can rationally accept one and reject the other. From the point of view of the speaker, depending on the circumstances and her intentions she will choose one instead of the other. The utterances differ in cognitive motivation and cognitive impact.

We seem to face a dilemma here. If we focus on intuitions on same-saying, we conclude that both utterances express the same proposition. If we focus on intuitions on cognitive motivation and impact, we conclude that their contents are different, that they express different propositions. The two positions look incompatible.

* This work has been partially supported by grants of the Basque Government (IT780-13) and the Spanish Ministry of Economy and Competitiveness (FFI2012-37726). We would like to thank Eros Corazza, Joana Garmendia and Larraitz Zubeldia for helpful comments.

[1] Below we will distinguish between utterances containing the indexical 'now' (*indexical* utterances) and indexical-free utterances (*bare* utterances).

Elaborating on some ideas from Korta & Perry (2011), we defend a proposal according to which utterances of both temporally unspecific and temporally specific sentences have a systematic variety of contents from reflexive or utterance-bound contents to incremental or referential contents. We combine this with a classification of utterances that make reference to time. With all this settled, we present an account that can explain both the similarities among these utterances – claiming that the referential content[2] of all of them is a proposition that does not include tense or any indexical element – and their differences in cognitive significance – placing these differences in their respective utterance-bound contents.

Our plan is as follows. In section 2 we introduce a classification of utterances with respect to the way they refer to time and we present the problems in a more detailed way, by means of some examples. In section 3 we introduce some further conceptual clarifications, and in section 4 we present the basics of the content-pluralistic account as it is developed in Critical Pragmatics (Korta & Perry, 2011). In section 5 we sketch our view concerning 'now' in utterances of sentences in the present tense. We conclude, in section 6, with some considerations on the philosophy of time and tense.

2. Utterances: bare, indexical and dated

The relation between utterances and tense is not a simple one. We will consider here three possible cases. First, there are utterances of temporally unspecific sentences, such as

1. It is sunny.

Second, utterances of sentences that include a temporal indexical, such as

2. It is sunny today,

or

3. It is sunny now.

And, finally, there are utterances of sentences that have the time (and date) fully articulated, for instance,

4. It is sunny at 10:30 a.m.

or, being more specific,

5. It is sunny at 10:30 a.m. on Sunday 13th October 2013.

These are all quite ordinary utterances, used in everyday situations to communicate clear messages and to attain simple communicative goals. However, because of the apparent incompatibility between intuitions about same-saying and about cognitive significance, their analysis turns out to be quite tricky. We say "apparent incompatibility" because we aim to prove these intuitions to be entirely compatible. To emphasize, our argument is twofold. On the one hand, we claim that a temporally unspecific utterance like (1), uttered at 3.00 p.m. on a given day, seems to have the same (referential) content as a temporally specific utterance like (4) on the same day and time. On the other hand, we claim that both utterances present clear differences in cognitive significance and that these differences are to be located in the utterance-bound content.

[2] Following Perry (2001), 'referential content' typically corresponds to philosophers' traditional notion of *what is said* or *the proposition expressed* by the utterance.

To face these and other issues, we start by proposing a classification of utterances with respect to the way they refer to time. We call them

a. *Bare* utterances, in which the only reference to time is done via verbal inflection (e.g. (1))
b. *Indexical* utterances, which include a temporal indexical like 'now', 'today', 'tomorrow' or 'yesterday' (e.g. (2) and (3))
c. *Dated* utterances, which include explicit dates or times (e.g. (4) and (5)).

In any given situation, a speaker usually has to choose among these three types of utterances to communicate whatever she wants to, and to accomplish whatever goals she aims at. There are two different ways to assess an utterance in a situation.

The first way focuses on whether an utterance is true or false. The second way includes considerations of how communicatively apt an utterance is. An utterance is communicatively apt, in a given situation, if the speaker, by means of it, achieves her communicative goals, that is, if the speaker fulfills her communicative intentions and obtains the desired effect(s) on the hearer. Conversely, an utterance is not communicatively apt if it does not help in attaining the speaker's communicative goals, either because it somehow complicates them or because it prevents them. Of course, this will be a matter of degree. An utterance will rarely be deemed totally apt or inapt, but rather more or less communicatively apt, depending on the degree of fulfillment of the speaker's intentions, which will depend on the degree of understanding on the part of the hearer.

Let us illustrate these distinctions. Imagine that, on Friday 27th September 2013 Jane and Paul are taking a nice walk by the coast and, at 3 p.m. Jane sees their boat, *Menudo*, sinking while anchored in the port. Consider three possible scenarios or situations.

SITUATION A

Jane, alarmed by the sight of their boat sinking, wants to call Paul's attention to it, to decide together what to do: call the maritime rescue, try to save it or at least some of their belongings, sit and cry... With that aim, she utters

6. *Menudo* is sinking.

This is a *bare* utterance, a simple assertive utterance of a sentence in present tense that, in those circumstances, will make Paul aware of the fact that their boat is in sight and that she is sinking at that precise moment.[3] At the very least, he would look toward it and perhaps he would comment on their possible course of action, satisfying Jane's intentions.

In situation A, then, the *bare* utterance (6) would be both true and communicatively apt: it is true in situation A and with it Jane accomplishes her communicative intentions.

But suppose that Jane, in that very same scenario A, had opted for a *dated* utterance such as,

7. *Menudo* is sinking on Friday 27th September 2013 at 3 p.m.

This is, to repeat, an assertive utterance of a sentence in the present tense that, contrary to (6), has the date and time articulated in the sentence used. This introduces a key

[3] Note that Jane could have emphasized this by adding 'now'. We consider this possibility in situation C.

difference. In terms of its truth-value, if Jane had chosen (7) in situation A, she would have done nothing wrong, in the sense that she would not have said something false. Both (6) and (7) are true in situation A. Indeed, (6) and (7) seem to have the same truth-conditions, namely,

(6) and (7) are true, at t, if and only if MENUDO BE SINKING ON FRIDAY 27TH SEPTEMBER 2013 AT 3 P.M.

Or, to put it differently, the content associated with both utterances is the same, that

6/7r. **MENUDO** BE SINKING ON **FRIDAY 27TH SEPTEMBER 2013 AT 3 P.M.**[4]

However, taking into consideration Jane's intentions when uttering (7) in situation A, we would conclude that the utterance is not communicatively apt because, most likely, (7) will not call Paul's attention to the fact that their boat is sinking *as they talk*.

Anchoring –to follow with the naval example– the utterance to a particular moment of time with the use of a date has as a consequence the loss of a certain temporal element or, rather, the loss of a certain cognitive aspect of temporality and time. Dates permanently tie together moments of time and events, and this complicates perceiving those events as happening *now* or having *already* happened or not *yet* happened.

In other words, in a situation like A, the speaker sets a higher burden on the hearer by specifying the time and date in the sentence uttered, because the hearer needs to know the time and date to realize that the event referred to is happening when the utterance is taking place, i.e. at the present. Consequently, articulating the date and time in situation A would not only be superfluous but also potentially counterproductive. For one thing, Paul might not know what time or date it is, hence he would be confused upon hearing (7). For another, the present or immediate happening of the event is somehow hidden under the explicit inclusion of a date and time, thus requiring a bigger effort by Paul to fulfil Jane's intention (i.e. to be aware that the boat is sinking *now* and act accordingly).

SITUATION B

Suppose now that Paul and Jane were naval engineers, trying to calculate how long an average boat like *Menudo* would stay afloat in the open sea with a hole in her hull. In situation B, a *dated* utterance like (7) would be the most sensible choice for Jane, because Paul needs to be informed of the exact time and date of the sinking. Of course, as in situation A, (6) would have also been true. But it would not be communicatively apt, since it would complicate or even prevent fulfilling Jane's intentions (i.e. making Paul aware of the time and date of the sinking). In situation B, contrary to what happened in situation A, by choosing (6) instead of (7) the speaker sets a higher burden

[4] We use small capitals to distinguish propositions (i.e., truth-conditions or contents) from the utterances of natural language sentences. We write "be", instead of "is", to stress the tense neutrality of the proposition, Even though the present is usually considered to be a neutral tense.. Following Perry (2001), we use roman boldface to mark that it is the referent, and not any of its identifying conditions, which is the constituent of the content. Thus, 6/7r is a singular proposition about a particular boat and a particular time, no matter how we refer to them. For simplicity's sake, we will omit all references to worlds and locations in our statements of truth conditions, as well as considerations of differences in time zones (we will be assuming the Coordinated Universal Time, whose international abbreviation –UTC– came from a compromise between the English CUT and the French TUC).

on the hearer, because here Paul would need to know, or to check, the time and date to access the desired information: that the boat is sinking on Friday 27th September 2013 at 3 p.m.

SITUATION C

The use of a *bare* utterance allows the speaker to call the hearer's attention to the present character of the event in question. This is lost, or at least very much mitigated, by making explicit the date and time of the event. However, there are situations where further emphasis might be desirable or even necessary. These are situations where the speaker needs to make clear that the event is happening at the precise moment at which she is talking and not at an interval of time that includes the moment in which she is speaking.

Suppose, for example, that Paul knows *Menudo* has a hole in her hull and that she is sinking but, optimistic as he is, he firmly believes that she will hold on for a couple of hours more, giving them time to look for help or to evacuate their belongings. Jane, who knows Paul and who thinks that *Menudo* is irremediably lost, wants to make Paul understand it and also, she wants to prevent him from running onto the boat, because she knows there is nothing to do (and it might be dangerous). In other words, she wants Paul to understand that the boat is sinking as they speak and, thereby, that there is no time left to do anything or call anyone.

In this scenario, Jane will need to emphasize the *presentness* of the sinking and therefore, a *bare* utterance in the present tense like (6) might not be enough. With (6) there is the danger that optimistic Paul might understand that *Menudo* is indeed sinking but will continue to do so until later that day, or that the sinking will last for a long enough interval of time. That is to say, (6) does not guarantee the attainment of her goals in situation C: waking Paul up to the fact that *Menudo* is "lost" and preventing him from running onto the boat.

A *bare* utterance will not do the trick here, at least not by itself. A better option for Jane is an *indexical* utterance that includes the indexical 'now'. So she utters

8. *Menudo* is sinking now

This is an assertive utterance of a sentence in the present tense that includes an indexical. Notice once more that (8) is true in situation C. Actually, (8) has the same truth-conditions as (6) and (7),

6/7/8r. **MENUDO** BE SINKING ON **FRIDAY 27TH SEPTEMBER 2013 AT 3 P.M.**

Once again, however, there seem to be important differences to take into account when it comes to communicative aptness. With regard to (7) the difference is clear: whereas in (8) it is obvious that the event is simultaneous with the uttering, in (7) this information is lost with the explicit mention of the date. With regard to (6) the difference is not so easy to specify. Indeed, (6) is also communicatively apt in situation C, that is, more apt than (7). It might not be the best option for Jane, considering what she knows about Paul's temperament, but it certainly conveys the desired message: the boat is sinking when she says that it is sinking. The difference seems to be that whereas (6) does not prevent Paul from grasping it, (8) makes it more likely that he does grasp it. As a result, (8), in this situation, is communicatively more apt than (6).

The role of 'now' in *indexical* utterances such as (8) is theoretically problematic, as it is the present tense which seems to define *bare* utterance (6) but which is also part of (7) and (8). We will say a bit more about this in section 5, but for the time being it suffices to say that the role of 'now', in cases like (8), is to emphasize the *presentness* of the event, increasing its communicative aptness.[5]

3. Accommodating the intuitions

The situations described above don't introduce any new or particularly surprising issue. They are examples of the traditional problem of determining what is said by an utterance. They are examples, also, of the different roles that two utterances with, seemingly, the same truth-conditions can play in communication (Perry, 1979). The reasons why Jane utters (6), (7) or (8) in the described situations seem pretty obvious. We all constantly go through similar situations and we are all pretty good in choosing suitable utterances to achieve our communicative goals (at any rate most of us and most of the time). Still, giving an adequate account of this phenomenon turns out to be not that simple, especially when dealing with time and tense.

Basically, we are facing an instance of the classical debate about what is said by an utterance and, initially at least, this seems to be related to the position one adopts about the bearer of truth-conditions and truth-values. Following the semantic tradition, one can assume that the bearers of truth-conditions and truth-values are sentences of natural language; that sentences express propositions or have contents. Certainly, one would accept that for indexical sentences (that is, sentences containing pure indexicals like 'I', 'here', 'now' or demonstratives like 'he', 'she, 'it', 'this' or 'that') the truth-value of the sentence is relative to a context, which is taken as a tuple of speaker, time, space and world. And, thus, including tense morphemes among the indexical expressions would be a natural follow-up (Bar-Hillel, 1954).

For a traditional semanticist, then, a (bare) sentence like (1) "It is sunny" would change its truth-value from context to context, both through time and as applied to different locations. That is, it might be true at 8 a.m. but not at 9 a.m. on a given day and at a given location. The sentence says the same thing (it expresses the same proposition), but its truth-value changes through time.

The traditional semantic view that takes sentences as bearers of contents, truth-conditions and truth-values leads naturally to a temporalist[6] view of tensed utterances

[5] Admitting that 'now' plays *only* the role of emphasizing the present character of the event carries the assumption that it is *redundant*, namely, that it does not make any substantial contribution to the meaning of the sentence used or to the utterance's truth-conditions. See section 5 for further discussion on this.

[6] In this paper we take eternalism and temporalism to be views concerning the semantic status of tense. Temporalists defend that a proposition might be true at some times and false at others. Consequently, according to them, in utterances where time is not articulated, i.e. *bare* utterances, time is not part of the content. So, in utterances where time is not explicitly articulated, time is not part of the proposition expressed, but rather part of the circumstances of evaluation. See for instance, Kaplan (1989), Prior (1967) and, more recently, Recanati (2007).

like (6), according to which the truth-value of the proposition expressed by (6) is context-relative; relative to the time in the context of the utterance.[7]

Now, if one adopts a pragmatic stand, and takes the utterance as the bearer of content or truth-conditions and the speaker as the agent who says things and expresses propositions, the intuitions might be different. For simplicity's sake, let us leave aside for the time being, *indexical* utterances and focus on the differences between *bare* and *dated* ones. That is, let us focus now on

6. *Menudo* is sinking (uttered by Jane at 3 p.m.; Friday 27th September 2013);
7. *Menudo* is sinking on Friday 27th September 2013 at 3 p.m. (uttered by Jane at the very same date and time).

Would Jane *say the same* thing? There is a clear sense in which we want to say that Jane would indeed *say the same thing*; that an utterance, in order to *say* something at all, must say something involving a moment of time. This is basically what eternalism claims, that the proposition expressed by any utterance is not context-relative, i.e., that its truth-value, once settled, remains invariant, regardless of further possible changes in the context and, thus, that the moment of time — as in our example — is part of the proposition expressed, even if it is not explicitly included in the sentence expressed, as in (6).[8]

Eternalism has in its favor the fact that it is able to account for widespread intuitions on same-saying. Besides, and as a direct consequence of this, a further argument has been developed in favor of eternalism and against the temporalist idea of there being temporally neutral propositions. The argument is, briefly, the alleged inability of temporalism to account for belief ascriptions in time and, thus, for diachronic disagreements. In a nutshell,

> The evidence against temporally neuter objects is simply that diachronic agreement or disagreement seems to be, of necessity, a matter of agreement or disagreement about something temporally specific. (Richard, 2003: 40)[9]

But eternalism gets into trouble when it tries to explain Jane's choices of utterances in different situations. Temporalism, it would seem, is better positioned to do so. That is, temporalists can easily account for the differences in cognitive significance between (6) and (7), because, according to them, these utterances express two propositions with an important difference: (6) expresses a temporally neutral proposition and (7) a temporally specified one. (6) expresses a proposition that might be true in some contexts and false in others, whereas (7) expresses a proposition that, if it is true, remains so across all contexts.

---

[7] Needless to say, even if the traditional semantic view can be seen to naturally lead to temporalism, there is no necessary connection between these two positions, as is clearly shown by Frege's case: the founder of semantics clearly rejected this idea.

[8] According to eternalism, every proposition, for the sake of being so, is 'eternal', that is, it has a fixed truth-value that does not change. A proposition is true or false, and never ceases to be so. Time is thus considered as part of the proposition expressed. See Frege (1918) for a classic account of the view and Richard (2003) for a more recent defense.

[9] The argument has been forcefully defended by Mark Richard (2003) and discussed by, among others, Higginbotham (2003).

We claim that by modifying some basic assumptions about the content of utterances, the apparent conflict dissolves and we can explain the difference in cognitive significance between utterances like (6), (7) and (8), while at the same time keeping the stable nature of utterance-truth, i.e. respecting the fact that both utterances, in some –fully truth-conditional– sense, say the same thing. Hence, our proposal is a sort of enhanced eternalism, in so far as it keeps the basic theses of this view while, at the same time, it accommodates some of the insights of temporalist positions.

4. Content-pluralism

At least three questions arise when considering utterances that make reference to time:

a. Why does the cognitive significance differ so much from a *bare* (or *indexical*) utterance (say, (6) or (8)) to a *dated* utterance (say, (7)) and how can we account for this?
b. How is this difference possible when the three utterances (6), (7) and (8) have the same truth-conditions?
c. Finally, is it possible to maintain that what it is said by these three utterances is the same without jeopardizing the differences in cognitive significance? In other words, can we have our cake and eat it too?

We believe we can indeed have it all, and the theoretical apparatus for it is already offered by the treatment of utterances containing indexicals given by Critical Pragmatics (CP from now on) (Korta & Perry, 2006, 2007, 2011, 2013).

Generally speaking, traditional approaches to utterances share a common assumption that we can call 'content-singularism' or 'mono-propositionalism', according to which each utterance is associated with one single proposition or content (setting presuppositions and implicatures aside). This content is taken to be the bearer of truth-value and cognitive significance and also 'what is said' by the utterance, among other things.

In contrast, CP proposes a content-pluralism, according to which every utterance has a variety of contents that derive from a combination of three kinds of elements: the circumstances of the utterance –time, in this case– being one of them, but also the intentions and beliefs of the speaker and the conventions –sentence meaning– exploited.

CP distinguishes several kinds of contents. The reflexive or utterance-bound content, which is determined by the meaning of the uttered sentence and the fact that the utterance has been produced, is one of them. This is the minimal content that any hearer would grasp with no other information than the fact that a particular utterance has occurred and knowledge of the language of the utterance, the syntax of the sentence used and the meaning of its words.

Building from this, there are various 'intermediate' contents, each incrementally including a further element and, thus, requiring the hearer to have a certain further piece of knowledge to grasp them.[10] On the other side of the spectrum, so to speak, we find the referential content. This is basically what traditionally has been taken to be the

[10] See Korta & Perry (2011, ch. 7) for an account of the several intermediate contents.

proposition expressed by the utterance, what is said, constituted by sentence meaning, the speaker's intentions and the circumstances of the utterance.

Now, to see how this content pluralism works let's go back to our examples, starting with situation A.[11] Remember, in situation A Jane sees *Menudo* sinking and wants Paul to see it too, say, to call for help. We said that, in this situation and with this intention, (6) ("*Menudo* is sinking") would be both true and communicatively apt, whereas (7) ("*Menudo* is sinking on Friday 27th September 2013 at 3pm") would be true but not communicatively apt, or not so apt as (6) by far.

The reason for this is clear. (7) requires Paul to have more information about the context to realize that the boat is sinking at the precise moment when the utterance is taking place. That is, he needs to know that the time of the utterance is 3 p.m. on Friday 27th September 2013. He might not know it, in which case he will either ignore Jane's remark or, perhaps, ask her to explain herself. In either case, the utterance will not play the role it was supposed to play (i.e., alerting Paul of the sinking). However, even if he knew the time and date, (7) would not be Jane's natural way to call Paul's attention. It would be a bizarre way of stating the presentness of the event.

Indeed, choosing (7) to talk about something that is happening now would be as weird as Jane referring to herself in the third person, when talking to Paul,

9. Jane wants you to look at the boat (said by Jane to Paul).[12]

To be sure, both Paul and Jane know that Jane is called Jane, but using her name instead of the indexical 'I', as in

10. I want you to look at the boat,

is not only weird but also potentially confusing (Korta & Perry 2011: 63-69). Jane puts an extra cognitive burden on Paul by using her name instead of the first-person singular pronoun.

In (7) and (10) the speaker eliminates the indexical or the temporal element by *naming* the speaker or *making* the time and date of the utterance *explicit.* Notice that in (7) the speaker eliminates the temporal aspect but cannot eliminate the tense, because, as we said, tense is mandatory in English. However, whereas in (6) the tense indicates that the event is taking place in the present (in an interval of time that includes the time of the utterance), in (7) the tense merely points out that it happens at the date and time indicated. In this sense, it loses the *presentness* character of the event.[13]

To put it differently, the *presentness* element is contained in the verb tense (present), which both utterances have. But whereas in (6), being a *bare* utterance, the only "time-related" element explicitly included in the utterance is the tense inflection, in (7) the time of the event is also articulated. A *dated* utterance like (7), by fixing the tense to a moment, eliminates the *presentness* element because it reduces it to being co-temporal with that specific and fixed moment of time. So, even though we still have the verb tense, it is tied to the time and date: Friday 27th September 2013 at 3pm.

[11] Again, we leave aside the indexical utterance (8) for the moment.

[12] Of course, it would be the natural way when talking to Tarzan, but we all agree that Tarzan had a weird way of using names, indexicals and verbs (at least in the movies interpreted by Johnny Weissmuller).

[13] In this sense, an utterance like (7) would be considered a de-tensed version of (6) (uttered at Friday 27th September 2013 at 3pm).

So far so good; all this explains their different cognitive significance or, in our terms, why in situation A (6) is communicatively apt and (7) is not. However, we still need to account for the fact that in situation A they are both true and, consequently, they both seem to say the same thing or to express the same proposition, i.e.,

6/7/8r **MENUDO** BE SINKING ON **FRIDAY 27TH SEPTEMBER 2013 AT 3PM**

The proposition expressed by (6) is, like the one expressed by (7), a "tenseless" one, that is, one where tense, or the *presentness* of the utterance, is identified with a specific moment of time. But if both utterances express the same tenseless proposition, how do they come to have a different cognitive significance? How can we account for the *presentness* element portrayed in (6) but not in (7)? Moreover, if both utterances express the same tenseless proposition, does it mean that the *presentness* element contained in (6) somehow disappears when we account for what is said?

We can easily solve this puzzle. (6) and (7) express the same proposition, which is their referential content, but they diverge when it comes to the other contents. Both utterances are true in situations A, B and C, because they have the same referential truth-conditions. But they differ in their communicative-aptness, or in their cognitive significance, because they have different utterance-bound contents. And, in fact, it is in this kind of content where the *presentness* element resides. Our basic underlying idea here is that articulating or making explicit the temporal (non-indexical) element in a *dated* utterance like (7) does not affect the referential content of the utterance, but it affects the reflexive or utterance-bound content. The choice between (6) or (7) depends on the intentions of the speaker, on what contents she wants her utterance to have, with the aim that the hearer grasps them, and on the actions she wants to elicit in the hearer.

Adopting CP's content pluralism, we see that utterances differ in their utterance-bound truth-conditions –that is, the truth-conditions that any hearer who knows the facts that fix the language of the utterance, the words involved, their syntax and their meaning, would grasp. Accordingly, upon hearing (6) such hearer would grasp:

6x. **MENUDO** BE SINKING AT ***THE TIME OF*** **(6)**[14]

Whereas upon hearing (7) he would grasp

7x. **MENUDO** BE SINKING ON ***FRIDAY 27TH SEPTEMBER 2013 AT 3PM***.[15]

The utterance-bound contents of (6) and (7) differ because the sentences expressed differ. That is, what a hearer who knows only the facts that fix the language of the utterance would grasp differs. In (7) the time and date are explicitly articulated in the sentence expressed and, thus, any competent hearer would grasp them, even if he didn't have any further knowledge about the context of utterance or the speaker and her intentions.

(6x) and (7x) both contain an identifying description of the time referred to by Jane. The *bare* present tense in (6) identifies the time referred to with the time of the utterance

[14] Things are a bit more complicated though; fixing the referent of Jane's use of the name "*Menudo*" requires from the hearer more than just linguistic knowledge. For simplicity's sake, we are leaving aside this issue (see Korta & Perry, 2011, Chapter 7). Following Perry (2001), with italic boldface, we indicate that it is the identifying condition that enters into the truth-conditions and not the object it designates. So, (6x) is a singular proposition with the utterance itself as a constituent, but a general proposition with regard to the time of the utterance.

[15] For the sake of simplicity, we ignore issues of time zones, calendars, and other *unarticulated constituents* of the referential truth-conditions.

(or a period of time including the time of the utterance). Dates and clock times are descriptions we use to pick out days and times, and to refer to them.[16] Jane's utterance (7) provides such an identifying description at its minimal semantic level. But it will not fit Jane's communicative aim in this situation, if Paul does not identify it with the time of the utterance, as he may not.

(6x) and (7x) do not constitute what Jane says by uttering (6) and (7), or what philosophers usually call the 'proposition expressed'. She is saying something about a particular time, not about any identifying condition of it, like being the time of the utterance or being such-and-such date and time (according to such-and-such time zone and such-and-such calendar). Rather, (6x) and (7x) represent contents of the utterances, made available by the speaker in those contexts, that will guide the hearer in understanding the utterance's referential contents and her communicative aims. The referential content of (6) is something like:

6r. **MENUDO** BE SINKING **NOW**,

which would be just the same as the referential content of (7), even if we may want to formulate it as

7r. **MENUDO** BE SINKING ON **FRIDAY 27TH SEPTEMBER 2013 AT 3PM**.

Both utterances would be true only when a certain boat is sinking at a particular date and time.[17]

With (6x), Paul's route to the referential content of (6) is pretty straightforward: the time of (6) is just now, so *Menudo* is sinking just now. In contrast, the utterance-bound (or, strictly speaking, the *date*-bound) content of (7) offers no such straightforward way. What is lost here is the reflexive component, the fact that the boat is sinking *at the time of the utterance*. According to Korta & Perry,

> The level of utterance-bound content is crucial, because many of the effects that a speaker will intend for his utterance to have will depend on the hearer's recognition of the utterance-bound (…) content. (Korta & Perry, 2011: 122)

So, in this case, it is the *presentness* element that is crucial, and it is in the utterance-bound content of (6) where the *presentness* element resides. Jane needs Paul to recognize that *Menudo*'s sinking is contemporaneous with her utterance and he will easily do so just by grasping (6x). Of course, Paul could have known the date and time of the utterance, but this is quite irrelevant for Jane's intentions. The fact that he grasps (6x) is independent of his knowing the particular time of the utterance. Even if he knows that the time of the utterance is precisely Friday 27th September 2013 at 3 p.m., he would understand the *presentness* element expressed by tense via grasping (6x).

But the same cannot be said with (7). As we said, in this case, the *presentness* element disappears once it gets tied to a date or a fixed moment of time. Upon hearing (7), Paul would only be able to grasp (7x). Consequently, he will not directly capture the message that *Menudo* is actually sinking as they speak. This is why Jane would opt for a *bare* utterance like (6) in situation A. By using a *bare* utterance and making available to Paul its utterance-bound content, she would easily attain her goals.

---

[16] See Perry (2013).

[17] Remember that roman boldface indicates that it is the referent and not any of its identifying descriptions which enters into the truth-conditions of the utterance.

In situation B, Jane's communicative intention varies; she now wants Paul to grasp the exact time and date of the sinking. Thus, she chooses (7), making sure that Paul gets the message regardless of his identification with the time of the utterance. (7) is, then, both true and communicatively apt.

5. Short detour. Now and the present

We've presented so far an account for *bare* and *dated* utterances. Let's stop now for a moment to analyze the *indexical* utterance (8). The differences between situation A and situation C, as we commented, are not as clear as the differences between situations A and B and, consequently, the difference that might exist in cognitive significance between (6) and (8) is also thinner. Indeed, the role of 'now', in a present tense utterance like (8), is questionable and, we claim, is reduced to emphasizing the immediacy of the event, without having any effect on any of the contents expressed. In other words, we believe that 'now' in (8) is redundant or vacuous.

The relevant contents –for us here– of (8) in situation C would be similar[18] to those of (6):

8x. **MENUDO** BE SINKING AT ***THE TIME OF*** **(8)**

8r. **MENUDO** BE SINKING **NOW.**

This has as an immediate consequence that both (6) and (8) are good candidates for situations A and C, that is, both are true and communicatively apt. However, there is a sense in which (8) is more appropriate for situation C than (6), and that is due to the emphasis introduced by 'now'. With (8), as we said, it is more likely that Paul grasps the message: *Menudo* is sinking at the precise moment when Jane is talking. With (6) Jane does not complicate things for Paul, but she does not ensure that he gets the correct message either. The difference is one of nuance, but an important nuance. Although with (6) Paul would surely understand that the sinking is indeed taking place as they speak, he might think that it will take some time before she gets lost under the water. With (8) that possibility is minimized.

Emphasizing the *presentness* of an event can be done in different ways, of course. Jane could have shouted (6), or she could have made clear gestures towards the boat, or she could have shaken Paul until he understood the seriousness of the event. We are not trying to claim that the role of the indexical 'now' in communication is similar to, or that it can be reduced to, that of shouting or gesturing. However, we do believe, with Prior (1968) and Kamp (1971), that when included in many present tensed sentences, 'now' turns out to be redundant, i.e., it does not alter the truth-conditions of the utterance. These are paradigmatic cases, where the use of 'now' is perfectly coherent with its indexical and reflexive character. All the same, they are not illustrative of the many roles 'now' plays in communication.

The idiomatic 'now' is plagued with complications, from its many and very much discussed "non-indexical" uses (in delayed communication, for instance, in written

[18] The referential content would be the same but the utterance-bound content would differ, because, even if they have the same conventional meaning and refer to the very same boat, they are about different utterances, (6) and (8), respectively.

discourse or recorded messages) to its indeterminacy (uses of 'now' to refer both to a very short period of time and to a huge one). Whether these are or are not indexical uses of 'now' or to what extent there is an essential difference between uses of the indexical in face-to-face or in delayed communication are complex topics. Certainly they go beyond the limits of this paper. We believe in any case that we can safely ignore these complications for our purposes and just focus here on "standard" face-to-face communication using utterances of sentences in the present tense.

For these cases, we are defending a position similar to that of Arthur Prior and Hans Kamp. Prior (1967) initially advocated what has been called a "no-present" theory, according to which,

> 'He is eating his breakfast now' and 'He is eating his breakfast at present', seem to say no more and no less, apart from nuances of emphasis, than the plain 'He is eating his breakfast'. We can do without 'now', we can do without a present-tense copula 'is', we can do without even a special present-tense inflexion on the main verb. (Prior, 1967: 32)

Kamp (1971) agreed with Prior that, on many occasions, 'now' can be eliminated without loss. More precisely he claimed that occurrences of 'now' in sentences in the present tense are vacuous, as in "it is raining" and "it is raining now", because, Kamp claimed, "it is raining" is understood to refer to the time of utterance anyway. These are cases where, to put it crudely, the present tense is the only possible interpretation.

Similarly, in (6) the present tense of the sentence expressed is indeed the only possible interpretation. Paul, upon hearing (6) ("*Menudo* is sinking"), will immediately grasp that the sinking is taking place as they speak. He might not know for how long the sinking will last, or for how long the boat has been sinking, but he will know that "at the present" it is sinking. The introduction of 'now' in (8) is redundant, because it is not needed to single out the presentness of the event.

However, and despite the redundant nature of 'now' in utterances of sentences in the present tense, it is clear that there are some other cases where 'now' plays an essential – non-redundant– role. Prior himself acknowledged this, and although he kept his views about the present throughout his writings, he modified his opinions concerning 'now'. In later works, mostly Prior (1968), due to the influence of Castañeda's analysis of indexicals and his proposal to treat 'now' as an adverbial analogue of the pronoun 'I' (Castañeda, 1968), he defended the need to introduce 'now' in the logical analysis of language and he acknowledged the importance of the "reflexive" element of 'now', of its "pointing" role. Consider for instance his classic example (Prior, 1968: 102):

11. It will be the case that I am sitting down.

As Prior indicates, it would be natural to understand (11) as (12), rather than as (13).

12. It will be the case that it is then the case that I am sitting down.
13. It will be the case that it is now the case that I am sitting down.

That is to say, the most salient interpretation of (11) is not the same as the most salient interpretation of (13). In (11), unlike the examples discussed so far, the *presentness* of the event is not the only possible interpretation. Actually, it is not even the most probable one. Upon hearing (11), the *presentness* of the event ("sitting down") is not at all clear, i.e. the hearer will not grasp that the speaker *is* sitting down as she speaks. Rather, it seems, he would conclude that the speaker *will be* sitting down sometime in

the future. This later interpretation is left out in (13). The role 'now' plays in (13) is, briefly, that of reflexively pointing to the time of utterance and, as a result, unavoidably linking the event to the present. 'Now' is then an essential *pointing* tool, an indexical that univocally and reflexively points to the time of the utterance. Clearly then, in (13), 'now' is playing a fundamental role, and certainly not only one of emphasizing.

But then again, both (11) and (13) are quite complex sentences. As Kamp claimed, "an occurrence of 'now' can be only non-vacuous if it occurs within the scope of another temporal modifier" (Kamp, 1971: 229). The *presentness* of the event in (11) is lost because it is embedded within the modifier "it will be the case". We could add to this that an occurrence of 'now' also seems to be non-vacuous when it occurs in delayed communication, that is, when it occurs in written or recorded utterances.

How to deal with these two cases is, again, a complex issue far beyond the scope of this paper. With regard to the introduction of 'now', our claim is that in utterances of present tense sentences like (6) and (8), which include no temporal modifiers and are used in face-to-face communication, the use of 'now' is vacuous, being only a tool to emphasize the *presentness* of the event.

6. Some concluding thoughts on time and tense

To conclude, we will briefly consider where our proposal stands with regard to some of the main trends in philosophy of time and tense. Tense might point to both a linguistic or mental phenomenon and a metaphysical one. On the first sense, tense concerns those linguistic expressions, or mental states, that are sensitive to the time of their occurrence. These include temporal indexicals, temporal operators, verbal tenses, etc., and their mental counterparts. On the second sense, tense designates features of reality, that is, the fact, or alleged fact, that, for instance, a certain event is future or past. The philosophical discussions in both areas are, thus, closely related but significantly different. Disputes about tense in the philosophy of language have focused on whether or not tensed expressions can be reduced to tenseless ones, that is, whether or not tense expressions, like verb inflections or temporal indexicals, can be reduced to tenseless expressions, like dates or token-reflexive ones (i.e. "at the time of the utterance"). On the other end, disputes on the metaphysics of time have traditionally addressed the issue of whether the world is tensed or tenseless, that is, whether moments in time are ordered by their possession of the properties of being past, present or future (tensed facts, the so-called "A series") or whether they are ordered by relations of later than/earlier than (tenseless facts, the so-called "B series").

It doesn't take much to realize that conclusions in the philosophy of language will potentially have consequences in the metaphysics of time (and, although perhaps more problematically, the other way round). However, the two debates are not strictly parallel. The claim that there are tensed facts is a highly controversial one. Pace McTaggart (1908), this metaphysical discussion can be safely ignored when analyzing language. The existence of tensed expressions and tensed thoughts and the impossibility of reducing them to tenseless ones, that is, of eliminating them from our discourse, is pretty much accepted by all. Even those who want to claim that there are no tensed facts have accepted the evidence in favor of tensed expressions.

All this was brought about by work in the semantics of indexical expressions. Arguments by Prior (1967), Castañeda (1968), Perry (1979) and others showed that certain thoughts are essentially tensed, and that, as a result, they cannot be adequately characterized in tenseless terms. Certainly, that does not entail that there must be (irreducible) tensed facts, but rather that some kind of explanation of the role of tensed talk and tensed thought is in order.

In other words, the original project of reducing all tensed or A-expressions to tenseless or B-expressions, eliminating tense completely from language and thought, has been replaced by the so-called "new B-theory", according to which there are tensed linguistic expressions and thoughts, but not tensed facts. The "new B-theorists" avoid ontological commitments to tense, not by attempting to translate –without any loss of meaning– all tensed sentences into tenseless ones, as the "old B-theorists" claimed could be done; rather, they aim at giving a tenseless or token-reflexive analysis of the truth-conditions of tensed sentences.[19]

We like to consider our proposal as a version of the "new B-theory". We believe tensed utterances (or rather, utterances of tensed sentences) ultimately express tenseless propositions or, better, have tenseless referential truth-conditions.

What differentiates us from the "old B-theorists" and the "new B-theorists", again, is our adoption of an account that makes room for a variety of contents or truth-conditions. This, of course, will also differentiate our proposal from traditional eternalism, which only admits one single content. Our contents are also "eternal" but we accept a variety of them. And this is what is needed to overcome the much criticized limitation of B-theorists and eternalists alike: their inability to account for the cognitive significance of tense.

What differentiates us from the A-theorists and temporalists is that *bare* utterances, *indexical* utterances and *dated* utterances have, in our account, eternal or tenseless truth-conditions. We agree with eternalists that what is said corresponds to an eternal proposition, our referential content. This allows our proposal to overcome the limitations of temporalists and A-theorists: their inability to account for our intuitions regarding same-saying.

To sum up, the basic idea of the paper is that the differences between a *bare* utterance like (6) and a *dated* utterance like (7) lie not in the referential content but in the utterance-bound content, that is, in the truth-conditions determined by the words involved, their syntax and their meaning. It is the level of utterance-bound content that gives us an account of the cognitive significance of the utterance. However, it is the referential one that keeps the eternalist constraint, and respects the intuition that, uttered on Friday 27th September 2013 at 3 p.m., both (6) and (7) (and (8)) say the same thing.

To conclude, a few remarks about the possible implications of our view are in order. Very briefly, we believe that it is not only not necessary, but also a bad idea, to claim that tensed facts are necessary in order to explain the differences in cognitive significance between a temporally specific or *dated* utterance and a temporally unspecific or *bare* one. The only things we need, we have argued, are tensed thoughts, and not tensed facts. This idea is not new, of course; as we already said, whereas the

[19] Defenders of the "old B-theory" include Reichenbach (1947) and Russell (1938, ch. 54). Defenders of the "new B-theory" include Mellor (1981) and Oaklander (1991).

existence of tensed facts is very controversial, the existence of tensed thoughts is not. Almost everybody accepts the need to include them in any reasonable explanation of tense, time and language. But this inclusion has proven not to be simple.

We believe part of the problem comes from a confusion between tensed thoughts and tensed facts. This would require further elaboration to constitute an argument but, granting that needless ontological proliferation is to be avoided, it should suffice to prefer the so-called B-theory regarding tensed facts over the A-theory, and reject the existence of tensed facts. At least as a starting point. And at least on the basis of arguments concerning tensed expressions and thoughts, like the ones we have considered in this paper.

References

Bar-Hillel, Yehoshua. (1954), "Indexical expressions". *Mind*, 63, pp. 359-379.

Castañeda, Hector Neri (1968), "On the logic of attributions of self-knowledge to others". *Journal of Philosophy* 65 (15), pp. 439-456. DOI: 10.2307/2024296.

Frege, Gottlob (1918), "Der Gedanke. Eine Logische Untersuchung". In *Beiträge zur Philosophie des deutschen Idealismus* I (1918–1919), pp. 58–77. (English translation) (1956), "The Thought: a logical inquiry". *Mind* 65 (259), pp. 289-311.

Higginbotham, James (2003), "Tensed Second Thoughts: Comments on Richard". In Aleksander Jokic and Quentin Smith (eds.), *Time, Tense, and Reference*. Cambridge, Massachusetts: The MIT Press, 2003. pp. 191-197.

Kamp, Hans (1971), "Formal properties of 'now'". *Theoria* 37, pp. 227-274.

Kaplan, David (1989), "Demonstratives". In J. Almog, J. Perry and H. Wettstein (eds.), *Themes on Kaplan*. Oxford: Oxford University Press. pp. 481- 614.

Korta, Kepa & John Perry (2006), "Varieties of Minimalist Semantics". *Philosophy and Phenomenological Research* LXXIII, No. 2, pp. 451-459. DOI: 10.1111/j.1933-1592.2006.tb00628.x.

Korta, Kepa & John Perry (2007), "How to Say Things with Words". In Savas L. Tsohatzidis (ed), *John Searle's Philosophy of Language: Force, Meaning, and Thought*. Cambridge: Cambridge University Press, pp. 169-189.

Korta, Kepa & John Perry (2011), *Critical Pragmatics. An Inquiry into Reference and Communication*. Cambridge: Cambridge University Press.

Korta, Kepa & John Perry (2013), "Highlights of *Critical Pragmatics:* reference and the contents of the utterance". *Intercultural Pragmatics* 10 (1), pp. 161-182. DOI: 10.1515/ip-2013-0006.

McTaggart, John M.E (1908), "The unreality of time". *Mind* 17, pp. 457-474.

Mellor, D. Hugh (1981), *Real Time*. Cambridge: Cambridge University Press.

Oaklander, Nathan (1991), "A defense of the new tenseless theory of time". *Philosophical Quarterly* 41, pp. 26-38.

Perry, John (1979), "The problem of the essential indexical". *Nôus* 13, pp. 3-11.

Perry, John (2001), *Reference and Reflexivity*. Stanford: CSLI Publications. Expanded and revised 2nd edition, (2012).

Perry, John (2013), "Temporal Indexicals". In H. Dyke and A. Bardon (eds.), *A Companion to the Philosophy of Time,* Oxford: John Wiley and Sons, pp. 486-506.

Prior, Arthur N. (1967), *Past, Present and Future*. Oxford: Claredon Press.
Prior, Arthur N. (1968), "Now". *Noûs* 2 (2), pp.101-119.
Recanati, François (2007), *Perspectival Thought. A Plea for (Moderate) Relativism.* Oxford: Oxford University Press.
Reichenbach, Hans (1947), *Elements of Symbolic Logic*. New York: Macmillan Company.
Richard, Mark (2003), "Objects of relief". In A. Jokic and Q. Smith (eds.), *Time, Tense and Reference*. Cambridge, Mas.: MIT Press/Bradford Books, pp. 157-189.
Russell, Bertrand (1938), *Principles of Mathematics*. New York: W. W. Norton.

INCLUSION, CONTRAST AND POLYSEMY IN DICTIONARIES: THE RELATIONSHIP BETWEEN THEORY, LANGUAGE USE AND LEXICOGRAPHIC PRACTICE

ANU KOSKELA
De Montfort University, Leicester
akoskela@dmu.ac.uk

Abstract
This paper explores the lexicographic representation of a type of polysemy that arises when the meaning of one lexical item can either include or contrast with the meaning of another, as in the case of *dog/bitch, shoe/boot, finger/thumb* and *animal/bird*. A survey of how such pairs are represented in monolingual English dictionaries showed that dictionaries mostly represent as explicitly polysemous those lexical items whose broader and narrower readings are more distinctive and clearly separable in definitional terms. They commonly only represented the broader readings for terms that are in fact frequently used in the narrower reading, as shown by data from the British National Corpus.

Keywords: semantics, lexicology, lexicography, polysemy

1. Introduction

Most modern dictionaries aim to record and describe the meanings of lexical forms as used in a given language community and do so in such a way that the dictionary user may understand how the words can be used (Zgusta 1971). However, given the inherent flexibility of word meaning, it is not always obvious when particular usages should be enumerated as separate senses or how the relationship between particular lexical units should be represented. This paper focuses on a particular type of meaning variation as a way of exploring the relationship between lexicographic practice, language use and theoretical accounts of word meaning.

The focus here are cases where two lexical items have a 'dual' relationship whereby the meaning of one term can be construed more broadly or narrowly, so that it either includes or contrasts with the meaning of the other. This is illustrated by *dog*, whose general 'canine mammal' reading is hyperonymous to *bitch*, while the more specific 'male canine mammal' reading is a co-hyponym of *bitch*. A similar relationship holds between *shoe* and *boot*, as illustrated by B's alternative answers in 1.

(1) A: Are you going to wear shoes?
B1: Yes – I'm not going out barefoot!
B2: No, it's raining. I'll wear my boots.

Other similar pairs with a dual relationship include *finger/thumb, cow/bull, animal/bird, plant/tree* and *cup/mug*. The lexical item with the broader and narrower readings may be called an *autohyponym* (Horn 1984) or, alternatively, a *vertical polyseme* (alluding to the common practice of representing the relationship of hyponymy on the vertical axis in diagrams).[1] For ease of reference, I will here use the general label *A-term* for any lexical item with broader and narrower readings (e.g. *dog, shoe, finger* etc.) and *B-term* for the lexical item that can either function as a hyponym or a co-hyponym of the A-term (e.g. *bitch, boot, thumb* etc.). The abbreviation *A1* refers to the broader reading (e.g. *dog* 'canine mammal', *shoe* 'item of footwear', *finger* 'one of the hand digits') and *A2* to the narrower reading ('male canine mammal', 'item of footwear that reaches only to the ankle', 'one of the hand digits other than the thumb').

Although the term vertical *polysemy* implies that the A1 and A2 readings are distinct senses, sense demarcation in such cases is a vexed issue from both theoretical and lexicographic perspectives. Because the narrower reading can always be subsumed under the broader one, some traditional ambiguity criteria such as the definitional criterion or the identity-of-sense test are not applicable (Zwicky & Sadock 1975; Geeraerts 1993). Furthermore, in many cases of vertical polysemy the distinction between the A1 and A2 readings is very subtle. Consequently some have argued against viewing them as distinct senses, preferring instead to account for the meaning variation through pragmatic means (e.g. Becker 2002; Huang 2009) or as a reflection of the flexibility of prototype category boundaries (Lehrer 1990a). However, the term *polysemy* can be justified on an account where the distinction between ambiguity and vagueness is seen as a matter of degree (e.g. Tuggy 1993; Croft & Cruse 2004). Viewed from this perspective, vertical polysemes whose broader and narrower readings are only subtly distinctive would fall somewhere between full ambiguity and vagueness. However, it is important to note that in principle even very subtly distinctive readings may nevertheless be conventionalised and established as distinct senses, as a function of their frequency in language use (Rohdenburg 1985a).

Such potential variation in the distinctness and conventionality of the broader and narrower readings makes the lexicographic representation of vertical polysemes a challenging issue. It involves not only the question of when the A1 and A2 readings should be enumerated as separate senses, but also whether the A/B relationship should be represented as one of inclusion or contrast. To explore different dictionaries' practices, I surveyed the representation of 12 pairs of A- and B-terms (including *shoe/boot, finger/thumb, plant/tree* etc.) in seven desk-size monolingual English dictionaries. The survey showed that dictionaries tend to represent as explicitly vertically polysemous those terms whose broader and narrower readings are more distinctive and clearly separable in definitional terms. On the other hand, they commonly only represented the broader A1 readings for terms that are in fact frequently used in the

[1] Autohyponymy or vertical polysemy is not restricted to cases where a word has a dual relationship with another word. The verb *drink*, for instance, has a broader 'consume liquid' and a narrower 'consume alcohol' reading, and is therefore an autohyponym/vertical polyseme. However, its narrower reading is not defined in contrast with another word and instead represents a salient subset of the class designated by the broader reading. Horn's (1984) neo-Gricean pragmatic account of autohyponymy maintains that different types of autohyponyms are motivated by different pragmatic principles.

narrower A2 reading, as shown by data from the British National Corpus (BYU-BNC, Davies 2004-). The corpus was searched for contexts where the A- and B-terms co-occur (within ±9 words). It was found that in these contexts all the A-terms, including ones whose narrower A2 readings were not defined explicitly in the dictionaries (e.g. *shoe*), were predominantly used to contrast with their B-terms (in contexts such as *shoes and boots*). This suggests that the narrower A2 readings and the potential for A/B contrast is well established in language for these terms. They would therefore also warrant being represented in dictionaries. This would not necessarily need to involve listing the broader and narrower readings as separate senses, as the dictionary survey demonstrated that lexicographers have at their disposal a range of definitional techniques that could be used to represent more subtle sense distinctions. Consequently different definitional techniques could be used to represent the position of a given vertical polyseme on the ambiguity-vagueness continuum.

Section 2 below provides an overview of some of the theoretical accounts of vertical polysemy, including a cognitive linguistic account where the distinction between polysemy and vagueness is viewed as being a matter of degree. The survey of the lexicographic representation of the A/B pairs is presented in section 3 and the study of the co-occurrences of the pairs in corpus data in section 4. Section 5 concludes the paper.

2. Vertical *polysemy*?

Theoretical accounts of lexical items with broader and narrower readings have tended to view the narrower readings as contextual variants of the more general readings. This means that the meaning variation has often been treated as an instance of vagueness or indeterminacy, rather than polysemy. The prioritisation of the broader reading is apparent in semantic markedness accounts of vertical polysemy, starting with Jakobson (1935 [1971], cited in Haspelmath 2006). According to the semantic markedness principle, in cases where there is only one sex-specific term for an animal species (e.g. *bitch* 'female dog', *drake* 'male duck'), the general, unmarked species term (*dog, duck*) can, in some contexts, be used to fill the lexical gap.[2] More recent pragmatic accounts have similarly tended to view the narrowed readings as extended usages, rather than as distinct senses in their own right. For instance, Becker (2002) maintains that the A2 reading of *finger* (in contrast with *thumb*) is not a distinct sense because it can be derived inferentially from the A1 reading by Grice's (1975) Maxim of Quantity. For instance,

[2] Kempson's (1980) lexical rule account of vertical polysemy, which is essentially a more general version of the markedness principle, similarly prioritises the broader readings of vertical polysemes. To account for the meaning variation in cases including *dog/bitch, cow/bull* and *rectangle/square*, Kempson proposes the following principle: any lexical item can be used in a narrower A2 reading that contrast with a B-term if the B-term is the only hyponym of the A-term along any one semantic dimension. However, the requirement that B should be the only hyponym of A is too strict. *Plant*, for instance, is superordinate to *fern, tree, shrub, herb* (among others), but *plant* nevertheless has a narrower A2 reading that contrasts with *tree* (see also Rohdenburg 1985a). Contrary to Kempson's assumption, vertical polysemy does not appear to be a type of regular polysemy, accountable for by a general lexical rule, but is rather motivated by factors such as cultural salience and prototypicality (Lehrer, 1990b).

assuming that a speaker who says *I've hurt my finger* is making the most informative statement she can, a hearer may infer that the more specific term *thumb* was not used because it would have been inaccurate or untruthful in the context. Consequently, *finger* can be interpreted as meaning 'not thumb'.

However, semantic markedness and pragmatic accounts often fail to take into account the potential conventionalisation of the readings. Interpretations that start off as contextual usages often become semanticised (see Traugott & Dasher 2002 and Horn 1984, who sees the pragmatic inferences that may motivate autohyponymy as a potential mechanism of semantic change). Significantly, vertical polysemy is also not always found cross-linguistically in translational equivalents. Indeed, Becker (2002) notes that the 'thumb-excluding' A2 reading is not triggered for the German *Finger*. If the narrower reading were purely pragmatic, we would expect to also find it in German, to the extent that pragmatic inferences are language-independent (as is assumed at least in classical Gricean theory). But these cross-linguistic differences suggest that English and German have developed different conventions for *finger* and *Finger*, which we would expect to be encoded differently in each language's lexicon.

Another kind of argument against analysing vertical meaning variation as polysemy is presented by Lehrer (1990a). She considers the relationship between *cup* and *mug* and maintains that the fact that *cup* can either include mugs or exclude them does not amount to polysemy, but is rather a reflex of the prototype structure of the CUP category. That is, the flexible boundaries of CUP can either be construed more narrowly, just including prototypical cups (small vessels commonly used with a saucer), or more broadly, also including mugs as more marginal members. The same prototypical/marginal structure applies to many other A/B pairs, including *shoe/boot, animal/bird, plant/tree* and *leather/suede*. However, although the meaning variation of *cup* and many other A-terms is motivated by prototype category structure, their broader and narrower readings are more than just variants of a single prototype category. There is a significant difference between the broader and narrower readings in these cases, to the extent that the readings can be shown to have different truth conditions. This is a traditional ambiguity criterion, according to which an ambiguous word can be simultaneously true and false of the same referent (Quine 1960). Consequently, a word can be held to be ambiguous if it can occur in sentences of the form *p and not p* – which is shown to be the case for the broader and narrower readings of *cup* in (2). A1 and A2 readings can also give rise to genuine ambiguity in some contexts, as was demonstrated by (1) above.

(2) A mug is a cup [A1] but it is not a cup [A2].

The meaning variation of some A-terms can therefore look like vagueness from one perspective, and from another show symptoms of ambiguity. Such cases can be accounted for in a model of word meaning where the distinction between ambiguity and vagueness is seen as a matter of degree.

2.1 The ambiguity-vagueness continuum and vertical polysemy

In cognitive linguistic literature it has been proposed that ambiguity and vagueness should be treated as the end points of a continuum, rather than as dichotomous categories

(see in particular Tuggy 1993 and Croft & Cruse 2004). Applying this model to vertical polysemy, A2 readings that represent a prototypical subset of the A1 reading can be viewed as less than fully autonomous senses. In this respect they resemble cases such as the 'cutlery knife' and 'kitchen knife' readings of *knife*, or the 'text' and 'tome' readings of *book*, which similarly exhibit some symptoms of autonomy together with symptoms of unity (see Cruse 2000; Croft & Cruse 2004). Such cases of meaning variation fall in between full polysemy and vagueness.

In other cases of vertical polysemy the readings are not related by prototype structure and can consequently be viewed as more clearly distinct senses – that is, closer to the 'ambiguity' end of the continuum. The 'male canine' reading of *dog*, for instance, does not represent a prototypical subset of canines in general: male dogs are not prototypical dogs, unlike members of a specific breed such as spaniel or Alsatian. The 'male canine' reading of *dog* is also more clearly demarcated from the broader 'canine' reading as it adds only one additional, binary property to the intension of the broader reading, as depicted diagrammatically in (a) in Figure 1. In contrast, the boundaries demarcating a prototypical A2 reading from the A1 reading may be more ill-defined and involve multiple gradable properties (see (b) in Figure 1). For instance, cups in the narrower sense differ from cups in general in terms of their size, shape and material.

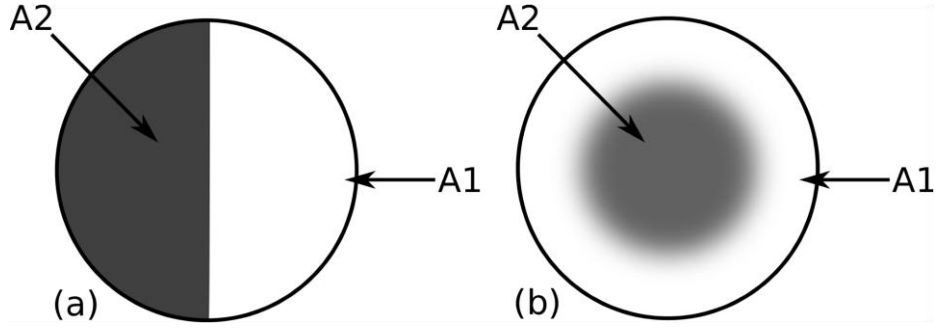


Figure 1: More and less distinct A2 readings.

In cases where the A1 and A2 readings are not fully autonomous, the distinction between them can also be more easily neutralised in certain contexts. For instance, in a compound noun such as *index finger* it is irrelevant whether the meaning of *finger* is construed more broadly or more narrowly: *index finger-A1* and *index finger-A2* would both refer to the same body part. The same applies to *court shoe*: because court shoes always by their design only come up to the ankle, the distinction between the broader and narrower readings of *shoe* is neutralised as no ambiguity could ensue. In contrast, *husky dog* could be genuinely ambiguous between 'a canine of the Husky breed' and 'a male canine of the Husky breed' readings.

The autonomy of the A1 and A2 readings is also reflected in the range of contexts where the readings can occur. For example, *cow* can be used in a broader reading that includes bulls, but this reading is in fact relatively weak in that its range of uses is limited (Lyons 1977; Rohdenburg 1985a, b and Haspelmath 2006). While it is possible to refer to a group of male and female bovines collectively as *cows*, more explicit

hyperonym uses are awkward (??*A bull is a cow*). Furthermore, *cow* cannot easily be used to refer anaphorically to *bull* (*#The farmer took his bull$_i$ to the market. He sold the cow$_i$ to his neighbour*). The use of weaker, less autonomous A2 readings is also more restricted. Such readings cannot co-occur with the B-term in explicitly negated contexts or other more contrastive contexts, although they can co-occur as part of an *and*-coordination construction (see Rohdenburg 1985a). For example, the meaning of *book* can be construed as excluding dictionaries, but this narrowed reading is not very strongly autonomous. *Book* and *dictionary* can co-occur in a coordination construction, but binary coordination and explicit negation are more awkward:

(3) He put all his books and dictionaries on the shelf.

(4) ?This shop sells both books and dictionaries.

(5) ?It's not a book, it's a dictionary.

To return to the point made earlier regarding the conventionalisation of the readings of a lexical item, Rohdenburg (1985a) stresses that the autonomy of the readings does not necessarily correlate with how established they are within the speech community. That is, in principle readings that are not very distinctive can nevertheless be conventionalised as distinct senses as a function of their frequency in language use (see also Langacker 1987; Bybee 2006 and other usage-based accounts of language).

This is a significant point that has implications both for theoretical accounts of polysemy, but also for the representation of word meaning in dictionaries. The aim of modern dictionaries is generally to represent the conventions of a language community, usually informed by corpus data on language use. However, dictionary definitions must also take into account the needs of the target audience (e.g. learners vs. native speakers) and practical considerations such as the size of the dictionary. Given the potential variation in distinctness and conventionality found in cases of vertical polysemy, a survey of dictionaries was carried out in order to investigate the following questions:

- How do dictionaries represent the A-terms' duality of meaning?
- On what grounds are A1 and A2 readings enumerated as distinct senses?
- (How) do dictionaries represent more subtle sense distinctions?
- How is the relationship between A- and B-terms represented (as inclusion or contrast)?

3. Vertical polysemy in dictionaries

To investigate the lexicographic representation of vertical polysemy, seven monolingual English dictionaries were surveyed, considering the representation of 12 pairs of A- and B-terms.

3.1 Dictionary survey methodology

The 12 A/B-terms considered in the study are listed in Table 1. The pairs were generally selected based on examples mentioned in the literature on vertical polysemy (in particular Kempson 1980; Horn 1984; Rohdenburg 1985a, b and Lehrer 1990a, b).

A-term	B-term
dog	*bitch*
cow	*bull*
duck	*drake*
gay	*lesbian*
finger	*thumb*
rectangle	*square*
animal	*bird*
plant	*tree*
shoe	*boot*
cup	*mug*
coat	*jacket*
leather	*suede*

Table 1: The A- and B-terms considered in the study.

The A-terms selected included four lexical items whose A2 reading is defined by a single additional binary feature (male/female), namely *dog, cow, duck* and *gay*. For all the other A-terms, the A2 reading is prototypical or otherwise less distinct definitionally.

Animal was paired with *bird*, although given that the narrow reading of *animal* denotes land-dwelling non-human mammals, the B-term could equally have been *reptile, fish, insect* or *human (being)*. *Animal* also has an intermediate sense that excludes just humans while encompassing other members of the animal kingdom, but the focus here was on the narrowest A2 reading. *Coat* and *jacket* were considered as terms for outer garments (rather than the top part of a suit), whereby they are primarily contrasted with respect to the length of the item of clothing.

Etymologically, most A-terms' broader readings predate their narrower readings, apart from *cow*, whose broader reading is a non-technical use developed from the earlier 'female domesticated bovine mammal' sense (*Oxford English Dictionary* 2nd ed. 1989). All terms were considered primarily as nouns, with the exception of *gay*, whose nominal use tends to be restricted to the plural form and which was therefore also considered as an adjective. The nominal and adjectival uses of *gay* were generally treated under the same entry in the dictionaries and as such the discussion below does not differentiate these.

The representation of the A- and B-terms was surveyed in the following monolingual desk-size English dictionaries:

American Heritage Dictionary of the English Language. 4th edn. (2000) [*AHD4*]
Bloomsbury English Dictionary, New Edition (2004) [*BED*]
Collins English Dictionary. 9th edn. (2007) [*CED9*]
Oxford Dictionary of English, 2nd edn. revised (2005) [*ODE2*]

Collins COBUILD Advanced Dictionary, 6th edn. (2009) [*COB6*]
Longman Dictionary of Contemporary English, 5th edn. (2009) [*LDCE5*]
Oxford Advanced Learner's Dictionary, 7th edn. (2005) [*OALD7*]

The first four of these dictionaries are general-purpose dictionaries aimed at native speakers (mostly by British publishers, apart from *AHD4*), while *COB6*, *LDCE5* and *OALD7* are monolingual learners' dictionaries. Given that vertical polysemy is not necessarily cross-linguistically constant across translational equivalents (as noted in section 2), non-native learners of English might be expected to particularly benefit from an explicit representation of the A-terms' duality of meaning.

3.2 The representation of the A-terms

Table 2 provides a summary of how the dictionaries represented the readings of the A-terms.

A-term	A1 and A2	Only A1	Disjunctive def.	Only A2
dog	AHD4, BED, CED9, COB6, LDCE5, OALD7, ODE2	-	-	-
cow	AHD4, BED, CED9, LDCE5, ODE2	OALD7	-	COB6
duck	AHD4, BED, CED9, LDCE5, OALD7, ODE2	COB6	-	-
gay	AHD4	BED, CED9, COB6, LDCE5, OALD7, ODE2	-	-
finger	-	AHD3, BED, CED9	OALD7, ODE2	COB6, LDCE5
rectangle	-	AHD4, BED, CED9, COB6, LDCE5, ODE2	-	OALD7
animal	AHD4, BED, CED9, COB6, LDCE5, OALD7, ODE2	-	-	-
plant	AHD4, BED, CED9, ODE2	COB6, LDCE5, OALD7	-	-
shoe	-	AHD4, BED, CED9, COB6, LDCE5, OALD7, ODE2	-	-

A-term	A1 and A2	Only A1	Disjunctive def.	Only A2
cup	-	AHD4, BED, CED9, COB6, LDCE5, OALD7, ODE2	-	-
coat	-	AHD4, BED, CED9, COB6, LDCE5, OALD7, ODE2	-	-
leather	-	AHD4, BED, CED9, LDCE5, COB6, OALD7, ODE2	-	-

Table 2: The representation of the A-terms in the dictionaries

Just over a third (36%) of all the A-term definitions (30 of the total 84 A-term entries in all the dictionaries combined) involved some form of polysemous representation. The A1 and A2 readings were either listed as separate senses of equal status or one was shown as a subsense (*ODE2* particularly made use of subsenses to highlight the relationship between the readings).[3] As Table 2 shows, all the dictionaries represented *dog* as vertically polysemous, and most also did so for *duck* and *cow*. *Animal* was also represented as a vertical polyseme in all the dictionaries surveyed, with some dictionaries enumerating three vertically related readings, including the intermediate 'non-human animate being' reading.

However, as Table 2 shows, the majority of the A-term entries did not enumerate the A1 and A2 readings explicitly, usually only listing the broader reading (although notably only the narrower reading was given for *finger* in *COB6* and *LDCE5* and for *rectangle* in *OALD7*). However, even though many of the entries did not separate the A2 reading as a distinct sense, they made use of other definitional techniques that served to indicate the duality of the A-term's meaning in relation to the B-term. Notably, in two of the dictionaries *finger* was given a disjunctive definition that covers both the A1 and the A2 readings as alternatives (see (6), emphasis added). However, traditional defining principles disfavour disjunctions (Geeraerts 2001), perhaps explaining why this type of definition was not used more commonly.

(6) **finger** […] one of the four long thin parts that stick out from the hand (<u>or five, if the thumb is included</u>) (*OALD7*)

[3] Among the polysemous representations, the broader A1 reading was generally listed above the narrower A2 reading. The main exception to this was *cow*, whose the narrower 'female bovine' reading was given first in all the dictionaries that distinguished its two senses. The learners' dictionaries also placed the narrower sense(s) of *animal* before the more general one, whereas all the dictionaries aimed at native speakers listed the broadest sense first. It is not entirely clear why the ordering of the senses of *animal* was different in the two types of dictionaries given that their policies on sense ordering were not consistently different. Most of the general-purpose and learners' dictionaries stated that senses were ordered on the basis of their frequency in language use.

Information regarding the A-terms' duality of meaning was also sometimes included in usage notes. Three of the dictionaries (*AHD4*, *BED* and *ODE2*) included a separate usage note for *gay*, which, among other things, mentioned the existence of the broader and narrower readings (see (7)). Only *AHD4* also enumerated the A1 and A2 readings separately, however.

(7) **Gay** in its modern sense typically refers to men (**lesbian** being the standard term for homosexual women) but in some contexts it can be used of both men and women. (*ODE2*)

In addition to such separate usage notes, the definition text for some of the other lexical items also included a metalinguistic comment on usage, through the use of adverbs such as *sometimes* or *often*:

(8) **cow** […] A **cow** is a large female animal that is kept on farms for its milk. People sometimes refer to male and female animals of this species as cows. (*COB6*)

(9) **finger** […] any of the digits of the hand, often excluding the thumb. (*CED9*)

The definition in (8) particularly makes an explicit comment on usage, but the use of *often* in (9) may also be interpreted as describing the use of the definiendum rather than characteristics of the referent.

Specifying adverbs such as *typically*, *usually* and *especially* also occurred in many of the definitions. As Geeraerts (2001) notes, such adverbs are commonly used to include extensional or encyclopaedic elements in dictionary definitions, and often serve the purpose of characterising prototypical category members. As discussed above, in many vertical polysemes the A2 reading designates a prototypical subset of the broader A1 category. In reflection of this, the definition of the A1 reading often (in 17 out of the 50 A-term entries that only listed the A1 reading) implicitly characterised the A2 reading through the use of such specifying adverbs (see examples (10)-(12)).

(10) **coat** […] An outer garment with sleeves, worn outdoors and typically extending below the hips. (*ODE2*)

(11) **shoe** […] A durable covering for the human foot, made of leather or similar material with a rigid sole and heel, usually extending no higher than the ankle. (*AHD4*)

(12) **rectangle** […] a two-dimensional geometric figure formed of four sides in which each angle is a right angle, especially one with adjacent sides of different length (*BED*)

Of course, many dictionary definitions generally include information about prototypical referents – for instance, the *ODE2* defines *tree* as 'a woody perennial plant, typically having a single stem or trunk'. Such information therefore does not necessarily mean that the prototypical subset constitutes a (semi-)autonomous narrower reading. Including information about prototypical referents within the A-term's definition is only equivalent to Lehrer's (1990a) analysis of the A1 and A2 readings as variants of a single prototype category. However, the A2 reading can be demarcated more clearly if the prototypical referents are explicitly contrasted with the B-term, as in (13) and (14).

(13) **rectangle** […] a plane figure with four straight sides and four right angles, especially one with unequal adjacent sides, in contrast to a square. (*ODE2*)

(14) **plant** […] a living thing that has leaves and roots and grows in earth, especially one that is smaller than a tree. (*LDCE5*)

Making an explicit reference to the contrast relationship between the A- and B-terms was one way in which the A/B relationship was represented in the dictionaries.

3.3 The representation of the A/B relationship

Many of the A-term entries in fact referred explicitly to the potential contrast with the B-term. Overall, 31 of the 84 A-term entries surveyed included some reference to the contrast with the B-term – see Table 3.

A-term	Dictionaries explicitly mentioning the A/B contrast
dog	LDCE5, OALD7, COB6
cow	LDCE5, **OALD7**
duck	CED9, LDCE5, OALD7, ODE2
gay	AHD4, **BED**, **LDCE5**, **OALD7**, **ODE2**
finger	**AHD4**, **BED**, **CED9**, LDCE5, **OALD7**, **ODE2**
rectangle	**LDCE5**, **ODE2**
animal	COB6, LDCE5, OALD7, ODE2
plant	BED, CED9, **LDCE5**, **OALD7**, ODE2
shoe	-
cup	-
coat	-
leather	-

Table 3: A-terms defined in explicit contrast with the B-term. In the dictionaries marked in bold only the A1 reading was given for the A-term.

17 of the 31 entries mentioning the A/B contrast defined the A2 reading as a separate sense, and the reference to the contrast was included with that definition. However, the other 14 entries gave only the A1 reading, and the potential for contrast with the B-term was noted as part of the definition text, as in (13) and (14) above. The A/B contrast was usually indicated by defining the A2 reading negatively in opposition to the B-term. This often provides the simplest way of defining the A2 reading: *finger*-A2 is one which is not the thumb, and *animal*-A2 is one which is not a human, bird, reptile or fish. In contrast, in cases where the A2 reading can be defined with the addition of a single feature (e.g., 'male dog', 'female duck'), the A/B contrast was more commonly indicated through cross-references (e.g. *duck*… compare DRAKE), examples (e.g. *Is this a dog or a bitch?*) or usage notes (as in some of the entries for *gay*).

As Table 3 shows, the potential A/B contrast was indicated more frequently for some terms than others. Notably, almost all the dictionaries (with the exception of *COB6*) mentioned the contrast between *finger* and *thumb*. *Plant* was also frequently contrasted

with *tree*, as was *gay* with *lesbian*. The narrower reading of *animal* was also almost always defined in opposition to *bird*, and usually also in opposition to *human (being)*, *reptile* and *fish*. On the other hand, none of the dictionaries noted explicitly the potential contrast for *shoe/boot*, *cup/mug*, *coat/jacket* and *leather/suede*.

The A/B contrast relationship was generally only indicated explicitly in the A-term entries, although a handful of the B-term entries included a cross-reference to the A-term (e.g. the *LDCE5* entry for *square* cross-referred to *rectangle*). More commonly, the B-term definition texts used the A-term as the genus term, that is, defined B as a type of A (e.g. ***mug****: a large* <u>*cup*</u>). In keeping with the classical *genus-differentiae* defining style, this implies that B is a direct hyponym of A. The majority of the B-term definitions (52%) used the A-term as the genus term. For instance, all the dictionaries defined *drake* as a type of *duck*, *tree* as a type of *plant* and *suede* as a type of *leather*. In cases such as *duck*, where the A-term is defined explicitly as a vertical polyseme, the genus term must of course be interpreted in the broader A1 reading. Consequently this representation prioritises the inclusion (rather than contrast) relationship between the A- and B-terms.

On the other hand, many of the B-term definitions (20%) used the same genus term as the A-term and thus, in principle, represented the two as co-hyponyms or sister terms.[4] In a few instances this was consistent with the representation of the A-term. As noted above, *COB6* and *LDCE5* only included the A2 reading of *finger* – and both also defined *finger* and *thumb* with the same genus term, *part* (*of your hand*). However, in most cases only the A1 reading was given for the A-term but the B-term was not defined as a type of A, but rather both A and B were defined as subordinates of the same genus term. For example, although most of the dictionaries defined *rectangle* only in the broader A1 reading, they did not define *square* as a type of rectangle, but instead used the more general *figure* or *shape* as the genus term for both *rectangle* and *square*. On the basis of such definitions, it is not clear whether the relationship between *rectangle* and *square* should be interpreted as one of inclusion or contrast. Such ambiguities could be taken to reflect the dual relationship that holds between the A- and B-terms – but they may simply be accidental inconsistencies introduced by different lexicographers. It is in fact well known that dictionaries' representation of taxonomic relations through genus term choice is often imperfect and prone to ambiguities and inconsistencies (see Ide & Véronis 1993 for discussion). Consequently it is difficult to interpret what the genus terms used in the definitions tell us about the relationship between the A- and B-terms.

3.4 A- and B-terms in dictionaries: a summary

Overall, the survey shows that dictionaries have at their disposal a range of methods for representing the A-terms' duality of meaning in relation to the B-term – from explicitly enumerating the A1 and A2 readings to including information about the A2 reading and the A/B-term contrast within the definition of the A1 sense. Applied consistently, such

[4] The remaining 28% of the B-term entries involved a mixture of definition types, including cases where the genus term of B was a hyponym of the genus term of A (e.g. *AHD4* defines *shoe* as a type of covering, but *boot* as a type of footgear) and cases where the taxonomic relationship was unclear (e.g. *ODE2* defined *gay* as 'a homosexual' and *lesbian* as 'a homosexual woman').

methods could potentially be used to represent the gradable nature of sense distinctions, in keeping with the ambiguity/vagueness continuum model of polysemy.

It was notable that cases where the A1 and A2 readings were enumerated separately were generally those where the narrower reading is a sex-specific subclass of the broader one (in particular *cow, dog* and *duck*). Representing these A-terms as vertical polysemes can be justified given that their A1 and A2 readings can be viewed as being more distinctive – compared to cases where the A2 reading represents a prototypical subset of the A1 reading.

However, some of the less distinctive A2 readings were also frequently enumerated separately. Although the A2 readings of *animal* and *plant* are prototypical, most of the dictionaries represented these lexical items explicitly as vertical polysemes. Notably some of the learners' dictionaries also only gave the narrower readings for *finger* and *rectangle* and many of the other dictionaries at least noted the potential for contrast between *finger* and *thumb* and *rectangle* and *square*. In comparison, all the dictionaries defined *shoe, cup, coat* and *leather* only in the broader sense, and none of them explicitly mentioned their potential for contrast with the B-terms.

The question, then, is why the duality of meaning and potential for A/B contrast should be represented explicitly for some terms but not others. One possibility is that the narrower readings of *shoe, cup, coat* and *leather* are less conventionalised or they have a weaker potential to contrast with their B-terms compared to *animal, finger* and other terms whose narrower readings and potential for A/B contrast were represented in the dictionaries. This hypothesis was explored by analysing data on the use of the A/B pairs in natural language.

4. A- and B-term co-occurrence in language use

Given that the vertical meaning variation of an A-term reflects the semantic relationship it contracts with the B-term (inclusion or contrast), we can gain some insight into the occurrence of the A1 and A2 readings in language by examining contexts where the A- and B-terms co-occur. Although this takes into account only a subset of the contexts where the A-term can be used, the A-terms examined here generally have a significant collocative relationship with their B-terms. Therefore, the A/B co-occurrence contexts represent an important subset of the A-terms' usage contexts. A commonly used measure of collocation strength is the Mutual Information score, which compares the probability of the co-occurrences of the terms with the probability of their occurring independently of each other (Church & Hanks 1990). In general, an MI score higher than 3 can be thought to indicate a significant collocation (Church & Hanks ibid.). The average A/B pair MI score was 5.98 – the highest scoring pair was *gay/lesbian* (10.25) and the lowest *plant/tree* (2.61). *Plant/tree* was also the only A/B pair whose MI score fell below the threshold value of 3. Although this means that *plant/tree* do not have a very strong relationship, we can nevertheless be confident that there is an association between them. This is based on another measure often used to find significant collocations, the t-score. T-score is a measure of the confidence with which we can assume that there is an association between the collocates. The critical value for assuming this with a 95%

confidence is 2.576 (Manning & Schütze 1999), and the t-scores of all the A/B pairs were above this threshold, including *plant/tree* (t-score of 14.995).

Although the A/B pairs thus form significant collocations, it is of course not necessarily the case that the frequencies of the A1 and A2 readings within the contexts where the A- and B-terms co-occur are representative of the global frequencies of these readings. Nevertheless, this methodology provides relevant information on how the relationship between the A- and B-terms is realised in language; to what extent they occur as a hyperonym/hyponym pair or as contrasting, incompatible terms. It is also informative to compare the different A/B pairs, to examine whether those terms whose potential for contrast is represented in the dictionaries are more likely to be used in contrastive ways. For the purposes of data coding, the explicit presence of the B-term also helped disambiguate the intended reading of the A-term, which can otherwise be unclear (given that the distinction between the A1 and A2 readings is often very subtle or easily neutralised). Limiting the focus to contexts where the A- and B-term co-occur was also useful for eliminating noise from contexts where the terms are used in other senses not relevant to the investigation.

4.1 Corpus study methodology

The British National Corpus (Davies 2004-) was searched for collocations of the A- and B-terms within a span of ±9 words. This span was the largest permitted by the Brigham Young University online corpus interface and was selected in order to include as many co-occurrence contexts as possible. The searches were limited to nominal uses, except in the case of *gay/lesbian*, where the part of speech of the search terms was left unspecified in order to collect both nominal and adjectival uses.

First any contexts where either the A- or the B-term occurred in an irrelevant sense were set aside (71 of the total 1693 contexts or 4.2%). These included proper noun uses (e.g. the surname *Boot*) or uses involving other senses of the words (e.g. *plant* in the 'industrial machinery' sense or *bitch* as an insult).[5] Metalinguistic uses of the terms were also discounted (e.g. *knee-jerk reactions to the very mention of the words* lesbian *and* gay). Any duplicated contexts and cases where the A-term co-occurred with two instances of the B-term within the 9-word span (e.g. *Do you want your chocolate in a cup or in a mug? A mug is bigger*) were counted only once. Such duplicates numbered 36 contexts, 2.8% of the total search results.

The remaining 1586 co-occurrence contexts were then coded for the meaning expressed by the A-term, specifically whether it was used in the broader A1 reading or in the narrower A2 reading in relation to the B-term. Contexts that were coded as involving the A1 reading included those containing constructions that are known to typically house hyperonym-hyponym pairs (Hearst 1992; Mititelu 2006). These included *Bs are As; Bs and other As*; *As, including Bs; such As as Bs* and *As, especially Bs*. Contexts where the A-term referred anaphorically to the B-term antecedent (e.g. (15)) and contexts where

[5] A large proportion (33.3%) of the uses of *coat* and *jacket* were excluded because the terms were used to refer to the top part of a suit rather than to an outer garment.

the B-term followed the A-term with the function of exemplification (as in (16)) were also coded as involving the A1 reading.[6]

(15) The best-developed colour vision of any creatures, though, is that of birds. These animals not only have five pigments in their retinas…

(16) I've got a big wardrobe at the moment but it mainly consists of shoes -- I bought these boots from Red or Dead.

Contexts where the A-term was modified with an adjective to contrast with B (e.g. *male dog*) were also coded as A1, as were cases where the A-term was used with generic reference as the attributive noun in a compound (as in *a shoe shop with some wellington boots outside*) or, in the case of *gay*, as an adjectival modifier (*a gay man*). Some of the animal terms also occurred in the A1 reading as the name of a species (e.g. *Tufted Duck*).

Contexts that were coded as involving the narrower A2 reading included cases where the A- and B-terms occurred within a construction that is associated with lexical contrast. Work on antonymy (esp. Mettinger 1994; Jones 2002; Davies 2012) has identified lexico-grammatical constructions with distinct discourse functions that are associated with the co-occurrence of opposing meanings. Importantly, these constructions are themselves associated with contrastive semantics, which means that they may induce a contrast relation between meanings that are not normally – or not always – construed as opposites (Murphy 2003; Davies 2012).[7] These structures include coordination constructions (both simple *A and B* coordination and binary coordination, as in *both As and Bs*), negated structures (*A, not B; As instead of Bs* etc.) and contexts expressing comparison (e.g. *bitches tend to live longer than dogs*) or transition (e.g. *shoes (loafers and royals) were replacing boots*).[8] The A- and B- terms were similarly used in contrastive ways in structures involving lexico-grammatical parallelism (see Davies 2012) – as illustrated by (17).

[6] As discussed in 2.1, only very strong A1 readings can be used to refer anaphorically to the B-term. Almost all the A-terms occurred in anaphoric contexts at least once in the data, with the exception of *cow*, *coat* and *leather*. For *cow*, this was to be expected (see the discussion above), whereas the non-occurrence of *coat/jacket* and *leather/suede* in anaphoric contexts is likely to be due to the low number of co-occurrence contexts that were analysed for these terms, rather than a reflection of the weakness of their A1 readings.

[7] The A/B pairs, when they occur in these constructions, are not necessarily *opposites*, that is, in a binary contrastive relationship. Although in some cases the A/B contrast is binary (esp. in cases where male and female individuals are contrasted), in other cases the A2 reading and the B-term are instead in a relationship of co-hyponymy, involving a contrast between multiple categories at the same taxonomic level. This is made explicit when A and B occur in multiple coordination constructions, as in *plants, shrubs and trees*.

[8] Simple *and*-coordination structures were the most common context within the data, making up 56% of all the coded contexts (808/1438 contexts) and 70% of the contexts coded as involving the A2 reading (808/1149 A2 contexts). As discussed above in 2.1, *and*-coordination constructions are indicative of only a weak contrastive relationship. However, almost all the A/B pairs also occurred at least once in a more strongly contrastive context (such as a binary coordination construction or a negated structure). The only exceptions were *coat/jacket* and *leather/suede*, but the non-occurrence of such stronger contrastive contexts for these pairs may be due to scarcity of data.

(17) Without water, nothing can live. Trees die, plants die, animals die, people die

Contexts where A and B were used in contrastive semantic roles were also coded as involving the A2 reading. These mainly involved the use of terms for male and female animals in contexts relating to mating or breeding (e.g. *All the drakes are chasing the duck*).

Any contexts where there was any uncertainty as to the intended meaning of the A-term were set aside and discounted from the calculations (94 [5.9%] out of the 1586 contexts). Similarly discounted were any cases where the A-term was modified in such a way that the distinction between the A1 and A2 readings was neutralised, as in the case of *index finger* and *court shoes* discussed in 2.1 above (54 contexts or 3.4%).

4.2 A1 and A2 readings in co-occurrence contexts

Table 4 shows the frequencies of the readings of the A-terms in the corpus data.

A-term	A1	A1 %	A2	A2 %	Total
cow	1	1.1	91	98.9	92
finger	5	3.2	149	96.8	154
leather	1	6.7	14	93.3	15
rectangle	2	6.9	27	93.1	29
cup	1	8.3	11	91.7	12
coat	2	9.5	19	90.5	21
shoe	11	10.5	94	89.5	105
gay	95	20.4	370	79.6	465
animal	67	24.0	212	76.0	279
plant	57	37.0	97	63.0	154
dog	22	40.0	33	60.0	55
duck	25	43.9	32	56.1	57

Table 4: Raw figures and percentage proportions of the A1 and A2 readings of the A-terms in the corpus data, ranked according to the frequency of the A2 reading.

It is striking that for all 12 A-terms, the majority of the co-occurrence contexts involved the narrower A2 reading. On average the A/B pairs were used in contrastive ways in 82.4% of the contexts, or 4.7 times as often as they were used as a hyperonym/hyponym pair. Given that the contexts where the A- and B-terms co-occur represent only a subset of the contexts where the A-term is used, the frequencies in Table 4 should naturally not be interpreted as reflecting the global frequencies of the broader and narrower readings of the A-terms. For example, just on the basis of introspection, we may assume that *dog* is more likely to generally be used to refer to the species rather than to male animals. Nevertheless, the high frequencies of the A2 readings in the data show that all the A/B pairs have a strong potential to be used in contrastive ways in contexts where they co-occur. Thus we can infer that their narrower readings are relatively conventionalised. In

comparison, consider the pair *book* and *dictionary*. Within 68 *book/dictionary* co-occurrence contexts retrieved from the BNC (following the same procedure as for the A/B-terms), *book* was used as a co-hyponym of *dictionary* only 7.4% of the time (5/68 contexts). This suggests that the A2 reading of *book* is not as strongly established as the A2 readings of the 12 A-terms considered here.

There are a number of factors that may have contributed to the high frequency of the A2 readings in the A/B co-occurrence contexts. The very high frequency at which *cow* was used in the A2 reading in contrast with *bull* was unsurprising, given that the A1 reading of *cow* is generally held to be a weaker usage. But in other cases the explicit presence of the B-term may have made the potential A/B contrast relationship particularly salient. In the case of *dog/bitch* and *duck/drake*, for example, the B-term tends to occur in contexts concerning animal husbandry or biology. In such contexts the distinction between male and female animals is particularly relevant, and thus the A-term would be more likely to occur in the sex-specific narrower reading. A similar argument could also apply to some of the other A/B pairs. It is also worth noting that although the ±9 word span that was used in the collocate search was the largest allowed by the corpus tool, some of the relevant co-occurrence contexts would still have been excluded. In particular, anaphoric reference using the superordinate term can occur over long distances (possibly even across paragraphs – see Ariel 1988), and thus many such uses of the A1 reading were inevitably left out of consideration.

4.3 Comparing different A-terms

While all the A-terms occurred more frequently in the narrower A2 reading in the A/B co-occurrence contexts, Table 4 shows that some A/B pairs were used in contrastive ways more frequently than others. Comparing the frequencies of the A2 readings of different A-terms suggests that A-terms whose narrower A2 readings were explicitly represented in the dictionaries do not necessarily have the strongest potential to contrast with their B-terms.

Overall, a chi-square test shows that highly significant differences exist between the frequencies of the A1 and A2 readings of the different A-terms (X^2=125.06, df=11, p<0.001). Pairwise comparisons were then performed between all the different A-terms by using the Marascuilo procedure to identify statistically significant differences (see Table 5).

Pairwise comparison	**Difference**	**α**	**Decision**
cow vs. *animal*	-0.2293	<0.0001	S
cow vs. *duck*	-0.4277	<0.0001	S
cow vs. *plant*	-0.3593	<0.0001	S
cow vs. *gay*	-0.1934	<0.0001	S
cow vs. *dog*	-0.3891	0.0004	S
finger vs. *animal*	-0.2077	<0.0001	S
finger vs. *gay*	-0.1718	<0.0001	S
finger vs. *plant*	-0.3377	<0.0001	S

Pairwise comparison	Difference	α	Decision
finger vs. *duck*	-0.4061	0.0001	S
finger vs. *dog*	-0.3675	0.0018	S
shoe vs. *plant*	-0.2654	0.0021	S
shoe vs. *duck*	-0.3338	0.0297	S
shoe vs. dog	-0.2952	0.1209	AS
rectangle vs. *plant*	-0.3012	0.0114	S
rectangle vs. *duck*	-0.3696	0.0343	S
rectangle vs. *dog*	-0.3310	0.1184	AS

Table 5: The output of the Marascuilo procedure showing significant differences between different A-terms (S) and differences approaching significance (AS). All other pairwise comparisons were non-significant.

As expected, *cow* was significantly more likely to occur in the A2 reading than many of the other A-terms. However, *finger* also occurred almost always (in 96.8% of the contexts considered) in the narrower A2 reading, significantly more often than many of the other A-terms. Given that *finger* and *thumb* thus have a high potential to contrast, we can infer that the narrower reading of *finger* is very conventionalised. We might therefore expect it to be represented in dictionaries (and in the mental lexicons of language users – contra Becker 2002). A few of the dictionaries did define the A2 reading of *finger* explicitly, but not all of them did so. Most of the dictionaries did, however, note the potential contrast between *finger* and *thumb*.

In contrast, none of the dictionaries defined *shoe* in the narrower A2 reading or included explicit information regarding the potential contrast between *shoe* and *boot*. *Shoe* and *boot* have a fairly strong collocative relationship (MI score of 5.29 and t-score of 11.075) and the data in Table 4 shows that *shoe* and *boot* are very likely to contrast in contexts where they co-occur. In this respect *shoe* in fact differed significantly (or almost significantly) from *duck*, *dog* and *plant*, all of which occurred in the narrower reading less often in the data.[9] It is not clear why the dictionaries were reluctant to represent the duality of the meaning of *shoe* and its potential contrast with *boot*. It may be a reflection of the fact that the readings of *shoe* are related by prototype structure and consequently less distinctive. However, prototypical and less distinctive A2 readings should also have their place in dictionaries in cases where they are conventionalised. As the data here suggests that the potential contrast between *shoe* and *boot* is well established, it would also warrant some recognition in the lexicographic representation of the word's meaning.

Although all the A-terms were more frequently used in the narrower A2 reading in the data, *duck* and *dog* were the least likely to occur in the narrower reading compared to

[9] It is worth noting that although *leather*, *cup* and *coat* also occurred more frequently in the narrower reading than many of the other A-terms (see Table 4) so few co-occurrence contexts were analysed for these terms that they did not differ statistically from any of the other A-terms. Thus although the data does suggest that *leather*, *cup* and *coat* are frequently used in the narrower reading in contexts where they co-occur with their B-terms, given the scarcity of data, we must be careful when drawing conclusions regarding the relative conventionality of their A2 readings.

the other A-terms – and more likely to occur in the broader reading. In this they differed significantly from some of the other A-terms. A possible explanation for the comparatively higher frequencies of the A1 readings of *duck* and *dog* in the data is that their broader A1 readings are more established than their A2 readings. As sex-specific terms for animals, the narrower A2 readings of *duck* and *dog* can be viewed as semi-technical usages, restricted to specialised registers – unlike their broader readings. This might explain why the broader, hyperonym uses of *duck* and *dog* were relatively more dominant in the data. That almost all the dictionaries listed the A2 readings of *dog* and *duck* as separate senses may therefore reflect the definitional distinctiveness of these readings rather than how strongly established they are.

5. Discussion and conclusion

Reflecting on the lexicographic representation of vertical polysemes, Rohdenburg (1985b: 71) remarks that "lexicographers tend to concentrate on the general sense of the unmarked term [i.e., the A-term]" and "on the whole, the specific sense of the unmarked term is sadly neglected by both lexicographers and general linguists". The survey of seven monolingual English dictionaries suggests that the specific senses that tend to be 'neglected' are those that are relatively less distinctive, generally representing prototypical subsets of the more general reading of the A-term. This is despite the fact that these narrower readings are established in language use, insofar as they occur very frequently in contexts where the A-terms co-occur with the B-terms. Cases where the vertical polysemy of the lexical item was represented more explicitly in the dictionaries tended to involve A1 and A2 readings that were more distinctive and not related by prototype structure. This is justifiable given that such cases would fall closer to the 'ambiguity' end of the ambiguity-vagueness continuum. However, the corpus data, particularly in the case of *dog* and *duck*, shows that A-terms whose narrower readings are more distinctive definitionally do not always have the strongest potential to contrast with their B-terms, and their narrower readings are not necessarily as strongly established than those of other vertical polysemes.

Some of the less distinctive narrower readings were also defined as separate senses (especially for *animal*, *plant* and to a lesser extent *finger* and *rectangle*), but the corpus data suggests that there would be equally strong grounds for dictionaries to also represent the duality of meaning of terms such as *shoe*. This would not necessarily have to involve listing the broader and narrower readings as separate senses, as the dictionary survey showed that lexicographers have at their disposal a range of more subtle methods for representing meaning variation. This includes disjunctive definitions, metalinguistic comments on usage and the inclusion of information about prototypical category members and the potential for A/B contrast within the definition text. Such definitional techniques could be used for cases where the A1 and A2 readings are less distinctive but nevertheless conventionalised. Used systematically, different definitional techniques could potentially be used to reflect the gradable distinctness of sense, in keeping with the model of polysemy suggested in cognitive linguistic literature.

Comparing the general purpose and learners' dictionaries, it was notable that in a few cases the learners' dictionaries were more prepared to represent the narrower readings of

the A-terms as distinct senses. For instance, two of the learners' dictionaries defined *finger* only in the narrower reading, while many of the general-purpose dictionaries prioritised the broader reading, even though the corpus data suggests that the narrower reading of *finger* is highly established. The learners' dictionaries' prioritisation of the narrower readings may reflect the known cross-linguistic differences in the meaning of 'finger', which are important to bring to the attention of learners of English.

The corpus data showed that in contexts where they co-occur, the A- and B-terms are more frequently used in contrastive ways than as a hyperonym/hyponym pair. This is an interesting finding with relevance for the general function of lexical contrast in language. Research on opposites has shown that words with opposing meanings tend to co-occur significantly more frequently than would be expected by chance (e.g. Justeson & Katz 1991; Jones 2002). The pattern demonstrated here is the reverse: when words that have an established potential to either contrast or function as a hyperonym/hyponym pair occur in the same context, they tend to be used in contrastive ways. This pattern warrants further investigation, as does a more fine-grained analysis of the types of lexico-grammatical contexts where vertical polysemes can occur, as evidence of the relative strength of their broader and narrower readings.

References

Dictionaries

American Heritage Dictionary of the English Language, 4th edn. (2000) Boston: Houghton Mifflin.

Bloomsbury English Dictionary, New Edition (2004) London: Bloomsbury.

Collins English Dictionary, 9th edn. (2007) Glasgow: HarperCollins

Oxford Dictionary of English, 2nd edn. revised (2005) Oxford: Oxford University Press.

Collins COBUILD Advanced Dictionary, 6th edn. (2009) London: HarperCollins.

Longman Dictionary of Contemporary English, 5th edn. (2009). Harlow: Longman Pearson.

Oxford Advanced Learner's Dictionary, 7th edn. (2005) Oxford: Oxford University Press.

Other sources

Ariel, Mira (1988). "Referring and accessibility". *Journal of Linguistics, 24(1),* 65-87. DOI: 10.1017/S0022226700011567

Becker, Thomas (2002). "Autohyponymy: Implicature in lexical semantics, word formation, and grammar". *Journal of Germanic Linguistics, 14(2),* 105-136. DOI: 10.1017/S1470542702000065

Bybee, Joan (2006). "From usage to grammar: the mind's response to repetition". *Language, 82(4),* 711-733.

Church, Kenneth & Patrick Hanks (1990). "Word association norms, mutual information, and lexicography". *Computational Linguistics, 16(1),* 22-29.

Croft, William & D. Alan Cruse (2004). *Cognitive linguistics.* Cambridge: Cambridge University Press.

Cruse, D. Alan (2000). "Aspects of the microstructure of word meanings". In Y. Ravin & C. Leacock (Eds.), *Polysemy: Theoretical and computational approaches* (30-51). Oxford: Oxford University Press.

Davies, Matt (2012). "A new approach to oppositions in discourse: The role of syntactic frames in the triggering of non-canonical oppositions". *Journal of English Linguistics, 40(1),* 47-73.

Davies, Mark (2004-). *BYU-BNC.* (Based on the British National Corpus from Oxford University Press). Available online at http://corpus.byu.edu/bnc/. DOI: 10.1177/0075424210385206

Geeraerts, Dirk (1993). "Vagueness's puzzles, polysemy's vagaries". *Cognitive Linguistics, 4(3),* 223-272. DOI: 10.1515/cogl.1993.4.3.223

Geeraerts, Dirk (2001). "The definitional practice of dictionaries and the cognitive conception of polysemy". *Lexicographica, 17,* 6-21. DOI: 10.1515/9783110244212.6

Grice, H. Paul (1975). "Logic and conversation:. In P. Cole & J. L. Morgan (Eds.), *Syntax and semantics 3* (41-58). New York: Academic Press.

Haspelmath, Martin (2006). "Against markedness (and what to replace it with)". *Journal of Linguistics, 43(1),* 25-70. DOI: 10.1017/S0022226705003683

Hearst, Marti A. (1992). "Automatic acquisition of hyponyms from large text corpora". *Proceedings of the fourteenth international conference on computational linguistics,* Nantes, France. DOI: 10.3115/992133.992154

Horn, Laurence R. (1984). "Toward a new taxonomy for pragmatic inference". In D Schiffrin (Ed.), *Meaning, form, and use in context* (11-42). Washington: Georgetown University Press.

Huang, Yan (2009). "Neo-Gricean pragmatics and the lexicon". *International Review of Pragmatics, 1,* 118-153. DOI: 10.1163/187731009X455866

Ide, Nancy & Jean Véronis (1993). "Extracting knowledge bases from machine-readable dictionaries: Have we wasted our time?" *Knowledge Bases & Knowledge Structures 93,* Tokyo.

Jones, Steven (2002). *Antonymy: A corpus-based perspective.* London: Routledge.

Justeson, John S. & Slava M. Katz (1992) "Redefining antonymy". *Literary and Linguistic Computing, 7,* 176-184. DOI: 10.1093/llc/7.3.176

Kempson, Ruth M. (1980). "Ambiguity and word meaning". In S. Greenbaum, G. Leech & J. Svartvik (Eds.), *Studies in English linguistics* (7-16). London: Longman.

Langacker, Ronald W. (1987). *Foundations of cognitive grammar* (Vol. 1). Stanford: Stanford University Press.

Lehrer, Adrienne (1990a). "Prototype theory and its implications for lexical analysis". In S. L. Tsohatzidis (Ed.), *Meanings and prototypes* (368-381). London: Routledge.

Lehrer, Adrienne (1990b). "Polysemy, conventionality, and the structure of the lexicon". *Cognitive Linguistics, 1(2),* 207-246. DOI: 10.1515/cogl.1990.1.2.207

Lyons, John (1977). *Semantics* (Vol. 1). Cambridge: Cambridge University Press.

Manning, Christopher D. & Hinrich Schütze (1999). *Foundations of statistical natural language processing.* Cambridge, MA: MIT Press.

Mettinger, Arthur (1994). *Aspects of semantic opposition in English*. Oxford: Clarendon Press.

Mititelu, Verginica B. (2006). "Automatic extraction of patterns displaying hyponym-hypernym co-occurrence from corpora". *Proceedings of the first CESCL*. Budapest, Hungary.

Murphy, M. Lynne (2003). *Semantic relations and the lexicon*. Cambridge: Cambridge University Press.

Oxford English Dictionary, 2nd ed. (1989). Oxford: Oxford University Press.

Quine, Willard van Orman (1960). *Word and object*. Cambridge, MA: MIT Press.

Rohdenburg, Günther (1985a). "Dogs, bitches and other creatures". *Journal of Semantics, 4*, 117-135.

Rohdenburg, Günther (1985b). "Unmarked and marked terms in English". In G. A. J. Hoppenbrouwers, P. A. M. Seuren & A. J. M. M. Weijters (Eds.), *Meaning and the lexicon* (63-71). Dordrecht: Forris. DOI: 10.1093/jos/4.2.117

Traugott, Elizabeth Closs & Richard B. Dasher (2002). *Regularity in semantic change*. Cambridge: Cambridge University Press.

Tuggy, David (1993). "Ambiguity, polysemy, and vagueness". *Cognitive Linguistics, 4(3)*, 273-290. DOI: 10.1515/cogl.1993.4.3.273

Zgusta, Ladislav (1971). *Manual of lexicography*. The Hague: Mouton.

Zwicky, Arnold M. & Jerrold M. Sadock (1975). "Ambiguity tests and how to fail them". In J. P. Kimball (Ed.), *Syntax and semantics 4* (1-36). London: Academic Press.

About the author

Anu Koskela received her Doctorate in Linguistics from the University of Sussex, Brighton, UK, and currently works as a Lecturer in English Language at De Montfort University in Leicester, UK. Her research is focused on lexical semantics and cognitive linguistics, particularly on polysemy, categorisation, meaning relations and metonymy. She is the co-author (with M. Lynne Murphy) of *Key Terms in Semantics* (2010, Continuum).

DEGREES OF PROPOSITIONALITY IN CONSTRUALS OF TIME QUANTITIES[1]

MIKOŁAJ DECKERT
University of Łódź
mikolaj.deckert@gmail.com

PIOTR PĘZIK
University of Łódź
piotr.pezik@gmail.com

Abstract
The paper investigates the possible conceptual bases of differences between seemingly synonymous and easily definable temporal expressions. Looking at the usage patterns of nominal temporal phrases in reference corpora of English and Polish we attempt to relate these subtleties to the different granularity of the cognitive scales on which construals of time quantities in general are based. More specifically, we focus on a subset of nominal temporal expressions which adhere to the "number + time unit" pattern, matching what Haspelmath (1997: 26) describes as "culture-bound artificial time units". Using the British National Corpus (BNC) and the National Corpus of Polish (NCP), we first analyse both the variation and the regularity found in naturally-occurring samples of Polish and English. Finally, we compare the patterns of use emerging from the two corpora and arrive at cross-linguistic generalisations about the conceptualisation of time quantities.

Keywords: time, temporal expressions, cognitive linguistics, Polish, corpus linguistics, conceptualisation, English

1. Introduction

Quantification is an important aspect of time conceptualisation. Linguistic as well as psychological research shows that to think about abstract notions we rely on metaphorical mappings (cf. Gruber 1965, Clark 1973, Lakoff and Johnson 1980, Alverson 1994, Casasanto and Boroditsky 2008, Evans 2013). Reasoning about duration, then, activates the domains of distance and amount, both of which can be considered as subdomains of space. Along those lines, Haspelmath (1997: 23) lists quantifiability of time – the fact that stretches or spans can be "evaluated quantitatively" and measured – as one of its major properties.

[1] Research carried out within COST Action TD0904 TIMELY, supported by the National Science Centre (NCN), grant No. 2011/01/M/H 2/03042, Percepcja czasu jako kategorii językowej [Perception of Time as a Linguistic Category].

Western languages have developed a variety of lexical devices for denoting discrete quantities of time. In strictly technical contexts, expressions such as *an hour* or *one minute* have well-established, unambiguous meanings. They can be redefined compositionally as integer multiples of *the second*, the base unit of time, which has astronomical and physical interpretations as a fraction of a mean solar day and a certain number of periods of radiation respectively. In non-technical communication, however, the meaning of expressions such as *10 hours*, *7 minutes* or *60 seconds* depends on a considerable number of factors, which may be both static and context-dependent in nature. For example, in actual usage the meaning of the English expression *half an hour* is often only an approximation of *exactly 1800 seconds*. Similarly, the meaning of *half an hour* is more often different from than (practically) identical with that of the technically synonymous expression *30 minutes* which seems to be more likely to be interpreted literally.

2. Meaning as conceptualisation

It is an important premise of this study that meaning can be understood in terms of conceptualisation (Langacker 1987, 2008), and depends on how conceptual content is mentally structured, and then linguistically represented. To refer to the different ways of portraying a scene we will use the term "construal" proposed by Langacker in Cognitive Grammar, an approach viewed as part of Cognitive Linguistics (cf. Evans and Green 2006, Geeraerts 2006, Geeraerts and Cuyckens 2007). Also, we will utilise the construct of "granularity", one of the parameters of construal – interchangeably referred to as "specificity"/"schematicity" and "resolution" – to describe two strata of time categorisation examined in the paper – the more fine-grained stratum of seconds/minute, and the more coarse-grained stratum of minutes/hour.

In line with the Cognitive Linguistics proposal to see meaning construction as conceptualisation, truth criteria (cf. e.g. Davidson 1967) cannot fully account for an expression's meaning. For example, while (a) and (b) below are equivalent as far as their truth-conditions go, we would argue that there is a systematic difference in their meanings:

(a) She had to spend half an hour marking just one short paragraph.

(b) She had to spend thirty minutes marking just one short paragraph.

By investigating a subset of temporal-quantificational expressions in English and Polish data, this study attempts to contribute to the integration of research into temporal cognition and numerical cognition. It should be noted that the domains of time and number build up the most fundamental types of human experience and are critical in categorisation and making sense of the world. To start with, there are vital points of convergence between language and numerical cognition. Numbers are among the very first vocabulary items one learns when trying to master a language, and language has been demonstrated to play an important role in the development of numerical skills (cf. Pica et al. 2004). There is, moreover, some compelling evidence suggesting that to perform exact quantification of sets larger than 3 one needs to have language terms corresponding to those numerical concepts (Everett and Madora 2012, cf. Everett 2013). Time, in turn, is crucial in our understanding of general conceptions like change, and

some more specific ones like motion. Simultaneously, time is intangible in the sense that we only sense its physical representations – digits changing on a screen, a rotating hand of the clock, a timeline in a history book, or the steady ticking sound – which could be an argument against the view that time is "objectively real" (Evans 2004 : 4). One vital, and relatively direct, manifestation of how time is conceptualised is how it gets expressed linguistically, since – in line the Cognitive Linguistics tenets – "language offers a window into cognitive function, providing insights into the nature, structure and organisation of thoughts and ideas" (Evans and Green 2006 : 5).Therefore, looking into the language of time, and incorporating the variable of number as is the case in this study, will be a major way to uncover conceptual structure in those domains. To that end, our investigation combines quantitative and qualitative methods. We first investigate the distributional evidence found in reference corpora to go beyond mere introspection in identifying language use tendencies. This quantitative survey is then supplemented with a microscopic analysis of corpus data, which makes it possible to come up with an empirically-grounded account of language user behaviour patterns.

3. Construals and representations of time

This investigation is concerned with a distinction between two types of time-quantifying construals found in Polish and English data. One of those types is referred to as "cumulative" whereby time is organised as a set of units (e.g. 30 seconds) and the other one is termed "fractional" with time magnitudes being conceptualised as fractions – or profiles – of superordinate structures (e.g. half a minute). Both types of construals are illustrated in the following concordances extracted from the British National Corpus:

Type	Concordance	Source
CUMULATIVE	Give him ***thirty seconds*** and you will have knitting.	BNC A6T
FRACTIONAL	***Half a minute*** later Benny's father came in full of anxiety.	BNC CCM

We start from the observation that the distribution of cumulative vs. fractional construals is clearly asymmetric. That is to say, the distribution of these forms in reference corpora of Polish and English suggests that speakers evidently tend to favour one type of construal over the other. For instance, speakers of English show a preference for the cumulative construal of "thirty seconds" over the fractional one of "half a minute". This tendency is reversed in conceptualisations of the period of thirty minutes, where the fractional construal dominates over the cumulative one. To gain insight into the asymmetry we pose the following questions:

1. Are those construal selection asymmetries analogous at different levels of temporal quantification granularity?
2. Are potential differences across levels of temporal granularity (seconds/minute vs. minutes/hour) analogous cross-linguistically?

3. What motivates language users to opt substantially more often for one of the construals?

4. Analysis

4.1 Quantitative analysis: Cumulative vs. fractional construals of time quantities in English and Polish

In order to find out how the instantiations of these two types of construals are distributed in samples of naturally-occurring Polish and English, we designed a set of corpus queries matching the different variants of the four adverbial expressions in question: *30 minutes*/*30 minut* [30 minutes-GEN.PL], *30 seconds*/*30 sekund* [30 second-GEN.PL], *half a minute*/*pół minuty* [half minute-GEN] and *half an hour*/*pół godziny* [half hour-GEN]. The queries were run against the full text indexes of the ca. 100 million word British National Corpus (BNC) and the 250 million word balanced component of the National Corpus of Polish (NCP) (Pęzik 2012). As shown below, the results returned contain different variants of the same numeral and, in the case of the Polish data, variable inflections of both the cardinal number and the nominal head of the phrase.

#	Concordance	Source
1	Podróże turystycznymi statkami między wyspami trwają od ***30 minut*** do sześciu godzin. [Tourist ship journeys between islands take from **30 minutes** <30-GEN minute-GEN.PL> to six hours.]	Życie Warszawy, NCP
2	Po około ***30 minutach*** nadmiar kosmetyku zbierz chusteczką higieniczną. [After approximately **30 minutes** <30-LOC minute-LOC.PL> wipe excess cosmetic with a tissue.]	Naj, NCP
3	***Trzydzieści minut*** przed rozpoczęciem ocen... **[Thirty minutes** <thirty-NOM minute-GEN.PL> before the beginning of the evaluation…]	Odory, NCP
4	- Umarł przed ***trzydziestoma minutami*** – powiedział Kowalski. [He died **thirty minutes** <thirty-INS minute-INS.PL> ago – Kowalski said.]	Stawka większa niż Życie, NCP

The results of these queries are summarised in the table below. Generally, we see some variation in the frequencies of these seemingly synonymous expressions. In the BNC the expression *half (a) minute* (what we call fractional construal) occurs 84 times, whereas

30/thirty seconds (cumulative construal) has 310 occurrences. The phrase *half (an) hour* occurs 1912 times, with only 653 instances of *30/thirty minutes*.

		English		**Polish**	
granularity level	**linguistic representation**	**fractional construal**	**cumulative construal**	**fractional construal**	**cumulative construal**
seconds/minute	half a minute/30 seconds	84	310	379	466
minutes/hour	half an hour/30 minutes	1912	653	5202	1329

The corresponding NCP data suggest a preference for the cumulative construal of the period of 30 minutes in Polish, too, but it is relatively less prominent (379:466) than in the BNC data. We then see an interesting shift at the minute/hour level, where the fractional construal is more frequent in both the Polish and English data.

If we assume that the sampling of the data in the two corpora is sufficiently random and representative, then a non-parametric test could be performed to assess the statistical significance of these discrepancies. Applying the Fisher's exact test on the contingency table with the BNC counts confirms the high significance of these disproportions ($p<0.0001$).

granularity level	**fractional**	**cumulative**
seconds/minute	84	310
minutes/hour	1912	653

BNC contingency table for the fractional/cumulative construal counts

In other words, in purely statistical terms, the fractional expressions are significantly more frequent when used to refer to the period of 30 minutes (as in *half an hour*, *pół godziny*) than when they are used to denote 30 second periods (*half a minute*, *pół minuty*) in both the Polish and British English data analysed.

granularity level	**fractional**	**cumulative**
seconds/minute	379	466
minutes/hour	5202	1329

NCP contingency table for the fractional/cumulative construal counts

The quantitative results presented here should be taken with caution. One example of a possible source of statistical bias in the NCP is the overrepresentation of the transcripts of the proceedings of the Polish Sejm, in which Members of the Parliament are regularly reminded about the 30 second limit for follow-up questions asked during parliamentary debates. However, the manual inspection of the retrieved concordances did not reveal any sampling bias which could substantially change the significance of these results.

We can therefore proceed to hypothesize about the possible cognitive basis of these distributions. In general, the preference for the fractional construal type at the minutes/hour level of granularity can be explained with reference to the differences in the conceptualisation of small and larger numerosities. Small numerosities can be conceptualised by drawing on the one-one correspondence principle (cf. Gelman and Gallistel 1978), which would be the case with 2-based quantifications like "half + time unit". For a number like "30", the cardinality principle (cf. e.g. Sarnecka and Carey 2008) is activated, whereby the size of a set is determined by the last number mentioned in the counting sequence. The comparatively large amount of mental effort required for even rapid mental scanning of a numerosity such as "30" could account for the fractional bias in temporal quantification which has been observed for the minutes/hour level in the two reference corpora.

This explanation, however, does not seem to apply to the differences between the frequencies of *half a minute* and *30 seconds* observed in the corpus data. At this level, the cumulative construal is more frequently chosen by speakers of Polish and English, which suggests that the difference in span – and therefore in the type of experience as well as in the amount of mental computation necessary for conceptualisation – between *30 seconds* and *30 minutes* is one of the decisive factors. In other words, it may be hypothesized that with the durative shortness of *30 seconds* – relative to *30 minutes* – we experience the passage of time more directly and this is expressed in language.

Another possible explanation for these quantitative discrepancies is environmental in nature (cf. Dahaene and Mehler 1992). The cumulative construal is more suitable for finer-grained quantification. It is therefore natural that once we reason and talk about temporal quantities at the very fine-grained level of 1-60 seconds, the context is likely to require special precision of expression. The more coarse-grained level, between 1 and 60 minutes, is generally more relevant to our basic and most common experience expressed in language, like the daily schedule, meetings, meals, travel or sleep. As we are biologically conditioned to seek balance between precision and cognitive effort, in such contexts the "rounded" formulaic uses often suffice, and those uses – as we demonstrate in this paper – are conducive to fractional construals.

The objective of the qualitative analysis that follows is to examine in greater detail the construal selection pattern uncovered in the distributional study and to propose explanations.

4.2 Qualitative analysis

Given the evident preference for either cumulative or fractional construal in English and in Polish, the question is what motivates that choice. We posit that one explanation is that speakers draw on the differentiation to modulate between two poles –

propositionality and formulaicity – when they construct time in language. As speakers intend to reach a particular communicative goal, they choose the construal that will serve their purposes optimally, vitally considering the parameter of precision.

Based on that, our argument is that the cumulative construal is used more typically to signal a near-precise/propositional meaning while the fractional construal is better-fitted to prompt an approximate interpretation of a temporal-numerical value.

4.2.1 Propositionality and formulaicity of temporal expressions

The distinction between "propositional" or "compositional" and "formulaic" or "automatic" use of semantic and syntactic linguistic constituents reflects one of the basic dichotomies of language use. According to the Principle of Compositionality, which is described as "a widely acknowledged cornerstone for any theory of meaning" (Werning 2012: 633), the meaning of complex expressions is fully determined by the meaning and structure of their constituents (Szabó 2013) and their syntactic arrangement. Therefore, compositionally, the expression *30 minutes* would seem to be equivalent to the expression *half an hour,* as long as we assume that the meanings of both of these expressions can be derived from the meanings of their syntactically arranged lexical constituents. However, as studies of formulaic language have shown, the loss of compositionality is a widely-spread linguistic phenomenon and a direct derivation of compositional meaning from frequently used expressions can rarely be justified in non-technical contexts of language use. Contrary to the traditional view that non-compositionality is limited to a narrow set of semantically opaque idioms, it is now increasingly accepted that the frequent reuse of multiword or multimorphemic linguistic structures regularly leads to their loss of compositionality (i.e. idiomatisation), cognitive entrenchment (Langacker 1987, 2008) and institutionalisation (the development of a stereotyped meaning of a composite phrase). Therefore, in the discussion below, we consider the distinction between the formulaic and propositional (literal) use of recurrent temporal expressions such as *half an hour* as an important factor behind their distribution[2].

Propositionality and formulaicity need not be statically assigned to an expression, since even the most fossilised idioms may undergo decomposition in phraseological puns. Rather than being a binary feature, the formulaicity of various expressions can be placed on a continuum. Also, the propositional meaning of quantifying expressions, including time-quantifying expressions, can be explicitly restored by means of dedicated lexical devices. In the following example, the adverb *exactly* is used as an explicit marker of propositionality, which partly inhibits the activation of the formulaic status of *half (an) hour* as a technically non-obliging approximation of the period of 1800 seconds:

- *Almost **exactly half an hour** later, Rory was sitting cross-legged on Candy's floor...* [BNC JY5].

[2] The formulaic status of *half an hour* is additionally confirmed by the 14 occurrences of the phrase *half hour* found in the BNC data, which can be considered as a reduced derivative of *half an hour*. Form reduction is a strong diagnostic feature of idiomaticity.

In the following microscopic analysis of the corpus material, we make a systematic distinction between the formulaic and propositional use of time expressions as an important factor explaining their choice.

4.2.2 Construal type and propositionality

English

half+minute – fractional as near-formulaic

The analysed BNC samples instantiating fractional construal at the seconds/minute resolution level are indicative of a tendency towards approximation. In the sample below, for instance, the quantification statement need not be taken literally. One could easily imagine the speaker in actuality intends to report that it takes her 36 or 41 seconds to wake up. To put it differently, even if the speaker's "waking-up" time was systematically measured and the mean values were to equal a number different from the exact equivalent of "half a minute" reported in the utterance, the addressee would still be unlikely to take the utterance to be flawed or infelicitous. In that sense, the numerosity can be treated as closer to the formulaic than the literal pole whereby "half a minute" will be taken to mean "a short while" rather than the exact equivalent of "30 seconds" or 1/120 of an hour.

- If I'm in bed, it might take me half a minute to wake up. [BNC H8M]

A similar case can be observed in the sample below where the addressee could well survive for longer than literally stated by the fireman:

- You'd choke to death in half a minute, said the fireman. [BNC H9D]

Likewise, in the following instances the fractional construal is more about giving the receptor a general idea about the scale of the speaker's estimations or impressions than an exact numerical value:

- She had thought he was asleep, realising that he wasn't only when she felt him tense under the light touch of her fingers, but as he neither moved away nor said a word, she let them remain there, resting lightly against him, the contact lax and undemanding. After half a minute, however, the tenderness still engulfing her compelled her to move closer. [BNC H9L]

- He eagle-eyed the cross bunkers, waggled a few times, opened his shoulders and — wham! The ball seemed to be in the air for half a minute. From behind the tee had come a cheer which changed into a gasp. [BNC HTJ]

The cognitive mechanism whereby the fractional construal is conducive to approximation can be corroborated by co-textual evidence. In the example that follows, the positioning of the utterance on the literal-formulaic cline can be ascertained through

reference to a preceding fragment of the text and it becomes clear that "half a minute" here stands for what technically amounts to 32 seconds.

- Your last pattern was 4 mins 28 secs, so you need an increase on the outbound timing of approximately 15 seconds. That is, you were half a minute short of 5 minutes on your last pattern so divide that time between your out and inbound legs. Similarly if the previous pattern was longer than required, reduce the outbound time by half the error. [BNC G3K]

30 seconds – cumulative as near-propositional

In turn, the cumulative construal will often be used to represent a precise quantification:

- Neary won on the referee's intervention after two minutes 30 seconds of the third round with Barker slumped, defenceless, in a neutral corner. [BNC K97]

- At the world's main airports a plane arrives or departs every 30 seconds. [BNC AJU]

- Fakrid shouted. Order all stations to open fire in thirty seconds. We'll blast the wretched parasites half way across the universe! [BNC FR0]

The interpretation we retrieve here will be very close to the literal pole even though there is little *stricte* linguistic evidence that guides us to do so. If we take the last example above, it is the broadly understood situational context – in this case warfare – and our background assumptions, about how similar scenarios develop, how their participants act and what consequences certain actions can be expected to bring, that make us take "thirty seconds" at face value. We know, for instance, that even a minor lack of synchrony between shooters will be consequential and therefore precision is a priority. In other words, we are in a way able to read the mind of the speaker – viz. make assumptions about the speaker's mental state given the communicative goal we believe he wishes to achieve.

Polish

pół minuty – fractional as near-formulaic

Consistently with the pattern identified for English data, in Polish the fractional construal is commonly employed to construct temporal magnitudes as non-literal:

- Pensja jest za pracę non stop. Bez pół minuty przerwy na dobę. Bez żadnego urlopu. [NCP Polityka]
  [The salary is for working non-stop. With no half a minute break in 24h. With no holiday.]

- Mock zaczął analizować informacje o Knüferze pod innym kątem. Pół minuty rozmowy wystarczyło, nie musiał o nic więcej pytać. [NCP Koniec świata w Breslau]
  [Mock started analysing the information on Knüfer from another angle. Half a minute of conversation was enough, he didn't need to ask about anything else.]

- Kto mnie okradł? Widziałaś? (…) Widziałam, jak trzech mężczyzn i jakaś kobieta kręcili się koło pana. (…) A potem tamci pana szturchali z lewej, a ona z prawej włożyła rękę do kieszeni i w mig wszyscy się rozbiegli. Nie ma pół minuty, oni niedaleko być muszą!" Czyż trzeba dodawać, że pościg okazał się bezowocny? [NCP Szemrane towarzystwo niegdysiejszej Warszawy]
  [Who robbed me? Did you see? (...) I saw three men and some woman around you. (...) And then those men nudged you from the left, and from the right she put her hand in your pocket and they scattered in a twinkling. There is no half a minute (to waste), they cannot be far!" Do I have to add that the pursuit was fruitless?]

30 sekund – cumulative as near-propositional

As was the case in English, time is constructed cumulatively when precision is critical[3]:

- EOS 300D ma szeroki zakres czasów otwarcia migawki od 1/4000 do 30 sekund, czasy dowolnie długie oraz bardzo dobry czas synchronizacji błysku 1/200 s. [NCP Enter nr 2] [1]
  [EOS 300D has a wide range of shutter speed options from 1/4000 to 30 seconds, the speed can be as low as needed and (there is) very good flash synchronisation speed (of) 1/200 s.]

In the Polish data an interesting subset of examples comes from parliamentary debates. In the samples below the cumulative construal is used to designate literal values, for example when regulations are quoted, or when used as admonitions directed at speakers who exceed allotted time. The postulated stress on precision in the uses of cumulative construals is again confirmed – if in a somewhat jocular remark – by an MP in the final excerpt.

- Poszczególne dodatkowe pytania nie mogą trwać dłużej niż 30 sekund, a łączna uzupełniająca odpowiedź nie może trwać dłużej niż 5 minut. [NCP Sprawozdanie stenograficzne z obrad Sejmu RP]
  [Individual additional questions cannot exceed 30 seconds and the additional answer cannot exceed 5 minutes in total.]

- Proszę państwa, mam prośbę do posłów zadających pytania. Zadanie pytania nie powinno trwać dłużej niż 30 sekund. Będę zmuszona przerywać. [NCP Sprawozdanie stenograficzne z obrad Sejmu RP]
  [Ladies and gentleman, I have a request for the MPs who ask questions. A question should not exceed 30 seconds. I will be forced to interrupt.]

- Pan senator Kruszewski w jakim trybie? Panie Marszałku, ja zająłem tylko trzydzieści sekund, a więc mam jeszcze trzydzieści. Ja mam szwajcarski stoper. [NCP Biuro Administracyjne Kancelarii Senatu Rzeczypospolitej Polskiej]
  [Senator Kruszewski in what capacity? Mr. Speaker, I took up only thirty seconds, so I still have thirty. I have a Swiss stopwatch.]

[3] We also see co-text as a conditioning factor. In the sample below "30 sekund" is congruous with other values given in the camera specification. In fact, the interconnectedness of units is visible with no unit being provided for "1/4000" and "sekund" after "30" referring to both numerical values.

English

As can be seen in the samples below, fractional construals of time at a more schematic level of discretisation tend to be employed to give a rough indication of the temporal scale rather than an accuracy-centred account:

half+hour – fractional as near-formulaic

- But, after half an hour prowling round the kitchen, the dog — Rudy — came over to me. [BNC A17]
- He lunched with the police commissioner at a fish restaurant in Torch Bay. After lunch he spent half an hour with McGowan in an outdoor café by the river. [BNC C86]
- She hates parks; it takes half an hour to get there from the flats and then the kids are put inside one lot of railings like some kind of animals and you walk up and down inside another lot and watch them. [BNC BP8]

Analogously to the more fine-grained stratum of temporal quantification, cumulative construals are employed in contexts where precision is paramount:

30 minutes – cumulative as near-propositional

- Cook for 30 minutes, then turn ribs and coat in the sauce again. [BNC A70]
- Cover with foil and bake for 30 minutes in a preheated oven, Gas Mark 6 200C/400F. [BNC BPG]
- I eat around 2000 to 2500 calories per day, have a sedentary job and my weekly exercise schedule is as follows two x 30 minutes, one x 6 miles, two x 30 minutes weight training. [BNC AR7]

Polish

The function of the fractional-cumulative alternation in the Polish data at the minutes/hour resolution level is consistent with what we observe at the more fine-grained level of temporal categorisation (seconds/minute) in Polish as well as cross-linguistically.

pół godziny – fractional as near-formulaic

- Telefony z Warszawy. Do mnie. A ten to się nadziwić nie potrafił, bo mówi, że to drogie i on by sobie na to nie mógł pozwolić. Tak codziennie wydzwaniać za granicę i pół godziny trajkotać. To, on powiada, to przecież majątek. [NCP Wolna Trybuna]
  [A phone call from Warsaw. For me. And he couldn't stop wondering at this because he said it was expensive and he wouldn't be able to afford it. To keep making international calls every day and to chatter for half an hour. It is a fortune, as he puts it.]

- Ona siedziała na podłodze i popisując się wymyślnymi minami paliła papierosa. Lubił, kiedy usiłowała zrobić na nim wrażenie. Pół godziny później pożegnali się i zeszła do samochodu. Frik został sam. [NCP Pierwszy milion…]
  [She was sitting on the floor and smoked a cigarette while making fanciful faces. He liked it when she made an effort to impress him. Half an hour later they said goodbye to each other and she went down to her car. Frik was alone.]

30 minut – cumulative as near-propositional

- Obie drużyny zagrały bardzo słabo w obronie. Po 30 minutach było już 93:87 dla Śląska. [NCP Gazeta Wyborcza]
  [Both the teams played very badly in defence. After 30 minutes Śląsk already led 93:87.]

- abonament trzeba zapłacić aż 49,40 zł, ale operator oferuje za to 30 minut darmowych rozmów [NCP Express Ilustrowany]
  [the subscription is as high as 49,40 zł but the service provider gives you 30 minutes of free calls for this]

5. Conclusions

In this paper we have drawn a distinction between two construals of time found in naturally-occurring English and Polish data: fractional and cumulative. Through corpus analysis we identified distribution patterns of those construals across granularity levels and languages. A crucial observation we arrived at in the course of quantitative analysis is that there is a clear preference for either of the two construal types. We have outlined and exemplified one of the viable explanatory hypotheses, which is that as the user chooses to construe temporal magnitudes fractionally or cumulatively, he or she adjusts the default degree of propositionality in the meanings that the addressee is prompted to arrive at. We have also noted that the propositionality of time-quantifying expressions can be explicitly marked by special lexical devices as in ***exactly*** *half an hour*. Vitally, the category of propositionality is radial, with some instances of temporal construals being more decidedly propositional, and others taking a position farther from propositionality, nearing the formulaic end of the continuum.

References

Alverson, Hoyt 1994. Semantics and experience: Universal metaphors of time in English, Mandarin, Hindi, and Sesotho. Baltimore: Johns Hopkins University Press.

Casasanto, Daniel & Lera Boroditsky. 2008. Time in the mind: Using space to think about time, Cognition 106, 579–593.

Clark, Herbert H. 1973. Space, time, semantics and the child, In T. E. Moore (Ed.), Cognitive development and the acquisition of language. New York: Academic Press, 27–63.

Dehaene, Stanislas & Jacques Mehler 1992. Cross-linguistic regularities in the frequency of number words, Cognition, 43: 1–29.

Davidson, Donald 1967. Truth and meaning, Synthese 17(3), 304–323.

Evans, Vyvyan 2004. The structure of time. Amsterdam and Philadelphia: John Benjamins.
Evans, Vyvyan 2013. Temporal frames of reference, Cognitive Linguistics 24(3), 393–435.
Evans, Vyvyan & Melanie Green 2006. Cognitive Linguistics: An Introduction. Mahwah, NJ and Edinburgh: Lawrence Erlbaum Associates/Edinburgh University Press.
Everett, Caleb & Madora, Keren 2012. Quantity recognition among speakers of an anumeric language, Cognitive Science 36: 1, 130–141.
Everett, Caleb 2013. Linguistic relativity and numeric cognition: New light on a prominent test case, Proceedings of the 37th Annual Meeting of the Berkeley Linguistics Society, 91–103
Geeraerts Dirk & Hubert Cuyckens 2007. (eds.) The Oxford Handbook of Cognitive Linguistics. Oxford: Oxford University Press.
Geeraerts, Dirk 2006. (ed.) Cognitive Linguistics: Basic Readings. Berlin and New York: Mouton de Gruyter.
Gelman, Rochel & Gallistel, Randy C. 1978. The Child's Understanding of Number. Cambridge, MA. Harvard University Press.
Gruber, Jeffrey 1965. Studies in lexical relations. Cambridge: MIT.
Haspelmath, Martin 1997. From space to time: Temporal adverbials in the world's languages. Munich and Newcastle: Lincom Europa.
Lakoff, George, & Johnson, Mark 1980. Metaphors we live by. Chicago: University of Chicago Press.
Langacker, Ronald W. 1987. Foundations of cognitive grammar. Vol. 1, Theoretical prerequisites. Stanford, CA: Stanford University Press.
Langacker, Ronald W. 2008. Cognitive Grammar: A Basic Introduction. New York: Oxford University Press.
Pęzik, Piotr 2012. Wyszukiwarka PELCRA dla danych NKJP. In Adam Przepiórkowski, Mirosław Bańko, Rafał Górski, and Barbara Lewandowska-Tomaszczyk (eds.) *Narodowy Korpus Języka Polskiego*, Warszawa: Wydawnictwo Naukowe PWN, 253–279.
Pica, Pierre, Lemer, Cathy, Izard, Véronique & Stanislas, Dehaene 2004. Exact and approximate arithmetic in an Amazonian indigene group. Science 306, 499–503.
Sarnecka, Barbara W. & Carey, Susan 2008. How counting represents number: What children must learn and when they learn it, Cognition, 108, 662–667.
Szabó, Zoltán G. 2013. Compositionality, In Edward N. Zalta (ed.) The Stanford Encyclopedia of Philosophy.
Werning, Markus 2012. Non-Symbolic Compositional Representation and Its Neuronal Foundations: Towards an Emulative Semantics, In Markus Werning, Wolfram Hinzen, and Edouard Machery (eds.) The Oxford Handbook of Compositionality, Oxford Handbooks in Linguistics. Oxford New York, NY: Oxford University Press, 633–724.

WHAT IS THE 'FUTURE' OF GREEK? TOWARDS A PRAGMATIC ANALYSIS

MICHAEL CHIOU
Athens Metropolitan College
mchiou1234@gmail.com

Abstract
The paper investigates the problems related to futurity and modality in modern Greek. The discussion of Greek temporal future expressions is conducted with reference to relevant literature from the areas of English linguistics, cognitive studies and pragmatics. The focus is on the status of future-oriented expressions and the question whether they are primarily epistemic in nature, whether they are tense-based, or modality-based. It is argued that the future tense in Greek has a modal semantic base conveying epistemic modality and that the preferred future prospective reading is a pragmatic development of the semantic modal base. The author further suggests that the future reading is a kind of presumptive meaning which follows from the neo-Gricean Principle of Informativeness, known as the I-principle (Levinson 2000) being a generalised interpretation which does not depend on contextual information.

Keywords: pragmatics, neo-Gricean pragmatics, modality, tense, Greek

1. Setting the scene

It is well known that futurity and modality are interrelated in such a way across languages that there is an ongoing debate concerning the status of future tenses as markers of tense or of modality (e.g. Comrie 1985, Enç 1996, Sarkar 1998, Ludlow 1999, Copley 2009, Condoravdi 2002, Squartini 2004, Jaszczolt 2006, Kissine 2008, Mari 2009, 2010 Giannakidou & Mari 2012, 2013, 2014). Modern Greek is not different in this respect and therefore the question whether the so-called future tense has a temporal or a modal basis is still under discussion (see Condoravdi 2002, Giannakidou 2009, 2012, Giannakidou & Mari 2012, 2013, 2014, Tsangalidis 1999 among others).

Modern Greek forms a periphrastic future tense by employing the particle *tha* (*θα=will*), usually referred to as the future marker (see Philippaki-Warburton 1994, Rivero 1994 among others) followed by the imperfective non-past or the perfective non-past verb forms[1] (henceforth INP and PNP respectively). Nevertheless, as it will be shown, only the combination of *tha* and the PNP gives the 'pure' future interpretation, while *tha* combined with the INP systematically conveys epistemic non-future modal readings.

[1] In traditional grammar the combination of *tha* with the PNP is termed 'simple future' while the combination with the INP is termed 'future continuous'.

In recent work (cf. Giannakidou 2009, 2012, Giannakidou & Mari 2012, 2013, 2014 and Tsangalidis 1999), it has been argued that the particle *tha* is not a typical future tense marker. In particular, Giannakidou & Mari (2012, 2013, 2014) propose, among other things, that the particle *tha* is an epistemic modal operator with a present (*now*) perspective. Moreover, the Greek PNP verb form cannot function as an independent tense form (Holton et al. 1997) and therefore it is treated as a non-deictic time marker. If this line of analysis is correct, and there is nothing in the semantics of *tha* constructions that functions as a future tense marker, we need to account for the future prospective reading conveyed by the combination of *tha* and the PNP.

Based on this, I argue that the future tense in Greek has a modal semantic base conveying epistemic modality, in the spirit of Giannakidou (2009, 2012) and Giannakidou & Mari (2012, 2013, 2014), and that the preferred future prospective reading is a pragmatic development of the semantic modal base. It can further be proposed that the future prospective reading is a kind of presumptive meaning which follows from the principles of language use and, more precisely, from the neo-Gricean Principle of Informativeness, known as the I-principle (Levinson 2000), since it is not part of 'what is said,' but it is a generalised interpretation which does not depend on contextual information.

The structure of the paper is as follows. In section 2, I focus on the typology and the properties of future constructions. In section 3, I outline the current literature focusing on the study of future constructions and future-time reference; in section 4, I present the neo-Gricean pragmatics theory of communication focusing mainly on the I-principle and, finally, in section 5, I further develop the pragmatic analysis of future-time reference in Modern Greek.

2. Facts on *tha*-constructions: Epistemic and future uses

2.1 Tense, aspect and verb morphology

In Modern Greek the verb form is inflected for the grammatical categories of tense and aspect. Following this, there is a morphological distinction between past and non-past, in terms of tense, and perfective and imperfective in terms of aspect. The importance of aspect in Modern Greek is emphasised by the fact that all tenses, moods and voices are marked for either the perfective or the imperfective aspect (Joseph 1983, Holton et al. 1997, Tsangalidis 1999). The imperfective aspect is used to mark a progressive, habitual or repeated action, whereas the perfective aspect marks an action which is perceived as a completed whole (Xidopoulos 1996, Holton et al. 1997).

The combinations of tense and aspect give us four morphologically distinct verb forms which are exemplified in the following table (Mackridge 1985, Holton et al. 1997):

(1) *graf -o* (INP)	(2) * *grap -s -o* (PNP)
write IMP-1SG.NON-PAST	write-PERF.1SG.NON-PAST
'I am writing (right now).'	(no exact English equivalent)
'I write (generally).'	

(3) *e-graf -a* (IP)
PAST-write-IMP.1SG.PAST
'I used to write.'
'I was writing.'

(4) *e-grap -s -a* (PP)
PAST-write-PERF.1SG.PAST
'I wrote.'

There are two past forms, namely, the imperfective past (IP) in (3) and the perfective past (PP) in (4), and two non-past forms, namely, the imperfective non-past (henceforth INP) in (1) and the perfective non-past (henceforth PNP) in (2). Traditional grammar treats the verb form in (1) as a present tense form, yet Giannakidou (2009) argues that non-past verb forms are not simply equivalent to present. The verb form in (2), i.e. the PNP, is not possible without the presence of certain particles (such as *na*, *as*, *tha* and *an*) as illustrated in examples (5) - (7) below. This is the reason why it is referred to as the 'dependent' form (Holton et al. 1997: 220).

(5) *O Nikos grapsi ena grama
the Nikos write PNP a letter
'Nikos write a letter.'

(6) **As** grapsi o Nikos ena grama
Let write PNP the Nikos a letter
'Let Nikos write a letter.'

(7) O Nikos **tha** grapsi ena grama
the Nikos will write PNP a letter
'Nikos will write a letter.'

In this study we are going to focus on the PNP and INP verb forms since these two forms are used in the formation of the future constructions.

2.2 The typology of future tense and *tha*-constructions

As it is obvious from the discussion so far, in Modern Greek, future tense is not morphologically marked in the verb form. According to traditional grammar, future tense in Modern Greek is formed with the particle *tha* followed by the PNP (as in 8) or INP verb forms (as in 9).

(8) O Nikos tha petaksi gia to Londino.
the Nikos will fly PNP for the London
'Nikos will fly to London.'

(9) O Nikos tha petai gia to Londino avrio
the Nikos will fly INP for the London tomorrow
'Nikos will be flying to London tomorrow.'

The combination of *thα* with PNP, as in (8), is used to "express an action which will take place and be completed at a future point in time" (Holton et al. 1997: 227). This type of future is dubbed in traditional terms as the 'simple future'. Alternatively, when *thα* is

combined with the INP, as in (9), "it describes an action which will be taking place in the future either as a habitual event, or as a continuous, progressive one" (Holton et al. 1997: 226).

It has to be noted though that in examples like (9), future-time reference seems to arise from the use of the time adverbial '*avrio'* (Eng. *tomorrow*). If the adverb is removed, and there is no specific context, the future interpretation does not survive.

(10) O Nikos tha petai gia to Londino
the Nikos will fly INP for the London
'Nikos will be flying to London.' (now)

In such cases, combinations of *tha* with INP are most frequently interpreted as epistemic present (Giannakidou 2012), expressing a highly strong possibility and an inference about the state of affairs at the utterance time based on the evidence that the speaker has. In such contexts, *tha* constructions do not have the force of a pure future tense but they can be glossed as 'most probably/possibly' making reference to the utterance time. Giannakidou (2012) and Giannakidou & Mari (2012) also argue that *tha*, when combined with INP, exhibits evidential behaviour and it is very similar to the evidential modal '*prepi*' (Eng. *must*). In this sense, *tha* with INP is co-operatively used when the speaker lacks direct evidence about the relevant situation. For instance, in example (10) by uttering '*o Nikos tha petai*' (Nikos will be flying), the speaker communicates that he does not have direct evidence with regard to the truth of the proposition and that he is just making an inference based on indirect evidence.

This epistemic present reading can be further reinforced by the use of high probability adverbs such as *malon* (Eng. *probably*) (cf. Holton et al. 1997, Giannakidou & Mari 2012).

(11) O Nikos malon tha petai gia to Londino
the Nikos probably will fly INP for the London
'Nikos will be probably flying to London.' (now)

Nevertheless, the epistemic present interpretation is not the preferred one when the verb is in the 1st or the 2nd person. Consider the examples:

(12) ?Tha petao gia to Londino tora
Will fly INP, 1SIN for the London now
?'I will be flying to London now.'

(13) ?Tha petas gia to Londino tora
Will fly INP, 2SIN for the London now
?'You will be flying to London now.'

(14) Tha petas gia to Londino avrio
Will fly INP, 2SIN for the London tomorrow
'You will be flying to London tomorrow.'

The addition of an adverb referring to the utterance time such as '*tora'* (Eng. *now*) renders examples (12) and (13) odd, if not unacceptable. Yet, there is no problem at all with the future time adverb '*avrio'* (Eng. *tomorrow*) as in (14). The fact that the 1st and

the 2nd person are more likely to express futurity than the third person, which favours epistemic present readings, is also observed in Tsangalidis (1999) following Heine (1995).

According to traditional grammars the future tense or simple future, as it is usually dubbed, is restricted to the combination of *tha* followed by the PNP.

(15) O Nikos tha petksi gia to Londino
The Nikos will fly PNP for the London
'Nikos will fly to London.' (in the future)

The preferred future interpretation of *tha* with PNP combinations is not determined by the presence or absence of an adverb of time as it is the case with *tha* combined with the INP. The time adverbial just anchors the event described by the verb at a specific point in the future.

(16) O Nikos tha petksi gia to Londino avrio/ se tris meres...
The Nikos will fly PNP for the London tomorrow/in three days...
'Nikos will fly to London tomorrow/in three days...'

The only case in which *tha* and PNP combination does not convey a temporal (future) interpretation is when it is used to describe habitual timeless actions or to indicate obligation. Consider the examples (17) and (18) respectively (Holton et al. 1997):

(17) Kathe proi tha sikothi, tha pji to kafedaki tu, tha djavasi tin efimerida tu ke kata tis 8.30 tha figi gia to grafio tu
'Every morning he will get up, drink his coffee, read his newspaper and at approximately 8.30 he will leave for the office.'

(18) Oxi tha mu to epistrepsis afto to grama amesos!
'No, you will [must] give this letter back to me immediately.'

In examples such as (17), adverbs of time such as 'tora' (Eng. *now*), 'avrio' (Eng. *tomorrow*) which are always compatible with *tha* and PNP constructions are not acceptable, which shows that a temporal reading is not intended in such contexts.

3. Future in Modern Greek: an overview of relevant literature

3.1 Particle *tha* as a future gram-type

Within the framework of a comparative study between *will* constructions in English and *tha* constructions in Modern Greek, by means of which future-time reference is expressed, Tsangalidis (1999) proposes a theory which permits future to be defined independently of the core categories of tense and modality.

More precisely, the analysis in Tsangalidis (1999) is built upon the notion of "grammatical morpheme" or "gram-type" introduced in Dahl (1985) and Bybee & Dahl

(1989). The term "gram-type" refers to cross-linguistic categories which are instantiated in each language by a specific type of "gram". "Gram" in its turn refers to the notion of grammatical morpheme. As Bybee et al. (1994: 2) explain, "grammatical morphemes are closed-class elements whose class membership is determined by some unique grammatical behaviour, such as position of occurrence, co-occurrence restrictions, or other distinctive interactions with other linguistic elements". Moreover, these grammatical morphemes or 'grams' may appear in various types in terms of their form, ranging from affixes to complex constructions and they are "identifiable by their semantic foci" Bybee & Dahl (1989: 52). In this sense the notion of the "gram-type" cuts across the traditional categories such as tense, aspect, or mood.

It is argued that *tha* is not a typical future tense marker, but it is not a modal operator either. Consequently, according to Tsangalidis (1999), *tha* is best described as an instance of the 'future gram-type'. The semantic content of 'future gram-types' indicates that "the speaker predicts a situation will occur subsequent to the speech event" (Bybee & Dahl 1989: 55). As a result, the category of the 'future' can be approached in an alternative way, rendering thus irrelevant the debate over its temporal or modal status. As Tsangalidis (1999: 255) observes, "future-grams [...] are seen as autonomous entities [...] and their definition in terms of polysemic associations of diachronically related senses does not exclude their use as markers of temporal, aspectual and modal notions".

The main proposal in Tsangalidis (1999) is that the particle *tha* qualifies neither as a prototypical modal, nor as a pure future tense marker. Accordingly, a future-gram type status of *tha* is proposed, which allows for a description independent of membership in either a temporal or a modal category. Following Tsangalidis (1999: xi), this line of analysis has "advantages over any attempt to decide on the centrality of either tense or modality in the semantics of future markers or any attempt to recognize distinct underlying elements which only happen to be homophonous in these languages."

Concerning the interpretation of *tha* constructions, Tsangalidis (1999) concludes that: a) *tha* combined with perfective past (PP) gives pure epistemic past readings; b) *tha* combined with the PNP gives pure non-epistemic future readings; and c) all other combinations are open to both temporal and modal readings. In addition, it is also put forward that "the default interpretation (of *tha*) is dependent on the form of the lexical verb – and crucially on its aspectual and temporal characteristics" (Tsangalidis 1999: 253).

Beginning with the dependent form, Tsangalidis (1999) assumes the now widely accepted view that it is a typical PNP form and not a subjunctive form[2]. What is more, following the literature on aspect[3] according to which perfectives when combined with non-past generate a contradiction (since perfective events cannot occur at the same time with perfective speech events and therefore, they cannot practically refer to the utterance time), Tsangalidis (1999) explains why the PNP can only receive pure future or habitual interpretations. Finally, the fact that PNP forms are non-specific and non-past can account for their dependent status (Tsangalidis 1999).

Turning to *tha* with INP constructions, Tsangalidis (1999) supports that the epistemic present reading should not be considered the default one since epistemically modalised

[2] The view that 'dependent' or '*γrapso'* forms are not subjunctives is put forward in Veloudis & Philippaki-Warburton (1983) and Philippaki-Warburton (1992).

[3] Cf. e.g. Dahl (1985), Comrie (1976, 1985) and Smith (1991).

statements about the speaker and the addressee do not normally hold. As a result, it is proposed that the combination of *tha* with INP is underspecified for tense which means that *tha* with INP "does not force a future time reference as such – but rather 'prediction'" (Tsangalidis 1999: 212). As it is explained, this prediction normally refers to the future (hence the potential future time reference), however, in certain contexts (such as the case of statives, progressives and imperfectives) prediction can equally refer to the present; in these cases the contribution of the particle *tha* is epistemic modality rather than futurity. What follows then is an ambiguity between future and epistemic present time interpretations which, according to Tsangalidis (1999), can be best accounted for by the analysis of *tha* as a 'future gram-type'.

3.2 The Greek future particle as an epistemic modal

In a more recent study, Giannakidou (2009, 2012) and Giannakidou & Mari (2012) put forward an alternative analysis of the particle *tha* and future-time reference in Modern Greek. The main proposal is that the particle *tha* is not a future tense marker but a modality operator. This is proposal is based on the non-future readings of *tha* when combined mainly with the INP and the past forms but it is also related to the interaction of *tha* with modal adverbials (Giannakidou 2012).

To begin with, it is argued that in cases where *tha* is combined with the INP and the PP there is a pure epistemic reading. Consider the examples below (form Giannakidou 2012):

(19) i Ariadni tha kimate tora
The Ariadne will sleep INP, 3SIN now
'Ariadne must be sleeping now.'

(20) i Ariadni tha ine giatros
The Ariadne will be 3SIN doctor
'Ariadne must be a doctor.'

In the examples above, the preferred interpretation is epistemic and inferential. The speaker expresses a kind of inferential assessment about what *Ariadne* might be or might be doing based on the knowledge and the information that he has. As Giannakidou (2012: 51) notes, *tha* with INP constructions also have "sensitivity to the nature of evidence: if I have direct evidence to the truth of the sentence, *tha* is unacceptable".

Furthermore, it is observed that *tha* co-occurs with adverbs that convey very strong possibility and necessity as it happens with the necessity modal '*prepi'* (must) which can also combine with *tha* as it is illustrated below:

(21) i Ariadne {malon/#isos} tha prepi na efije
The Ariadne probably will must SUBJ left
'Ariadne probably must have left.'

(22) i Ariadne (tha) prepi na efije
The Ariadne will must SUBJ left

'Ariadne probably must have left.'

Giannakidou (2012: 52) claims that "given the co-compatibility of *tha* and *prepi*, we must conclude that they express matching modalities".

Turning now to the combination of *tha* with the PNP, it is agreed that these constructions convey the future interpretation yet as Giannakidou (2012) suggests, they are not devoid of the epistemic reading especially when a time adverbial is not present. To further illustrate this point the following example is given:

(23) Context: It's late, the weather is bad, and we know Ariadne is travelling. You worry, and I want to reassure you and say:

Min anisixis. i Ariadne tha ftasi (epistemic)
Not worry IMPER, 2SIN. the Ariadne will arrive PNP, 3SIN
'Don't worry. Ariadne will arrive.'

In such contexts, both interlocutors are not particularly interested in the time of the event (temporal reading), instead they are interested in the degree of certainty of the occurrence of the event (modal reading). Giannakidou (2012) names interpretations related to examples such as (23) epistemic future since on the one hand there is a clear forward shifting of the event, but on the other there is also an epistemic reading.

The absence of future-time reference is also possible in generic, atemporal sentences such as the one already discussed in (17), quoted below as (24):

(24) Kathe proi **tha sikothi**, **tha pji** to kafedaki tu, **tha djavasi** tin efimerida tu ke kata tis 8.30 **tha figi** gia to grafio tu
'Every morning he will get up, drink his coffee, read his newspaper and at approximately 8.30 he will leave for the office.'

Here again there is no time adverbial in the utterance. It is therefore argued that in *tha* with PNP combinations the presence of time adverbials determines in a great extent whether the epistemic reading will surface or not.

The claim that *tha* is not a future tense marker but that it is a modality operator with present perspective is thoroughly discussed in a study focusing on the dependency of the PNP form. Giannakidou (2009) observes that 'non-past' forms in Modern Greek are not equivalent to a present. More specifically, the INP is not a present tense but it is "used for habitual and generic statements, as well as to denote progressive and ongoing events" (Giannakidou 2009: 1896). Now, in cases where the imperfective is used for the progressive, it denotes the function PROG. By contrast, when used generically, the imperfective contributes GEN. The output is an interval during which generic quantification takes place (Giannakidou 2009). It is therefore assumed that the INP does not make reference to a specific time.

The PNP cannot function as a present tense either. It is suggested (Giannakidou 2009, 2012) that the dependent nature of the PNP is attributed to its inability to make reference to the utterance time. As it is proposed, the PNP contains a time interval (t, ∞) whose left boundary t is a non-deictic variable. Following this, non-past in Modern

Greek should have the following semantic representation introduced in Abusch (2004) [4] (Giannakidou 2009: 1899):

(25) [non-past] = λP λt P((*t*, ∞))

In Abusch's (2004) analysis since *t* is a non-deictic variable, it must be bound by *n* (PRES, utterance time) in order to be licensed. In a real present tense this variable receives its *n* 'now' value (referring to the utterance time) from a PRES feature. Nevertheless, "the Greek non-past contains no higher temporal information, that is, no PRES and it will thus require some other element to supply *n*" (Giannakidou 2009: 1899). As a result, the PNP is treated as a temporal polarity item which will need a particular licensing context in order to receive the missing *n* or PRES feature and therefore, to acquire a time value

In the case of the INP, which conveys either a generic or a progressive interpretation, it is the time adverbials that provide the relevant time interval which replaces (*t*, ∞). By way of illustration consider the example (in Giannakidou 2009):

(26) O Jianis grafi sixna
'John writes often.'
OFTEN*t* [*t*∈ C∧ *t* ⊆ *i*: write (j, *t*) ∧ *i* = (*t*, ∞)]

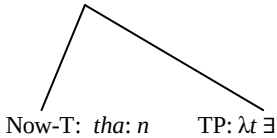
As Giannakidou (2009: 1900) suggests, "[i]n this sense, the problematic interval (*t*, ∞) is replaced by the generic interval *i*... and the result is a statement with no direct reference to the utterance time". In the same fashion, adverbials or temporal expressions like *tora* (Eng. *now*) or *olo to proi* (Eng. *all morning*) provide a time interval which binds the variable *t* giving thus the progressive readings.

The explanation described above does not yet hold for the PNP. Consider example (27):

(27) *O Jianis γrapsi PNP sixna / tora / olo to proi
'John writes often / now / all morning.'

The addition of adverbials or temporal expressions does not improve the illicit PNP. Therefore, the need for *n* to be introduced still remains. Giannakidou (2009, 2012) suggests that the PNP receives *n* from particles such as *tha*. This motivates the introduction of a Now-TP into the syntactic structure with *tha* being its head (Now-T). This syntactic structure is illustrated in the following example:

(28) Now-TP: ∃e [win (j,e) ∧ e ⊆ (*n*, ∞)]



Now-T: *tha*: *n* TP: λ*t* ∃e [win (j,e) ∧ e ⊆ (*t*, ∞)]
"kerδisi o Janis"

[4] According to Abusch (2004: 39), ''in the substitution operator, *t* is a bound variable that corresponds to the tense argument of *will*. For a top-level occurrence of *will*, the effect is to substitute (*n*, ∞) for *n*.''

It is thus suggested that the particle *tha* semantically functions as the present tense[5] - which is missing from the PNP verb form - and at the same time provides a satisfying explanation for the dependency of the PNP to particles such as *tha*.

Eventually, concerning the future-time interpretation of *tha* constructions Giannakidou (2012) and Giannakidou & Mari (2012) argue that it crucially depends on the time adverbials as well as the (t, ∞) interval which is available in the non-past forms. More accurately, it is put forward the presence of an adverb "provides direct evidence about a time, and this time serves to constrain the temporal space for the location of the eventuality denoted by the VP" (Giannakidou & Mari 2012: 267). Therefore, there is a domain restriction which generates the future reading giving thus the force of a prediction. By contrast, when there is no adverb we can have either an epistemic present or an epistemic future interpretation. In the first case, "the time of the evaluation of the VP coincides with t_u (utterance time). On the epistemic future reading, the time of the evaluation of the VP is forward shifted [...] possibly because of the non-past which makes available the interval (t, ∞) anyway" (Giannakidou & Mari 2012: 268).

To sum up, it is agreed that *tha* is not a pure future tense marker. In contrast to Tsangalidis (1999), who suggests that *tha* does not qualify as a modal either, but that it is an autonomous entity (a future-gram), Giannakidou (2012) and Giannakidou & Mari (2012, 2013 and 2014) argue that *tha* is an epistemic modal operator which is temporally anchored at the utterance time. Moreover, evidence appears to play an important role in the final interpretation of *tha* sentences according to the analyses presented. Evidence, either concerning the temporality of the event (in the form of an adverb of time) or the eventuality itself, is what narrows down the temporal domain and triggers future readings.

4. Futurity communicated: Towards a pragmatic analysis

In the accounts presented here the future readings of *tha* sentences arise as a result of their semantic meaning along with the interaction of the immediate linguistic context (adverbs of time, etc.).

Nevertheless, a closer look at the data shows that the presence of a *tha* construction is neither a necessary, nor a sufficient condition for future-time reference[6]. This can be interpreted in two ways; on the one hand, as has already been shown, *tha* constructions can convey purely epistemic readings, for instance, when *tha* is combined with the INP as in (29) or the PP.

(29) i Ariadni tha kimate tora
The Ariadne will sleep INP, 3SIN now
'Ariadne must be sleeping now.'

What is more, even *tha* with PNP, which is considered the typical 'future' construction, does not convey a temporal (future) interpretation in generic contexts.

[5] Apart from *tha*, the so-called future particle, the semantic function of the present tense is also given by the subjunctive *na*, the optative *as* and conditional *an* (Giannakidou 2009).

[6] Comrie (1985) argues the same for the use of the auxiliary *will* in English.

(30) Kathe fora pu tha vreksi PNP o dromos plimirizi
Every time that will rain the street floods
'Every time that rains the street floods.'

On the other hand, future-time reference can also be communicated by other means without the use of the *tha* constructions. Consider the case where the INP verb form (traditionally referred to as present tense) is used to refer to a future event:

(31) To treno anachori stis 10
'The train departs at 10."

In addition, *na* constructions, which typically express subjunctive mood, also usually convey reference to the future.

(32) i Eleni etimazetai na SUBJ pai sto Londino
'Eleni prepares for going to London.'

It becomes evident then that future-time reference is not marked by a particular form. It is not part of the coded linguistic content. On the contrary, as I will propose here, it follows as a conversationally communicated interpretation based on the semantic information of what is coded.

More precisely, I agree that *tha* always contributes an epistemic modal semantic base (in the spirit of Giannakidou (2012) and Giannakidou & Mari (2012)) and I shall argue that: a) the non-past, non-present (i.e. future-time) reading of *tha* with INP arises as a temporal domain restriction due to the presence of direct evidence (such as time adverbials, $1^{st}/2^{nd}$ person), and b) the non-past, non-present reading of *tha* with PNP, arises as a default, i.e. pragmatically enriched and a more informative reading of the modal semantic base, and that it is not influenced by the presence of a time adverbial. A way forward is to suggest that future-time reference in Modern Greek arises as a kind of presumptive meaning[7] related to the I-principle as developed and discussed in Levinson (2000).

4.1 The neo-Gricean I-implicature

In a reductionist variant of the original Gricean theorizing (Grice 1975, 1989), Levinson (1987, 1991, 1995, 2000) proposes three basic heuristics or principles which license default interpretations. These are the I-principle ('say as little as necessary'), the Q-principle ('do not say less than you know') and the M-principle ('Do not use a prolix, obscure or marked expression without reason'). Here, I will focus on the I-principle which is originally defined as follows:

(33)
The I-Principle (Levinson 2000: 114-115)
Speaker's Maxim: The Maxim of Minimization.

[7] The idea that tenses generate implicatures and therefore there is a need for a pragmatic account is not a novel one, cf. Comrie (1985).

> 'Say as little as necessary', i.e. produce the minimal linguistic information sufficient to achieve your communicational ends (bearing the Q-principle in mind).
> Recipient's corollary: The enrichment rule.
> Amplify the informational content of the speaker's utterance, by finding the most specific interpretation, up to what you judge to be the speaker's m-intended point. Specifically:
> (a) Assume that stereotypical relations obtain between referents or events, unless (i) this is inconsistent with what is taken for granted; (ii) the speaker has broken the Maxim of Minimization by choosing a prolix expression.
> (b) Assume the existence of actuality of what a sentence is 'about' if that is consistent with what is taken for granted.
> (c) Avoid interpretations that multiply entities referred to (assume referential parsimony).
> (d) Assume the existence or actuality of what the sentence is about if that is consistent with what is taken for granted.

The central idea behind the I-principle is that the use of a semantically general expression I-implicates a semantically specific interpretation. More accurately, the implicature engendered by the I-principle is one that accords best with the most stereotypical and explanatory expectation given our knowledge about the world. The I-principle covers a variety of inferences such as inference to the stereotype (34) and conjunction buttressing (35) among others (cf Levinson 2000: 117 for more examples).

(34) Paul was waiting for the nurse to give him his medicine
+> Paul was waiting for the *female* nurse to give him his medicine

(35) Paul pressed the button and the lights turned on
+> Paul pressed the button and then the lights turned on
+> Paul pressed the button and therefore the lights turned on

In (34) an I-implicature is triggered by the stereotypically held expectation that a nurse is most of the times a female nurse, while in (35), the use of 'and' can implicate temporal sequence or causal connectedness.

Despite the great variation among I-inferences, they share certain common properties[8]. As mentioned above, I-inferences are inferences to more specific interpretations. Moreover, they are positive in nature. As Levisnon (2000: 119) notes, "the extension of what is implicated is a proper subset of the extension of what is said, the extension being restricted positively". In addition, I-inferences do not refer to something that could have been said but was not said as it is the case with the other neo-Gricean implicatures which are based on scales. The default readings given by the I-principle are inferences from structure and meaning to further presumptive meanings. As Levinson (2000: 22) notes, they are "based not on direct computations about speaker-intention, but rather on general expectations about how language is normally used".

[8] I-inferences also exhibit the typical properties of all non-monotonic inferences, namely, defeasibility, non-detachability, calculability, conventionality and reinforcability.

5. A neo-Gricean account of future-time reference in Modern Greek

Based on the discussion so far, I would like to propose a partial neo-Gricean pragmatics apparatus for the interpretation of future-time reference in Modern Greek, which is spelled out in (36) below:

(36)
A neo-Gricean pragmatic apparatus for the interpretation of future-time reference in Modern Greek.

(a) particle *tha* contributes an epistemic modal semantic base (in the sense of Giannakidou 2012 and Giannakidou & Mari 2012).

(b) Interpretation principle

i. The combination of *tha* with the INP, and in the absence of any particular context, will express an epistemic modal interpretation referring to the utterance time, unless there is direct evidence available (time adverbials, $1^{st}/2^{nd}$ person, physical evidence). In this case, the non-past modal base is temporally restricted to non-past, non-present contributing thus an epistemic future reading.

ii. The combination of *tha* with the PNP will I-implicate a more specific future interpretation.

Armed with this apparatus, let me now return to the original question addressed at the beginning of the paper, a question of how hearers induce future readings of *tha* constructions despite the fact the latter do not have unambiguous future-time reference as part of their semantic, coded, meaning. Let me start from the combinations of *tha* with the INP. Considering the following example:

(37) i Eleni *tha* kimate jafto mi tin paris tilefono
the Eleni will sleep INP so not her call
'Helen will be sleeping, so don't call her.'

In the absence of any specific context, (37) will receive a preferred epistemic present interpretation. Thus the hearer confronted with such an utterance makes an inference about the state of affairs at the utterance time. The epistemic modal reading follows from the proposed evidential nature of *tha* at the semantic level of interpretation (see Giannakidou 2009, Giannakidou & Mari 2012). More accurately, the speaker based on indirect evidence assumes that *Helen* will be sleeping at the utterance time (for instance the speaker may be aware of Helen's habits, plans, etc.).

Consider now the case in which *Helen* is present when the speaker utters (37). In this case, the epistemic present reading is not possible since the speaker has direct evidence (based on physical contact) that *Helen* is not sleeping. As already noted, physical evidence is in fact strong direct evidence possessed by the speaker and thus, the non-past modal base will be temporally restricted (in the spirit of Giannakidou 2012) to non-past, non-present. The epistemic reading remains, but it refers to the future.

Equally, the epistemic present reading is blocked when there is a time adverbial, as in (38) or the subject is in the first or second person, as in (39).

(38) i Eleni *tha* kimate avrio
the Eleni will sleep INP tomorrow.
'Helen will be sleeping tomorrow.'

(39) Epidi *tha* taksidevo den borume na vrethoume.
Because will travel INP, 1ST not can to meet
'Because I will be travelling, we can't meet.'

In (38), the speaker by using the time adverb *avrio* (Eng. *tomorrow*) indicates that he is in possession of some direct evidence about the time of the event. This evidence will serve as a domain restrictor for *tha* shifting its eventuality towards the future (Giannakidou 2009, Giannakidou & Mari 2012). What is more, in example (39), it is obvious that the speaker definitely has direct evidence about himself at any given time. Thus, the speaker cannot make inferences about himself or even about the hearer at the utterance time. As already noted, the fact that the first and the second person are more likely to express futurity than the third person is also observed in Tsangalidis (1999 following Heine 1995). In particular, Heine (1995: 25) notes that "epistemic (present) modality correlates most strongly with third-person and least strongly with first-person." This tendency is compatible with the evidential nature of *tha* constructions.

Epistemic present interpretations do not normally go through in the 1st and the 2nd person contexts. Yet, there are cases in which future-time reference is possible (see Tsangalidis 1999: 212).

(40) *tha* kimame- INP,1ST akoma jafto den katalaveno ti mu les.
'I will still be asleep and that is why I can't understand what you are talking about.'

As Tsangalidis (1999) notes, the epistemic present reading of the 1st and the 2nd person in examples such as (40), although possible, is not the default one, but it always needs a particular context to arise.

Let us now focus on the combination of *tha* with the PNP which is the 'pure' future tense in Modern Greek. At the risk of redundancy, it is important to recall that in terms of temporality *tha* with PNP sentences are used in the majority of cases (apart from the timeless or atemporal constructions examined earlier in the discussion) to denote that the time of the event follows the time of the utterance (futurity) whereas in certain restricted contexts they can also receive a timeless or atemporal interpretation. Nevertheless, *tha* with PNP sentences can never indicate an event overlapping with the time of the utterance despite containing a [–past][9] verb form. Following our apparatus, the default future interpretation of *tha* with PNP constructions is an I-inference. Consequently, sentence (41) will I-implicate (42), (+> stands for 'implicates'):

(41) i Eleni *tha* fiji
The Eleni will leave PNP
'Helen will leave.'

[9] This also shows that in Modern Greek the category [-past], which does not produce reference to the utterance time is distinct from the category [+present], which does.

(42) +> i Eleni den ehi fiji akoma
'Helen hasn't left yet.'

The coded content of (41) can be spelled out as follows: The particle *tha* is a modal operator and semantically contributes *n* (i.e. the utterance time) hence it has a present perspective. The PNP, after receiving *n* from the particle *tha*, denotes an open forward looking interval, namely, (*n*, ∞). Hence, the coded content of *tha* with the PNP is non-past, including thus the utterance time (present) and also giving the possibility of a future reading. Nevertheless, what is actually communicated is the future reading. In other words, at the level of interpretation *tha* with the PNP conveys the non-past, non-present reading '*Helen hasn't left yet*', which is a narrowing down of what is said. This interpretation arises as an I-enriched, more specific, temporal interpretation. The interpretation in (42) is more specific and more informative in the sense that from the non-past the speaker will I-implicate a non-past, non-present (i.e. future) reading.
Turning now to the role of adverbs, as we have seen in *tha* with INP constructions, the presence of an adverb of time which encodes future time forward shifts the eventuality. Nevertheless, this is not the case with *tha* with PNP sentences. The interpretation associated with the use of *tha* with PNP appears to be strong and generalised in the sense that it does not depend on any kind of context (such as time adverbs, etc.). In other words, it is not a one off interpretation based on a particular situation.

(43) i Eleni *tha* fiji avrio
The Eleni will leave PNP tomorrow
'Helen will leave tomorrow.'

+> i Eleni den ehi fiji akoma
'Helen hasn't left yet.'

I would agree therefore with Jaszczolt (2006) that a sentence such as (41) evokes the same sense of futurity with (43), and I would also suggest that they give rise to the same I-implicated future interpretation.

It can be argued that here the role of time adverbs is not to convey future-time reference, but to indicate that the speaker has more evidence about the state of affairs described by the verb. By presenting more evidence about the time the speaker actually minimises the possibility of proposition *p* being a non-possible world. Thus, the evidence provided by the adverb of time weakens the potential epistemic interpretation which is always possible given the modal semantic base of the construction. In this sense, the speaker appears more committed to the truth of the proposition expressed and he intends reference to the future time in the real world without reference to possible worlds (epistemic modal reading).

5.1 Arguments for an I-inference

The future interpretation of *tha* with the PNP, as seen so far, has the hallmarks of an I-inference. Let us recall here a typical case of an I-inference, namely, conjunction buttressing.

(44) Paul pressed the button and the lights turned on
+> Paul pressed the button and then the lights turned on
+> Paul pressed the button and therefore the lights turned on

In (44) the I-principle allows us to enrich the interpretation of a conjunction to a more informative temporal sequential, or causal, relation. In the same sense, in the case of future-time reference, from the non-past modal semantic base the speaker infers a non-past, non-present (i.e. future) temporal reading. Thus, future readings in Modern Greek are parasitic on and additional to semantic information and they exhibit a typical property of I-inferences in that, as Levinson put it (2000: 116), "they do not just entail what is said but they introduce semantic relations absent from what is said, and in that sense can be said to reshape the proposition expressed."

Moreover, the future reading of *tha* with the PNP is stereotypical. In essence, there is a strong presumption that *tha* with PNP is understood as clearly future oriented and therefore, if the speaker had intended another interpretation but the future one, the speaker should have used a different way of saying it. In other words, it would be redundant to spell out more explicitly the future reading of examples like (41) and this is a typical property of I-inferences (Levinson 2000). Finally, the future interpretation has a positive nature in the sense that "the extension of what is implicated is a proper subset of the extension of what is said" (Levinson 2000: 119).

The future-time I-implicature, being a non-monotonic inference, is also expected to exhibit the key properties of conversational implicatures. At first, the future interpretation of *tha* with PNP is defeasible in certain contexts. By way of illustration, consider (45) and (46).

(45) i Eleni *tha* fiji avrio
The Eleni will leave PNP tomorrow
'Helen will leave tomorrow.'

+> i Eleni den ehi fiji akoma
'Helen hasn't left yet.'

(46) i Eleni *tha* fiji avrio an den ehi fiji idi
The Eleni will leave PNP tomorrow if not has left already
'Helen will leave tomorrow if she isn't already gone.'
(implicature *'Helen hasn't left yet.'* is cancelled by the additional premises)

Here, the future I-implicature in (45) is cancelled in (46) since it is overtly denied without any obvious contradiction.

However, it has to be noted here that cancellation is not possible in contexts where there is direct physical evidence. For example, if (45) is uttered while *Helen* is present in the discussion, the speaker cannot overtly cancel the implicated content by adding '*if she isn't already gone*' since the speaker can see that *Helen* is still there with him. This phenomenon is also observed in other implicature types such as the Quantity implicatures.

(47) a) Some of the cars are red
b) +> not all of the cars are red

The utterance in (47a) will normally convey the assumption in (47b). This happens because the use of *some* (which is semantically weak) instead of its contrastive semantic alternate, namely, *all* (which is semantically stronger) will implicate the negation of the interpretation associated with the use of the stronger expression, i.e. *not all*. Hence, in a rational and co-operative exchange, if the speaker knew that all of the cars were red, the speaker should have said so. The reading in (47b) being conversationally implicated can be explicitly cancelled without contradiction.

(48) a) Some of the cars are red, in fact all of them are
('not all of the cars are red' is cancelled)

Now, imagine that the speaker is looking at ten cars only four of which are red. In this case, direct evidence would block the cancelation context since indeed only some of the cars are red and therefore the speaker could not go on to suggest that in fact all of them are red since this would not be consistent with evidence in the real world.

Moreover, as noted above, the future-time interpretation is not attached to the form of *tha* constructions. In other words, a future-time reading can be successfully conveyed without the use of a *tha* construction.

(49) i Eleni etimazetai na SUBJ pai sto Londino
'Helen prepares for going to London.'
+> i Eleni den ehi pai sto Londino akoma
'Helen hasn't gone to London yet.'

(50) As fiji i Eleni de me niazi
'Let Helen leave, I don't mind.'
+> i Eleni den ehi fiji akoma
'Helen hasn't left yet.'

The primary reading of (49) and (50) is subjunctive and optative respectively, yet they both have a secondary future interpretation which is parasitic on the semantic information involved. This future reading is also defeasible as it happens in *tha* with PNP combinations. Future-time reference is also possible with the present tense verb form[10].

(51) i Eleni fevji avrio
The Eleni leaves tomorrow
'Helen will leave tomorrow.'

[10] Jaszczolt (2011: 4) notes that "the present is used to convey a pragmatic overlay pertaining to the degree of commitment to the truth of the ensuing event or the degree of planning; the overall message reads to the effect that, other things being equal, this is what has been planned for tomorrow, or this is what is intended for tomorrow. In short, although the present verb form is not the default way of referring to the future in either of the languages under discussion, it can be applied for this task for the purpose of increasing the degree of commitment on the part of the speaker".

In such cases, however, the future reading seems to be conditioned by the presence of the adverb of time since in the absence of an adverb, the time of reference is the utterance time.

Finally, the future-time reading can also be reinforced with no sense of redundancy. Consider the example.

(52) i Eleni *tha* fiji avrio, den exi fiji akoma
The Eleni will leave PNP tomorrow not has left yet
'Helen will leave tomorrow, she hasn't left yet.'

It is shown then that the future-time interpretation of *tha* with PNP constructions is pragmatically induced and it is not part of what is coded. In particular, the future reading arises as a default I-implicature which expresses a more informative reading of the modal semantic base.

6. Conclusion and further implications

In this paper, I have considered a pragmatic analysis of future-time reference in Modern Greek. I mainly examined the distributional basic facts of *tha* with PNP and *tha* with INP sentences and I presented the current accounts in the literature. Based mainly on the analysis proposed by (Giannakidou 2009, 2012 and Giannakidou & Mari 2012), I argued for a generalized pragmatic account for future-time reference in Modern Greek in terms of the neo-Gricean pragmatic theoretical framework in the spirit of Levinson (2000). More precisely, assuming that *tha* constructions contribute an epistemic modal semantic base (Giannakidou 2009, 2012 and Giannakidou & Mari 2012), I claimed that future interpretations of *tha* with PNP combinations arise as I-implicatures. In essence, it was proposed that given the semantic base, future-time reference arises as a default implicature from the lack of further specification to the lack of need for it.

Finally, this paper has two major implications for current thinking on future-time reference. In the first place, what is actually proposed is that future-time reference is a special case of modality and that the future reading arises when it is more informative than the epistemic modal one. The idea that future time reference can be modal is not novel. More precisely, Giannakidou (2009, 2012) and Giannakidou & Mari (2012) also argue that future is a kind of epistemic modality and more specifically that it is related to evidentiality. What is more, Jaszczolt (2006), in an analysis of the English *will* within the Default Semantics framework, suggests that the different readings of *will* can be better explained by a scale of epistemic modality[11] showing thus that future-time reference can be modal.

Secondly, it appears that future-time reference is a product of the division of labour between semantics and pragmatics. The coded content of the traditionally called 'future tense' is non-past, epistemic and it makes reference to possible worlds, leaving also open the possibility of a future reading. Nevertheless, what is actually communicated is a default non-past, non-present meaning, which is a subset of the meaning of the semantic base. The future interpretation arises then as an I-enriched more specific, temporal

[11] For more arguments for temporality as epistemic modality see also Jaszczolt (2009, 2013).

interpretation based on the semantic content of what is said and it is consistent with what the speaker intends to communicate.

References

Abusch, Dorit. (2004). "On the temporal composition of infinitives". In J. Guéron, & J. Lecarme (Eds.), *The Syntax of Time* (1–34). Cambridge, Mass, The MIT Press.

Bybee, Joan L. & Östen Dahl (1989). "The creation of tense and aspect systems in the languages of the world". *Studies in Language, 13.1*, 51-103.

Bybee, Joan L., Revere D. Perkins & William Pagliuca (1994). *The evolution of grammar: Tense, aspect and modality in the languages of the world*. Chicago & London: The University of Chicago Press.

Comrie, Bernard (1976). *Aspect*. Cambridge Textbooks in Linguistics. Cambridge: Cambridge University Press.

Comrie, Bernard (1985). *Tense*. Cambridge Textbooks in Linguistics. Cambridge: Cambridge University Press.

Condoravdi, Clio. (2002). Temporal interpretation for modals. Modals for the present and modals for the past. In D. Beaver al. (eds.), Stanford Papers on Semantics. Stanford: CSLI, 59-87.

Copley, Bridget (2009). *The Semantics of the Future*. Outstanding Dissertations in Linguistics. New York: Routledge.

Dahl, Östen (1985). *Tense and Aspect Systems*. Oxford: Blackwell.

Enç, M. (1996). Tense and Modality. In S. Lappin (ed.), Handbook of Contemporary Semantic Theory. Oxford : Blackwell.

Giannakidou, Anastasia (2009). "The dependency of the subjunctive revisited: temporal semantics and polarity". *Lingua, 120*, 1883-1908. DOI: 10.1016/j.lingua.2008.11.007

Giannakidou, Anastasia (2012). "The Greek future particle as an epistemic modal". In Z. Gavriilidou, A. Efthimiou, E. Thomadaki and P. Kambakis-Vougiouklis (Eds.), *Proceedings of 10th ICGL* (48-61) Democritus University of Thrace.

Giannakidou, Anastasia & Alda Mari (2012). "A modal analysis of Greek and Italian future morphemes". Proceedings of Sinn und Bedeutung 17: 255-270.

Giannakidou, Anastasia & Alda Mari (2013). "A two dimensional analysis of the future: modal adverbs and speaker's bias". Proceedings of the Amsterdam Colloquium 2013: 115-122.

Giannakidou, Anastasia & Alda Mari (2014). The future in Greek and Italian: truth conditional and evaluative dimensions. Ms.

Grice, Paul (1975). "Logic and Conversation". In P. Cole & J. Morgan (Eds.), *Syntax and Semantics 3: Speech Acts* (41-58). New York: Academic Press.

Grice, Paul (1989). *Studies in the Way of Words*. Cambridge, Mass: Harvard University Press.

Heine, Bernd (1995). Agent-oriented vs. epistemic modality: some observations on English modals. In J. Bybee & S. Fleischman (Eds.), *Modality in grammar in discourse: Typological Studies in Language 32* (17-53) Amsterdam: John Benjamins.

Holton, David, Mackridge, Peter & Philippaki-Warburton, Irene (1997). *Greek: A Comprehensive Grammar of the Modern Language*. London, Routledge.

Jaszczolt, M. Kasia (2006). Futurity in Default Semantics. In: K. von Heusinger and K. Turner (Eds.), *Where Semantics Meets Pragmatics*. (471-492) Oxford: Elsevier.

Jaszczolt, M. Kasia (2009). *Representing Time: An Essay on Temporality as Modality*. Oxford: Oxford University Press.

Jaszczolt, M. Kasia (2011). Time as degrees of epistemic commitment. In: P. Stalmaszczyk (Ed.), *Turning Points in the Philosophy of Language and Linguistics*. (19-34) Frankfurt: Peter Lang.

Jaszczolt, M. Kasia (2013). Temporality and epistemic commitment: An unresolved question. In: K. Jaszczolt and L. de Saussure (Eds.), *Time: Language, Cognition, and Reality*. (193-209) Oxford: Oxford University Press.

Joseph D. Brian (1983). The synchrony and diachrony of the Balkan infinitive. A study in aerial, general and historical linguistics. Cambridge Studies in Linguistics Supplementary Volume. Cambridge University Press.

Kissine, M. (2008). Why will is not a modal. Natural Language Semantics, 16 (2): 129–55. DOI: 10.1007/s11050-008-9028-0

Levinson C. Stephen (1987). " Pragmatics and the grammar of Anaphora: A partial pragmatic reduction of binding and control phenomena". *Journal of Linguistics, 23*, 379-434. DOI: http://dx.doi.org/10.1017/S0022226700011324

Levinson C. Stephen (1991). "Pragmatic Reduction of Pragmatic Conditions Revisited". *Journal of Linguistics, 27*, 107-161. DOI: http://dx.doi.org/10.1017/S0022226700012433

Levinson, S.C. (1995) 'Three levels of meaning', in F.R. Palmer (ed.) *Grammar and Meaning. Essays in Honour of Sir John Lyons*, Cambridge: Cambridge University Press.

Levinson C. Stephen (2000). *Presumptive Meanings: The Theory of Generalized Conversational Implicature*. Cambridge: The MIT Press.

Ludlow, Peter (1999). *Semantics, Tense and Time: An Essay in the Metaphysics of Natural Language*. Cambridge: The MIT Press.

Mackridge, Peter (1985). *The Modern Greek Language: A Descriptive Analysis of Standard Modern Greek*. Oxford: Oxford University Press.

Mari, Alda. (2009). The future : how to derive the temporal interpretation. JSM 2009, Paris VII.

Mari, Alda. (2010). Temporal reasoning and modality. Invited talk Temptypac Workshop, Paris VIII.

Philippaki-Warburton, Irene (1992). "Η συντακτική ταυτότητα του να". (255-274). Studies in Greek Linguistics.

Philippaki-Warburton, Irene (1994). Verb movement and clitics in Modern Greek. In Philippaki-Warburton I., Nicolaidis, K. & Sifianou, M. (eds.), *Themes in Greek CLITICS AND DOUBLING* (53-60), Current issues in linguistic theory 117. Amsterdam: John Benjamins.

Rivero, Maria-Luisa (1994). Clause structure and v-movementin the languagesof the balkans. *Natural Language and Linguistic Theory, 12*: 63–120. DOI: 10.1007/BF00992746

Sarkar, Anoop (1998) "The Conflict Between Future Tense and Modality: The Case of Will in English," *University of Pennsylvania Working Papers in Linguistics*: Vol. 5: Iss. 2, Article 6.

Smith, Carlota (1991). *The parameter of aspect*. Studies on Linguistics and Philosophy 43. Dordrecht, Boston, London: Kluwer Academic Publishers.

Squartini, Mario (2004). "Disentangling evidentiality and epistemic modality in Romance". *Lingua*, 114: 873-895. DOI: 10.1016/S0024-3841(03)00064-0

Tsangalidis, Anastasios (1999). *Will and Tha: a comparative study of the category of the future*. Thessaloniki: University Studio Press.

Veloudis, Jiannis & Philippaki-Warburton, Irene, 1983. The subjunctive in Modern Greek. In *Studies in Greek Linguistics. Proceedings of the 4th annual meeting of the Department of Linguistics* (151-168). University of Thessaloniki.

Xidopoulos, Georgios (1996). *Tense, aspect and adverbials in Modern Greek*. Unpublished Ph.D. Thesis. University College London.

About the author

Michael Chiou (BA, MA, PhD *in Linguistics*). My main research interests are in pragmatics and especially the pragmatics-syntax and pragmatics-semantics interfaces. Current research involves anaphora in Modern Greek and the interpretation of time in language. I have taught and supervised for pragmatics, semantics and syntax at the University of Hertfordshire and the University of Cambridge.

MEASURING SYNTACTIC COMPLEXITY IN SPOKEN AND WRITTEN LEARNER LANGUAGE: COMPARING THE INCOMPARABLE?

PEKKA LINTUNEN
University of Turku
pekka.lintunen@utu.fi

MARI MÄKILÄ
University of Turku
mkmaki@utu.fi

Abstract
Spoken and written language are two modes of language. When learners aim at higher skill levels, the expected outcome of successful second language learning is usually to become a fluent speaker and writer who can produce accurate and complex language in the target language. There is an axiomatic difference between speech and writing, but together they form the essential parts of learners' L2 skills. The two modes have their own characteristics, and there are differences between native and nonnative language use. For instance, hesitations and pauses are not visible in the end result of the writing process, but they are characteristic of nonnative spoken language use. The present study is based on the analysis of L2 English spoken and written productions of 18 L1 Finnish learners with focus on syntactic complexity. As earlier spoken language segmentation units mostly come from fluency studies, we conducted an experiment with a new unit, the U-unit, and examined how using this unit as the basis of spoken language segmentation affects the results. According to the analysis, written language was more complex than spoken language. However, the difference in the level of complexity was greatest when the traditional units, T-units and AS-units, were used in segmenting the data. Using the U-unit revealed that spoken language may, in fact, be closer to written language in its syntactic complexity than earlier studies had suggested. Therefore, further research is needed to discover whether the differences in spoken and written learner language are primarily due to the nature of these modes or, rather, to the units and measures used in the analysis.

Keywords: EFL, complexity, written language, spoken language

1. Introduction

The mastery of a second language (L2) usually refers to high proficiency in both spoken and written communication. Spoken and written language are seen as two modes of production. In second language acquisition (SLA) research, it is common to focus on one or the other. As the two modes are considered intrinsically different, common methods for comparing spoken and written production are not always easy to find. However,

spoken and written skills are, in addition to the receptive skills of reading and listening, two important aspects of a learner's L2 proficiency. Therefore, it is important to pay attention to the methods used in analysing these two skills. If we assume, for example, that a learner has achieved a higher proficiency in their spoken than written skills, we should also be able to measure the difference objectively.

Complexity, accuracy and fluency (or CAF) are nowadays seen as the qualitative dimensions of language use (Housen, Kuiken and Vedder 2012b). A proficient language user produces fluently accurate and complex language. The interplay between these dimensions interests many researchers, but they are also studied separately. This study focuses on complexity in spoken and written learner language. The concept of complexity is the most challenging component of the CAF framework to define and operationalise (e.g. Pallotti 2009: 592; Housen, Kuiken and Vedder 2012a: 10). With the help of this concept, researchers describe and study the proficiency of the L2 learner (Housen and Kuiken 2009: 461), and syntactic complexity measures have, for instance, been used to evaluate L2 writing development (Ortega 2003: 92). So far, in the majority of CAF studies, the focus has been on accuracy, fluency or the developmental aspect of complexity, whereas the present study focuses on syntactic complexity in two modes of production.

The purpose of this study is twofold: we want to examine the nature of syntactic complexity in spoken and written L2 production, and secondly, explore how the choice of the segmentation unit affects the complexity measure results. The data come from informal spoken monologues and short essays produced by the same subjects. Our theoretical underpinnings come from three partly related areas: the differences between spoken and written language, the concept of complexity as a quality dimension of learner language, and, finally, a critical review of the methods used in measuring L2 complexity in earlier studies.

2. Theoretical framework

2.1 The two modes: spoken and written language

The approaches to the relationship between spoken and written language have varied greatly with regard to the theoretical standpoint. Some linguists consider spoken and written language as closely related modes of production; others do not recognise the relationship at all (Cleland and Pickering 2006: 185). Many linguists have studied the fundamental differences between spoken and written language (e.g. Halliday 1979, 1989; Beaman 1984; Bourdin and Fayol 1994), and some of these studies have shown that writing is more demanding than speaking (e.g. Chafe 1982). However, in such studies, writing and speaking are often considered as cognitive tasks, and writing demands more cognitive resources. Moreover, higher expectations are set for accuracy in writing, whereas spoken language allows many inaccuracies in form. In the present study, the focus was set on the end product instead of the use of cognitive resources in real-time processing. As Cleland and Pickering (2004: 186) suggest, one of the differences in the end products is the complexity of the constructions used.

Baron (2000) has presented three approaches to the relationship between speech and writing. The *Opposition View* accentuates the difference between the modes of production, such as writing being highly structured, syntactically complex and formal, whereas speech being loosely structured, syntactically simple and informal. The *Cross-over View* brings the different types of writing and speech to the centre of focus, and the boundary between the modes blurs as features of one mode are adopted in the other, such as in "talking books". The *Continuum View* takes the surrounding context into consideration and places different types of writing and speech on a continuum. Written texts, such as law texts and academic writing, could be placed at the literary end of this continuum, whereas informal conversation could be at the oral end. These ends of the continuum differ greatly from each other, and therefore, the greatest differences in structural complexity can be found when comparing, for instance, casual conversations and academic writing where the differences in the way of producing, transmitting, and receiving the language are notable (see further e.g. Tanskanen 2006: 74–80). The contradictory results of the differences between spoken and written complexity in earlier studies are largely due to extraneous variables: in addition to the mode, the studies have also included the register or style of the productions as variables (see e.g. Beaman 1984: 51). That is, the productions studied have represented styles or registers that are too far from each other on the continuum.

Leech, Deuchar and Hoogenraad (1982: 139–140) present the typical features of speech and writing. In writing, these features include, for instance, explicitness, clear sentence boundaries, more complex structure and features reflecting formality, whereas speech is characterised by inexplicitness, lack of clear sentence boundaries, simple structure and interactional features. Such features vary between and within the mode of production (for a thorough description of the grammatical differences across registers of speech and writing, see Biber, Conrad and Leech 2002). Moreover, researchers have discovered that written texts contain complex syntactic structures, whereas in spoken language subordinate clauses are rare and occurrences of hesitations and unfinished utterances frequent, which makes spoken syntax less complex (Brown and Yule 1983: 1–10, Pietilä 1999: 6–7). Zhang (2013: 835) also notes that the sentences used in written language tend to be longer and more complex than the corresponding units used in spoken language.

However, for example Halliday (1979, 1989: 76, 79) points out that speech is no less structured (or less complex, in a sense) than written language, although its complexity is of different nature as the grammar itself is more complex in speech, while lexical complexity is more evident in writing. Writers usually aim to be precise and concise in their writing, whereas in speech ideas are elaborated "online", which can result in complex chains of thoughts (Beaman 1984: 50–51). Halliday (1989), while focusing on native language (L1), claims that syntactic structures can be even more complex in speech than they are in writing. In the studies that support this idea, the language studied is often L1 and the focus is on embedding, while the other aspects of complexity, such as clausal complexity, are neglected.

In the present study, these fundamental differences between speech and writing were taken into consideration with due regard paid to the difficulties in comparing the two different and much varied modes. However, it can also be noted that the difference between the two modes of production manifested in our study can be expected to be

somewhat smaller as the spoken samples were not dialogues, but planned monologues, and thus, contain a relatively limited number of characteristics typical of interactive situations, such as repetitions and unfinished utterances (Pietilä 1999: 7), and the written part consisted of rather informal essays.

It should also be noted in the context of L2 learning and teaching that writing has traditionally had a dominating role in educational systems around the world (see e.g. Zhang 2013: 836). This has an inevitable effect on the language that students learn. Additionally, teaching materials are mostly based on writing, and authentic spoken materials are less frequently used. In addition, the way of learning L2 (formal vs. informal) can have a great effect on the language skills in different domains: for example, learning through formal teaching may result in a better knowledge of grammatical rules and structures, whereas in the process of learning through informal L2 acquisition, understanding and speaking skills typically develop faster (Ortega 2009: 80). Our study focused on learners benefitting from rather formal and traditional education process, which, as it may be expected, would strengthen and emphasise their written skills.

2.2 L2 complexity

The triad of CAF and its theoretical applications stem from the fundamental question of the characteristics of a proficient language user (Housen, Kuiken and Vedder 2012a: 2). Although commonly used, CAF has its controversial aspects, one of the most disputable ones being the interplay of its components. Ellis and Barkhuizen (2005: 139–145) note that the component parts are interdependent, but as for the degree of interdependency, there is no clear consensus in relevant literature (see further, e.g. Skehan 1998; Robinson 2001; Gilabert 2006; Towell 2007; Ellis 2008; Tonkyn 2012). In general, L2 proficiency is just understood as multicomponential. The analysis of learner language using one of the components has been justified, and the notions of the triad can be used separately in the analysis of the L2 system and its development.

According to Bulté and Housen (2012: 22), the contradictory results in selected complexity studies can be partly explained by the vagueness of metalinguistic definitions, which relate to a varied number of different aspects that can be measured. For instance, Ellis and Barkhuizen (2005: 152–156) categorise the types of complexity measures according to the object of measurement into interactional, propositional, functional, grammatical and lexical. As pointed above, in the present study, the focus is solely on *grammatical complexity* (i.e. structural or syntactic complexity).

At a very basic level, according to Bulté and Housen (2012: 22), a satisfying definition is that complexity can refer to "(1) the number and the nature of the discrete components that the entity consists of, and (2) the number and the nature of the relationships between the constituent components". A frequently used definition for complexity is that the language user has the ability to produce linguistically, and thus cognitively, more demanding linguistic material (e.g. longer units with more complex embedding elements) (Pallotti 2009: 593). However, it is important to note that complexity cannot be totally paralleled with the difficulty of production. According to Pallotti, linguistic variation can be an important part of the notion of complexity and

some linguists add to this definition the fact that language learners learn to use such cognitively demanding material rather late in their learning process. However, Pallotti (2009: 593–594) also notes that the developmental aspect needs to be separated from the complexity definition due to the difference between the product and the process with complexity being a characteristic of linguistic production and development belonging in the process of learning.

In short, although relevant definitions are much varied, it is also a fact that most researchers believe that the notion of complexity can be used to describe the structural characteristics of learner language and to study linguistically demanding production. Thus, for the purposes of the present study the concept of complexity has been defined as follows: complexity is the use of linguistically demanding language, considering both its quantitative (length, ratios, frequency) and qualitative aspects (dependent clause type).

2.3 Measuring L2 complexity

According to Ellis and Barkhuizen (2005: 154), a common complexity measure is grammatical complexity, introduced as "grammatical variation and sophistication" (Wolfe-Quintero, Inagaki and Kim 1998: 69) or, if only a certain aspect such as embedding is considered, "the number, type and depth of embedding in a text" (Beaman 1984: 45). Thus, syntactic complexity means that varying structures with complex elements, such as embedded dependent clauses, are used. The analysis of syntactic complexity aims to describe such complex structures, i.e. to determine how smaller units and simple sentences are combined into more complex structures (Holger 2004: 3), and to study various phenomena, for example the effect of instruction or task complexity on performance in L2 writing, and especially, the developmental aspect of complexity in L2 (Ortega 2003: 492).

Various studies on syntactic complexity (cf. e.g. Wolfe-Quintero, Inagaki and Kim 1998, Norris and Ortega 2009) have also examined the ways of measuring syntactic complexity. As Hunt (1965) states, *more* is often considered to be a sign of complexity. Thus, length, amount of embedding, and frequency of certain sophisticated structures (e.g. non-finite clauses) can function as a basis for syntactic complexity. It follows that long production units (e.g. elongated sentences) can be considered more complex than short units. The number of subordinated structures is one of the most frequently used measures in syntactic complexity studies, especially in L2 studies (Ellis and Barkhuizen 2005: 154). Holger (2004: 3) notes that complex sentences originate from simple sentences that are gradually linked together, through coordination and subordination. This linking of production units makes the language more complex. Some linguistic elements are also considered more complex than others (e.g. infinitival phrases) (Bulté and Housen 2012: 31). Higher frequency of such elements can be seen as a sign of complex language use.

Bergman and Abrahamsson (2004: 611) have created a three-level scale for describing the syntactic structures in L2. For beginners, the sentence structures are simple and only the basic linking elements (such as *and, but, then*) are present. At the intermediate level, the use of complex sentence structures increases, especially

concerning dependent clauses, with variation in the use of linking elements. At this level, non-finite clauses begin to appear in learners' production. The advanced learners' level is characterised by a varied use of different sentence structures with multiple dependent and non-finite clauses. The subjects of the present study were all from a group with a target intermediate level, i.e. the mid-level of the above-mentioned scale, which led to the assumption that the syntactic structures used within the group should be quite complex.

Earlier studies often focused on the development of syntactic complexity (e.g. Bardovi-Harlig 1992; Mellow 2006) or the effect of task types on L2 written (e.g. Ishikawa 1995, 2007; Storch and Wigglesworth 2007; Kuiken and Vedder 2007; Robinson 2007) and spoken complexity (e.g. Skehan and Foster 2005; Tavakoli and Foster 2008). Syntactic complexity has also been studied by comparing spoken and written material. For instance, in the 1960s, studies comparing spoken and written language concentrated on word frequency counts (related to the length of sentences) and resulted in finding that writing was more complex than speech. It should be reiterated in this context that the existing inconsistency, or even contradictions, in research conclusions may have resulted from the inadequately phrased definitions (e.g. Tanskanen 2006: 74).

Silva, Abchi and Borzone (2010) studied the L1 syntactic complexity in oral and written retellings by Spanish children. In their analysis, the length and number of T-units and the number of subordinated clauses per T-unit were used as measures. The first two measures revealed a difference between the modes, whereas the last one did not. Beaman (1984) studied L1 syntactic complexity by comparing 20 spoken and written narratives with focus on coordination and subordination. Her results supported Halliday's (1979) earlier proposal that if subordination is the most important indicator of syntactic complexity, spoken production is as complex as written production.

Another example is provided by Larsen-Freeman (2006), who studied the development of L2 complexity, accuracy and fluency in the spoken and written production of five Chinese (higher-) intermediate learners of English. In her study, she repeated the same type of tasks with the same subjects four times during a six-month period. Syntactic complexity was measured with the average number of clauses per T-unit. The limited number of subjects and only one measure used in the assessment of complexity were the limitations of this study, but the main (quantitative) finding was that every CAF domain improved at the group level although individual differences were still significant (Larsen-Freeman 2006: 598–560).

To reiterate, different methods and definitions have been common in earlier studies. For example, there are varying definitions for a *clause* in relevant literature (cf. e.g. Iwashita 2006: 159; Ishikawa 2007: 142; Vyatkina 2013: 18), and quite often this unit is not at all defined (e.g. Polio 2001: 97; Bulté and Housen 2012: 39). Hunt (1965: 15) defines a clause as "a structure with a subject and a finite verb (a verb with a tense marker)", while Bulté and Housen (2012: 39) note that the disadvantage of this definition is that it excludes an essential use of complex structures, i.e. non-finite clauses, which are important and may further affect research results when certain verb constructions are analysed as two clauses. For the present study, the clause is defined after Foster, Tonkyn and Wigglesworth (2000), i.e. as a structure which does not need to include a finite verb. A clause is a structure that consists of a verbal element plus an

additional clause element, for example an object or an adverbial (Foster, Tonkyn and Wigglesworth 2000: 366).

In written language analysis, the category of the *sentence* has often been used in segmenting data into units. However, when analysing learner language, the use of sentence as a comparative unit could be challenging as punctuation is not always consistent. Hunt (1965) presents the *minimal terminable unit* (T-unit) as a valid comparative unit for measuring syntactic complexity in L1 writing development and Hunt (1965: 20, 49) defines such a unit as an entity that consists of one main clause and (optional) subordinate clauses (i.e. dependent clauses) and non-clausal units or sentence fragments attached to it. This means that a traditional sentence with two coordinated main clauses should be segmented into two T-units.

The concept of the T-unit has been used in several L2 studies (e.g. Bardovi-Harlig 1992: 390) and researchers have generally been content with the unit (Gaies 1980: 53–54). As coordination is characteristic of lower proficiency levels, the sentence has been reintroduced as a comparative measure in studies with subjects of higher proficiency (Bardovi-Harlig 1992: 390). Gaies (1980: 59) notes, however, that the T-unit is usable also at higher proficiency levels if the researcher takes the limitations into account. Following this view, in the present study, the T-unit was used to enable comparison of the results with earlier studies. In addition, the sentence was also used as a comparative unit. This enabled us to examine the ratio of coordinated structures and the measure of sentence complexity ratio, and to study the effect of the segmentation unit on the complexity measures.

In selected studies, especially those focused on comparing spoken and written production, the T-unit was adopted as a unit for spoken data (e.g. Halleck 1995; Pietilä 1999; Larsen-Freeman 2006). However, the units that are originally based on (L1) written language can be problematic at the time of segmenting spoken L2 data; such units do not meet the requirements that an analysis of such complex language samples as L2 speech sets for the measurements (Foster, Tonkyn and Wigglesworth 2000: 354; Ellis and Barkhuizen 2005: 147). Thus, Foster, Tonkyn and Wigglesworth (2000: 365) introduce the *Analysis of Speech Unit* (AS-unit) for dividing spoken data into analysable units. In addition to its syntactic quality, the AS-unit has features related to intonation and semantics and is defined as "a single speaker's utterance consisting of *an independent clause, or sub-clausal unit,* together with any *subordinate clause(s)* associated with it". This definition was adopted for the present study and the exact methods used are presented in section 3.

3. Methodology

3.1 Research questions and subjects

The reported study had two main research questions: 1. What is the nature of syntactic complexity in spoken and written L2 production? 2. How does the choice of the segmentation unit affect the complexity measure results?

The subjects were 18 upper secondary school students (9 male, 9 female), 17–18 years old (average 17.6) in South-Western Finland. As a result, the data consisted of 18 written essays and 18 transcribed spoken productions. With regard research ethics, parental consent was obtained for underage subjects.

The subjects with expected intermediate educational level were chosen to match the methodology and the measures used in the study, which appeared to be most suitable for intermediate-level learners (cf. Norris and Ortega 2009). Formally, the subjects were expected to represent intermediate-level language learners (in the range of higher B1 and lower B2 on the CEFR scale according to the curricular target levels). The individual subjects were selected with the use of a number of criteria in order to make the research group as homogenous as possible.

All subjects had Finnish as their L1, none of them were bilingual, and none had spent more than a month abroad. The subjects studied English as their first foreign language in mainstream education and had received average grades. Thus, the subjects chosen for the study were approximately at the same proficiency level (based on the combination of the educational level and school grades). It is, naturally, probable that some subjects may have been more proficient writers than speakers or vice versa. Their school grades represented their overall skills and, among other factors, may also have been affected by a particular student's diligence.

3.2 Data collection

The data for the study were collected in connection with a larger research project on CAF and L2 English. The subjects were involved in two tasks. In the written part, the subjects were asked to write an informal essay of 150–250 words on one of three given topics. In the spoken part, the subjects were shown a cartoon strip with six frames, and their task was to tell a story based on the cartoon. The subjects had two minutes to familiarise themselves with the cartoon and to plan their story before performing the task. The subjects were able to see the cartoon while telling the story. The spoken samples were transcribed, and the length of pauses was measured with the help of the waveform functions of two types of software (Amadeus Lite for Mac and Transcriber for Windows). Intonation was assessed auditorily.

The total number of words in the data was 4240, the written part being somewhat larger than the spoken part (written 2353 words and spoken 1887 words, 16.9 minutes). The number of words in the spoken data contained only the words analysed (e.g. repetitions and hesitations excluded). The mean sample length was longer in the written samples (written sample on average 130.7 words and spoken 104.8 words).

3.3 Measurements

When we focus on learner language that includes many nonstandard forms, the importance of definitions is highlighted. For instance, the notion of the *word* needs to be clarified. In the present study, compounds were analysed according to their actual form, whether correct or not (e.g. *seventeenyear olds* was counted as two words). In the spoken

samples, only the words belonging to the units analysed were included in the word count (*e.g.* repetitions were excluded). As has been mentioned above, we followed Foster, Tonkyn & Wigglesworth's (2000) definitions of clauses and AS-units. T-units and sentences were also used as comparative units.

To examine the relationship between spoken and written complexity, we also introduced a new unit. In a sense, this unit can be seen as an equivalent to a written sentence. However, the aim was not to adapt the rules of writing to spoken production. When focusing on fluency and learner development, the tone unit or mean length of run (MLR) are often used as comparative units. These are not ideal when analysing complexity as the use of short pauses as boundary signals places the emphasis on fluency rather than on complexity. The fact that non-native speakers need more time for planning their production or for searching for an appropriate word or expression should not affect the assessment of the syntactic complexity of their production. Therefore, a unit with a more flexible definition for unit boundaries is needed when studying L2 complexity. In the unit introduced and piloted in the present study, the traditional criteria were applied but the pause limit was loosened and the use of a combination of several criteria was enabled to include the context of the stretch of speech in the segmentation. The new unit, called the *modified utterance* or the *U-unit*, is closly related to the concepts of T-unit, C-unit (a semantic unit used in spoken data, a stretch of speech containing a pragmatic meaning, Pica et al. 1989: 72) and utterance (e.g. Foster, Tonkyn and Wigglesworth 2000: 359), and therefore combines syntax, semantics and intonation as a basis for segmentation. The basic idea is similar to the idea unit as defined by Ellis and Barkhuizen (2005: 154), i.e. "a message segment consisting of a topic and comment that is separated from contiguous units syntactically and/or intonationally." The definition of the U-unit is more precise when it comes to the unit boundaries. We defined the U-unit as follows:

> one independent clause or several coordinated independent clauses, with all dependent clauses or fragmental structures attached to it, separated from the surrounding speech by a pause of 1.5 seconds or more, or, especially in occurrences of coordination, a clear change in intonation and a pause of 0.5 seconds or more (depending on the average length of boundary pauses in the sample), containing one semantic unity.

The syntactic starting point is that of independent clauses, coordination included, and dependent clauses. Coordination was allowed following earlier observations of learner language (e.g. Gaies 1980; Bardovi-Harlig 1992). As stated earlier, L2 speakers need more time to plan their speech and/or to search for the correct word. In the present study, the duration of 1.5 seconds was chosen, as the unit boundary is often clearly marked when stretches of speech are separated by such a long pause. If there was a clear change in intonation, which was rather infrequent in our learner language samples, the pause could be shorter. If the end of a stretch of speech was marked by a clear (usually falling) intonation pattern and followed by a pause of 0.5 seconds, this was considered a unit boundary, in fact similar to the AS-unit (Foster, Tonkyn and Wigglesworth 2000: 367). Individual differences were taken into account by examining the overall length of pauses in the sample. If the speaker had long intraclausal planning pauses, the criterion for the unit boundary pause was lengthened accordingly. The pauses had to be silent pauses between semantic units, i.e. pausing with hesitation (or filled pauses) within a semantic

unit was not considered a unit boundary. Examples 1 and 2 illustrate how semantics affects the segmentation into U-units and how it differs from AS-units. In the examples, the end of a unit is marked with square brackets. Pause lengths are in brackets. Micropauses (shorter than 0.4 seconds) are marked as (.).

(1) some (.) age (0.7) ago (0.5) there's a (0.7) big apple tree [AS] and they (0.9) sit (1.8) under (0.6) under the tree (.) together [AS U]
(2) then (0.6) they think that (0.9) the tree is (1.5) old enough [AS] (0.5) and (.) they build (.) a house (1.0) from the tree [AS U]

In the examples, two AS-units form a semantic unit (with varying lengths in pausing), and therefore constitute one U-unit. Coordination was not an automatic boundary signal for U-units. In Example 2, the speaker has a long planning pause before the subject predicate "old enough" but continues without a longer pause or other boundary signals into the coordinated clause, which is part of the same semantically coherent U-unit.

L2 syntactic complexity and the development of sentence structure complexity have been studied by using different methods of measuring complexity (see Polio 2001: 96–97; Tonkyn 2012: 222–223). For instance, Wolfe-Quintero, Inagaki and Kim (1998: 9–11) examine ways of measuring syntactic complexity in written production: their common methods include counting the length, measuring the frequency or ratio of linguistic elements. Some other studies (e.g. Scarborough 1990; Bardovi-Harlig 1992) have used index-based formulae. Wolfe-Quintero, Inagaki and Kim (1998: 119) conclude that the most reliable measures for syntactic complexity development are clauses per T-unit and the number of dependent clauses per clause, or the number of dependent clauses per T-unit, which are all based on ratios. However, it seems that by using more measures one can achieve a more reliable result, which is not affected by the overuse of a certain unit, for example. The measures used in this study are listed in Table 1 below.

Measure type		Measure for written language	Measure for spoken language
Overall measure	Length	1. Mean length of sentence (words per sentence, W/S) 2. Mean length of T-unit (words per T-unit, W/T)	1. Mean length of U-unit (words per U-unit, W/U) 2. Mean length of AS-unit (words per AS-unit, W/AS)
Ratio	Complexity ratio	3. Sentence complexity ratio (clauses per sentence, C/S)	3. U-unit complexity ratio (clauses per U-unit, C/U)
	Coordination	4. Coordinate clauses per sentence (Coord/S)	4. Coordinate clauses per U-unit (Coord/U)

Measure type		Measure for written language	Measure for spoken language
	Subordination	5. Dependent clause ratio (dependent clauses per clause, DC/CWr)	5. Dependent clause ratio (dependent clauses per clause, DC/CSp)
Intra-clausal	Length	6. Mean length of clause (words per clause, W/CWr)	6. Mean length of clause (words per clause, W/CSp)
	Frequency	7. Number of non-finite dependent clauses (NonFWr)	7. Number of non-finite dependent clauses (NonFSp)

Table 1: Measures

In the present study, the overall measures included the length of units, as length is widely considered to be a valid measure for overall complexity (Szmrecsányi 2004; Norris and Ortega 2009: 561). The mean length of the unit was calculated by dividing the total number of words by the number of comparative units. Ratio measures contained the complexity ratio, coordination and subordination (measured in dependent clauses in the present study). These three measures were used in the present study to check how the measures functioned when the modes of production were being compared. The number of non-finite dependent clauses was included in the analysis, as earlier studies indicated that a high frequency of non-finite dependent clauses indicated more complex language (Bergman and Abrahamsson 2004: 611). We compared the two modes by comparing the corresponding measures. The measures of T-unit and AS-unit complexity (C/T, C/AS) and coordination per T-unit and AS-unit (Coord/T and Coord/AS) were not part of the actual analysis, but were calculated for the discussion on the choice of comparison unit.

SPSS was used for statistical testing. The Shapiro-Wilk's test was used for testing the normal distribution. As all the measures were not normally distributed, for clarity's sake, only non-parametric tests are reported in this study. When comparing the modes, the Wilcoxon signed-ranks test was used for statistical significance (see Larson-Hall 2010: 251, 404).

4. Results

The size of the written sample was 2353 words and the spoken sample 1887 words. The written sample contained on average 9.4 T-units, 8.4 sentences and 21.3 clauses per subject, whereas the mean number of their spoken counterparts was 12.2 AS-units, 7.3 U-units and 17.8 clauses.

	Minimum	Maximum	Mean	Std. Deviation
W/S	9.18	27.00	16.53	5.01
W/T	9.18	20.20	14.57	3.47
W/CWr	4.21	9.21	6.25	1.07
C/S	1.67	4.57	2.67	.78
Coord/S	.00	.86	.29	.26
DC/C	.20	.68	.50	.14
NonFWr	.00	9.00	4.39	2.79

Table 2: Complexity in the written production

In written production, as Table 2 shows, the mean lengths of the comparative units were 16.53 words per sentence, 14.57 words per T-unit and 6.25 words per clause. The mean sentence complexity ratio (C/S) was 2.67, indicating that the linking of clauses into larger units was rather common. This, according to the definition of complexity, can be seen as a good indication of complex language. Coordination was used rather infrequently as a way of linking main clauses (0.29 coordinate clauses per sentence on average). This result reflects the relatively small difference between sentences and T-units, as the main difference in segmenting these units is based on coordination. The mean dependent clause ratio was 0.50, i.e. there was one dependent clause for every other clause, indicating rather frequent use of dependent clauses, which can be considered a sign of complexity. In addition, the complexity of the use of dependent clauses can be seen in the mean number of non-finite clauses.

	Minimum	Maximum	Mean	Std. Deviation
W/U	10.00	20.00	14.27	3.04
W/AS	5.38	15.20	9.08	2.29
W/CSp	4.64	7.23	5.89	.68
C/U	1.57	3.60	2.45	.56
Coord/U	.14	1.33	.57	.34
DC/CSp	.00	.61	.34	.16
NonFSp	.00	4.00	1.67	1.28

Table 3: Complexity in the spoken production

In spoken production, as can be seen in Table 3, the mean lengths of the comparative units were 14.27 words per U-unit, 9.08 words per AS-units and 5.89 words per clauses. The lengths of U-units and AS-units varied more than the length of clauses. The U-unit complexity showed rather complex linking between clauses (mean of 2.45 in C/U), and coordination was used relatively often in the spoken data. Dependent clauses and non-finite clauses were rather infrequent in the spoken data (means of 0.34 and 1.67, respectively).

The complexity of the two modes of production was compared at group level by examining the measure pairs (see Table 1). As mentioned above, the spoken measures of C/AS and Coord/AS, and their written counterparts of C/T and Coord/T were calculated to compare the traditional comparative units with the U-unit in the measures of unit complexity and coordination. Therefore, the total number of measure pairs examined was nine.

Measures compared	Z	Sig.
W/S - W/U	-1.590	.112
W/T - W/AS	-3.375	.001**
W/CWr - W/CSp	-1.502	.133
C/S - C/U	-.849	.396
C/T – C/AS	-3.332	.001**
Coord/S - Coord/U	-2.680	.007**
Coord/T – Coord/AS	-1.677	.094
DC/CWr - DC/CSp	-2.504	.012**
NonFWr - NonFSp	-3.149	.002**

Table 4: Spoken and written language measures compared

Table 4 shows the statistical significance of the Wilcoxon signed-ranks tests used to compare the measures. What follows is a separate discussion of the length, ratio and intra-clausal measures. Figure 1 shows the comparison of the length measures.

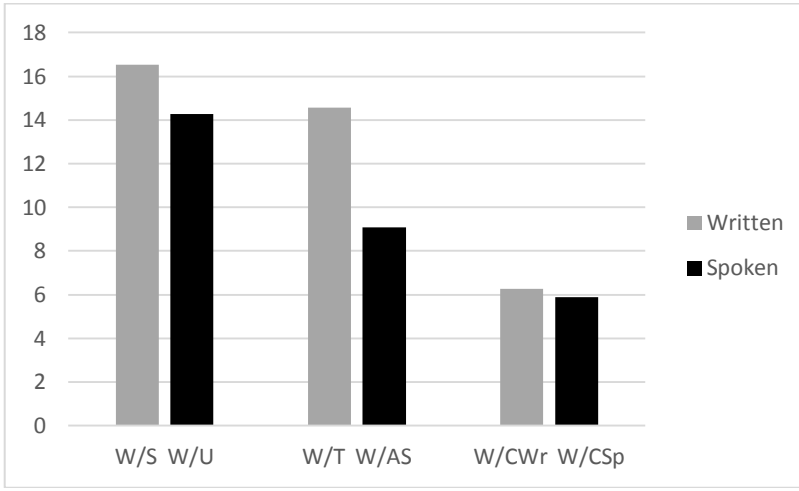


Figure 1: Means of length measures

As can be seen in Figure 1, all length measures implied greater complexity in the written mode. The difference was clearest between T-units and AS-units, the mean lengths being 14.57 and 9.08, respectively. The mean length of a single sentence was 16.53 words, whereas the mean length of the U-unit was 14.27. The difference between the clause lengths (mean length of 6.25 words per clause in the written and 5.89 words per clause in the spoken production) was notably smaller. The measure of mean length of T-unit vs. AS-unit was the only length measure that showed a statistically significant difference (p=0.001) between the modes of production (see Table 4).

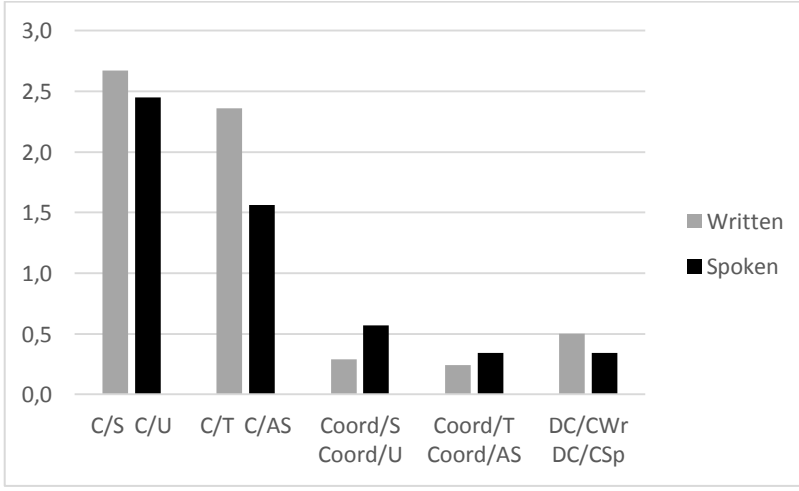


Figure 2: Means of ratio measures

Figure 2 presents the means of the ratio measures. Once more, the written samples were more complex than the spoken samples. The written complexity ratios were 2.67 (sentence complexity ratio, C/S) and 2.36 (T-unit complexity ratio, C/T), whereas the spoken complexity ratios were 2.45 (U-complexity ratio, C/U) and 1.56 (AS-complexity ratio, C/AS). As was the case with the length-based measures, using the U-unit in segmenting the data brought the spoken complexity closer to the written complexity.

The spoken production contained more coordination than the written production. In the measure pair of coordinate clauses per sentence (Coord/S, mean of 0.29) vs. coordinate clauses per U-unit (Coord/U, mean of 0.57), the difference was somewhat bigger than in the pair of coordinate clauses per T-unit (Coord/T, mean of 0.24) vs. coordinate clauses per AS-unit (Coord/AS, mean of 0.34). Once again, the difference between the AS-unit and T-unit was not as evident as when using the sentence and the U-unit categories as comparative units. The dependent clause ratios showed that the written productions (DC/CWr 0.50) contained a higher ratio of dependent clauses than the spoken productions (DC/CSp 0.34). In the complexity ratios, only the measure pair with comparative units of T-unit and AS-unit had a statistically significant ($p=0.001$) difference. Conversely, in the coordination ratios, only the coordination measure pair with sentence and U-unit as comparative units had a statistically significant ($p=0.007$) difference. In addition, the measure of dependent clause ratio had a statistically significant difference between the modes of production ($p=0.012$).

Lastly, complexity operationalized in terms of the intra-clausal measure was investigated. The measure of the number of non-finite dependent clauses indicated that the written mode of production was clearly more complex than the spoken mode. The mean number of non-finite dependent clauses in the written samples was 4.39, and 1.67 in the spoken samples. The difference in this measure was statistically significant ($p=0.002$).

The greatest differences in the complexity of the production modes were found on the measures of mean T-unit length vs. mean AS-unit length ($p=0.001$), T-unit complexity ratio vs. AS-unit complexity ratio ($p=0.001$), and the mean number of non-finite dependent clauses ($p=0.002$). Therefore, based on these measures, it may be concluded that written production was significantly more complex than spoken production. The greatest similarities were found between the mean clause lengths and the complexity ratios of the sentence and the U-unit. Thus, the clause length of written and spoken production did not differ much. The fact that the complexity ratios revealed a statistical difference between T-units and AS-units, but not between sentences and U-units, indicates that the choice of the segmentation unit affected the results greatly.

5. Discussion

In this section, we will compare the results of our study of the syntactic complexity of L2 speech and writing to earlier studies. First, we will focus on written language complexity. The mean lengths of the written units were 16.53 words per sentence, 14.57 words per T-unit and 6.25 words per clause. These lengths indicate a rather complex use of written language. In Storch and Wigglesworth (2007), the number of words per T-unit was 16.24, and the number of words per clause was 7.73. The numerical difference,

when compared to the results in the present study, is surprisingly small, as the subjects in Storch and Wigglesworth (2007) were university students who had to achieve a certain proficiency level in English. Larsen-Freeman (2006) reports a range of T-unit lengths between approximately 11 and 13 words in the written production by high intermediate learners. The assumed proficiency level of the subjects in the present study was somewhat lower, but the T-unit length indicates somewhat greater complexity. Wolfe-Quintero, Inagaki and Kim (1998: 23–25, 30–32) compared results from various L2 studies on sentence, T-unit and clause lengths. Despite the fact that in the studies the measures were used for measuring fluency, the variation found in the results offers some basis for comparison. In the studies compared, the mean number of words per sentence varied from 8.5 at the lower levels of learners to 23.59 at the advanced level, the mean number of words per T-unit from 6.0 to 23.0, and the mean number of words per clause from 5.20 to 10.83. The lengths of sentence and T-units in the present study can be placed approximately in the middle of these ranges, indicating that the level of complexity of our intermediate-level subjects was, in fact, intermediate. When it comes to the length of clauses, the mean length in the present study was somewhat shorter than the intermediate levels in the studies reported. For instance, according to Sharma (1980), low intermediate learners achieved on average 9.31 words per T-unit and 6.44 words per clause, and high intermediate learners 9.86 words per T-unit and 6.97 words per clause. The clause lengths seemed to be similar to the present study, but T-unit lengths showed a greater difference. Ishikawa (2007) also reported shorter T-unit lengths, ranging from 8.90 to 9.96. However, for instance Larsen-Freeman and Storm (1977) reported that average students had 12.92 words per T-unit, which is closer to the result of the present study. Although Ishikawa (2007) used a different definition of clause, the lengths of clauses, from 6.98 to 7.25, were similar to the mean lengths in the present study.

The ratios for the written production were 2.67 in sentence complexity ratio, 0.29 in coordination per sentence and 0.50 in dependent clause ratio. In Ishikawa (1995), the range of sentence complexity ratio was from 1.41 to 1.68. However, the subject group consisted of low-level learners. The T-unit ratio in the present study was 2.36, which indicated a somewhat less complex use of language than the sentence complexity ratio did. However, the T-unit ratio in the present study was slightly higher than the one in Storch and Wigglesworth (2007) (ratio of 2.10) and considerably higher than the one in Larsen-Freeman (2006) (a range from approximately 1.40 to 1.60 clauses per T-unit). The different definitions for the clause evidently affected the results, as could be seen especially in Ishikawa (2007), where the T-unit ratio varied from 1.27 to 1.37. The coordination ratio in the present study was 0.29. In Beaman (1984), coordinated sentences were the most common type of complex sentences both in written and spoken samples. The amount of written coordination was 0.38, which is somewhat more than in the present study. The frequency index for subordination found in Beaman (1984) was 54.2, which was a sign of frequent use of subordination. Ishikawa's (2007) subjects achieved dependent clause ratios of 0.20 and 0.26, which were considerably lower than the ratios in the present study. The same tendency can be found when comparing the results by Kuiken and Vedder (2007). Their dependent clause ratios were 0.36 for the first year students and 0.40 for the third year students. The main reasons for the variation in the results were the proficiency levels of the subjects and the varying, often inadequate definitions for the clause, among other factors. To reiterate, the inconsistency

in the definitions is an often-stated problem when discussing studies on syntactic complexity.

The mean number of non-finite dependent clauses was 4.39, indicating a rather frequent use of non-finite clauses. Robinson (2007: 209) noted that the increasing complexity in narratives led to a greater use of complex structures, such as infinitival structures. Therefore, it can be stated that the number of non-finite dependent clauses in the written data indicated complex language use. The average number of sentences, for instance, in the written essays was 8.4, and therefore, on average, there was a non-finite dependent clause for every other sentence.

With regard to the spoken language data, the mean lengths for spoken comparative units were 14.27 words per U-unit, 9.08 words per AS-unit and 5.89 words per clause. Tavakoli and Foster (2008) reported that the mean length of the AS-unit in their study varied from 7.72 to 10.86 words. The present study is thus in the mid-section of their range. Halleck (1995) used the T-unit as a length measure in spoken data, and reported a mean length of 8.02 words in the narrative part of the study at intermediate level, which is somewhat shorter than the mean length of AS-unit in the present study. Skehan and Foster (2005) reported a mean clause length of 5.39 to 5.50. Thus, the analysis of this measure in Skehan and Foster (2005) gave similar results with a similar subject group as in the present study.

The ratios in the spoken data were 2.45 in U-unit complexity ratio, 0.57 in coordination per U-unit and 0.34 in dependent clause ratio. The U-unit complexity ratio indicated that clausal linking was rather common in the spoken data. Skehan and Foster (2005) studied clausal linking in their data by examining the ratio of clauses per AS-unit. The AS-unit complexity ratio in their data was between 1.28 and 1.38, which is somewhat smaller than the ratio of 1.56 in AS-unit complexity ratio in the present study. The common linking at clausal level was in accordance with earlier studies accentuating that spoken language can be highly structured, especially when it comes to complexity in clausal linking (see Halliday 1979, 1989). However, the rather infrequent use of dependent clauses in relation to clauses in general indicated that embedding was not as common in the present data as some earlier studies reported (e.g. Beaman 1984: 78). Also Pietilä (1999), who used the analysis of subordination per T-unit in spoken data, found that the ratio of complex T-units was relatively small. Coordination is in general used relatively often in spoken language. Especially in coordination per U-unit in the data, coordination could be seen as a rather frequent way of combining main clauses into larger units. This could be interpreted as the use of less complex language, or simply as evidence for a characteristic of spoken language. Both arguments seem to have been supported by earlier research.

The mean number of non-finite dependent clauses per spoken sample was 1.67, which revealed an infrequent use of non-finite dependent clauses. Beaman (1984: 78) suggested that embedding is frequent both in written and spoken language and in writing there are more non-finite dependent clauses. The present study corroborates these arguments. However, Beaman further suggested that the overall number of dependent clauses was higher in spoken than written production, which claim is contradictory to our findings.

In conclusion, compared to earlier studies, the mean length of sentences and T-units in our study was somewhat longer than earlier studies suggest for intermediate level,

whereas the written clauses were somewhat shorter. The ratio-based measures revealed somewhat more complex language use than that reported in earlier studies. However, this finding must not be accepted without criticism as the varying definitions may have affected the overall results. The length of spoken units was significantly close to the results of earlier studies. The ratio-based measures suggested frequent clausal linking in the spoken data.

6. Conclusion

The purpose of this study was to examine the nature of syntactic complexity in spoken and written L2 production in our sample group and to explore how the choice of the segmentation unit might affect the results. The comparison of the modes showed that, in general, the written mode is more complex than the spoken mode of production. This finding is in accordance with numerous earlier studies on the differences between written and spoken complexity (cf. Tanskanen 2006: 74–80). The modes of production differed significantly on the measures of mean length of T-unit and AS-unit ($p=0.001$), T-unit and AS-unit complexity ratio ($p=0.001$), coordination per sentence and U-unit ($p=0.007$), dependent clause ratio ($p=0.012$) and the number of non-finite dependent clauses ($p=0.002$). The lack of statistical significance in the measures of mean length of the sentence and U-unit, mean length of clauses, sentence and U-unit complexity ratio and coordination per T-unit and AS-unit, indicated that the choice of segmentation unit strongly affected the results, and that spoken language complexity may not be as different from written language complexity as it had been claimed in several earlier studies.

The results support partly the mainstream thinking that the differences of syntactic complexity in written and spoken language are evident, but also the Hallidayan idea that spoken language can be as complex as its written counterpart, although with different aspects of complexity in focus. It seems that even the complexity measured with the use of the same measures in written and spoken production can be closer to one another than earlier studies claimed, which would be against Halliday's notion that different modes are characterized by complexity of different nature. The reason for this seems to be, first of all, the choice of units used in segmenting the data. But as the marginal difference that the measure of mean length of clauses (the means of 6.25 words in written and 5.89 words in spoken production) revealed between the modes indicates, there are rather significant similarities in the complexities of written and spoken production. This is especially intriguing as embedding was often highlighted by researchers who agreed with Halliday (1979, 1989) that spoken production was more complex, however, the analysis of the mean length of clauses in the present study showed similarities in clausal complexity across the two modes.

The individual examination of the samples revealed fairly great inter-individual and intra-individual variation in the present study. Despite the general tendency that writing would be more complex than speech, with certain individual subjects, the spoken production was more complex than their written production. Thus, there should be further studies that would focus on individual variation more attentively. On the basis of the present results, it can be stated that the fundamental differences in the modes of

production result in certain differences in syntactic complexity, but, on the other hand, the placement on the orality-literacy continuum has some effect on the syntactic structures used. In the case of L2 users, the proficiency level in writing and speech has an additional bearing on syntactic complexity. Although the registers of the data types in the present study were rather similar, the style of the task (narrative in the spoken and a more or less argumentative style in the written task) may have influenced the structures that the subjects used.

As the second aim of the present study, a new unit for segmenting spoken data was piloted. This unit was not solely bound to pausing and intonation that, in fact, would often indicate fluency rather than complexity, but it would provide an opportunity to include more syntactic structures that are meant to form a more complex unit. The U-unit seems to bring spoken language complexity closer to written language complexity, and appears to be able to do that more efficiently than the AS-unit does. Therefore, the extent to which spoken and written language complexity differ from each other seems to depend not so much on the measure used, as it does on the units used in segmenting the data. The U-unit might reveal the learner's intended idea better than the traditionally used spoken language units. The fact that learners have frequent and long pauses in their spoken production should not affect the analysis of the syntactic complexity of their spoken language. In addition, as the U-unit allows coordination more efficiently than some other units, it is closer to the concept of a sentence as used with reference to written language.

After this piloting phase, this experimental unit should be examined further. A larger set of data must be analysed before the inter-rater reliability could be efficiently tested. In further studies, a comprehensive qualitative analysis on inter- and intra-individual variability is also needed. However, as one of the aims of the present study was to experiment with the units and measures, this study hopefully functioned as a starting point for discussion and further research. The potential of measuring learner's development is another aspect related to our new unit. This is especially important as the proficiency levels of an individual learner might significantly differ in speaking and in writing. The present study also indicates the potential of future research into using different task types and their possible effects on the results, and, finally, into wider consistent experiments and studies in the two modes of production, speech and writing.

On the basis of this study, it can be concluded that the differences between written and spoken complexity seem to be partly a result of the nature of the mode and partly a result of the choice of theoretical units used in segmenting the samples. Many units used in segmenting spoken data seem to focus too much on the aspect of fluency and cannot be fully adapted to the study of complexity. Therefore, research is needed, both on the units and on their application in the measures, to study more reliably the differences between the modes of production.

References

Bardovi-Harlig K. 1992. A second look at T-unit analysis: Reconsidering the sentence. *TESOL Quarterly* 26 (2): 390–395. DOI: 10.2307/3587016

Baron N. 2000. *Alphabet to Email*. London: Routledge.

Beaman K. 1984. Coordination and subordination revisited: syntactic complexity in spoken and written narrative discourse. In D. Tannen (ed.) *Spoken and Written Language: exploring orality and literacy*. Norwood, N.J.: Ablex: 45–80.

Bergman P. and T. Abrahamsson. 2004. Bedömning av språkfärdigheten hos andraspråkselever. In K. Hyltenstam and I. Lindberg (eds) *Svenska som andraspråk – i forskning, undervisning och samhälle*. Lund: Studentlitteratur: 597–626.

Biber D., S. Conrad and G. Leech. 2002. *Longman Student Grammar of Spoken and Written English*. Harlow: Pearson Education.

Bourdin B. and M. Fayol. 1994. Is written language production more difficult than oral language production? A working memory approach. *International Journal of Psychology* 29 (5): 591–620. DOI: 10.1080/00207599408248175

Brown G. and G. Yule. 1983. *Teaching the Spoken Language*. Cambridge: Cambridge University Press.

Bulté B. and A. Housen. 2012. Defining and operationalising L2 complexity. In A. Housen, F. Kuiken and I. Vedder (eds) *Dimensions of L2 Performance and Proficiency: Complexity, Accuracy and Fluency in SLA*. Amsterdam: Benjamins: 21–46.

Chafe W. 1982. Integration and involvement in speaking, writing and oral literature. In D. Tannen (ed.) *Spoken and Written Language: exploring orality and literacy*. Norwood, N.J.: Ablex: 35–53.

Cleland A. A. and M. J. Pickering. 2006. Do writing and speaking employ the same syntactic representations? *Journal of Memory and Language* 54: 185–198. DOI:10.1016/j.jml.2005.10.003

Ellis R. 2008. *The Study of Second Language Acquisition*. 2nd edition. Oxford: Oxford University Press.

Ellis R. and G. Barkhuizen. 2005. *Analysing Learner Language*. Oxford: Oxford University Press.

Foster P., A. Tonkyn and G. Wigglesworth. 2000. Measuring spoken language: a unit for all reasons. *Applied Linguistics* 21 (3): 354–375. DOI: 10.1093/applin/21.3.354

Gaies S. 1980. T-Unit analysis in second language research: Applications, problems and limitations. *TESOL Quarterly* 14 (1): 53–60. DOI: 10.2307/3586808

Gilabert R. 2007. The simultaneous manipulation of task complexity along planning time and (+/- here-and-now): Effects on oral production. In M. P. Garcia Mayo (ed.) *Investigating Tasks in Formal Language Learning*. Clevedon: Multilingual Matters: 44–68.

Halleck G. 1995. Assessing oral proficiency: A comparison of holistic and objective measures. *The Modern Language Journal* 79 (2): 223–234. DOI: 10.1111/j.1540-4781.1995.tb05434.x

Halliday M. A. K. 1979. Differences between spoken and written language: Some implications for literacy teaching. In G. Page, J. Elkins and B. O'Connor (eds) *Communication through reading: Proceedings of the Fourth Australian Reading Conference Vol. 2*. Adelaide: Australian Reading Association: 37–52.

Halliday M. A. K. 1989. *Spoken and Written Language*. Oxford: Oxford University Press.

Holger D. 2004. *The Acquisition of Complex Sentences*. New York: Cambridge University Press.

Housen A. and F. Kuiken. 2009. Complexity, accuracy and fluency in second language acquisition. *Applied Linguistics* 30 (4): 461–473. DOI: 10.1093/applin/amp048

Housen A., F. Kuiken and I. Vedder. 2012a. Complexity, accuracy and fluency: Definitions, measurement and research. In A. Housen, F. Kuiken and I. Vedder (eds) *Dimensions of L2 Performance and Proficiency: Complexity, Accuracy and Fluency in SLA*. Amsterdam: Benjamins: 1-20.

Housen A., F. Kuiken and I. Vedder (eds). 2012b. *Dimensions of L2 Performance and Proficiency: Complexity, Accuracy and Fluency in SLA*. Amsterdam: Benjamins.

Hunt K. 1965. *Grammatical Structures Written at Three Grade Levels*. Champaign, IL: National Council of Teachers of English.

Ishikawa S. 1995. Objective measurement of low-proficiency EFL narrative writing. *Journal of Second Language Writing* 4 (1): 51–69. DOI: 10.1016/1060-3743(95)90023-3

Ishikawa T. 2007. The effect of manipulating task complexity along the [+/- Here-and-Now] dimension on L2 written narrative discourse. In M. P. García Mayo (ed.) *Investigating Tasks in Formal Language Learning*. Clevedon: Multilingual Matters: 136–156.

Iwashita N. 2006. Syntactic complexity measures and their relation to oral proficiency in Japanese as a foreign language. *Language Assessment Quarterly* 2 (4): 151–170. DOI: 10.1207/s15434311laq0302_4

Kuiken F. and I. Vedder. 2007. Cognitive task complexity and linguistic performance in French L2 writing. In M. P. García Mayo (ed.) *Investigating Tasks in Formal Language Learning*. Clevedon: Multilingual Matters: 117–135.

Larsen-Freeman D. 2006. The emergence of complexity, fluency, and accuracy in the oral and written production of five Chinese learners of English. *Applied Linguistics* 27 (4): 590–619. DOI: 10.1093/applin/aml029

Larsen-Freeman D. and V. Storm. 1977. The construction of a second language acquisition index of development. *Language Learning* 27 (1): 123–134. DOI: 10.1111/j.1467-1770.1977.tb00296.x

Larson-Hall J. 2010. *A Guide to Doing Statistics in Second Language Research Using SPSS*. New York: Routledge.

Leech G., M. Deuchar and R. Hoogenraad. 1982. *English Grammar for Today*. Basingstoke: Macmillan.

Mellow D. J. 2006. The emergence of second language syntax: A case study of the acquisition of relative clauses. *Applied Linguistics* 27: 645–670. DOI: 10.1093/applin/aml031

Norris J. M. and L. Ortega. 2009. Towards an organic approach to investigating CAF in instructed SLA: The case of complexity. *Applied Linguistics* 30 (4): 555–578. DOI: 10.1093/applin/amp044

Ortega L. 2003. Syntactic complexity measures and their relationship to L2 proficiency: A research synthesis of college-level L2 writing. *Applied Linguistics* 24 (4): 492–518. DOI: 10.1093/applin/24.4.492

Ortega L. 2009. *Understanding Second Language Acquisition*. London: Hodder Education.

Pallotti G. 2009. CAF: Defining, refining and differentiating constructs. *Applied Linguistics* 30 (4): 590–601. DOI: 10.1093/applin/amp045

Pica T., L. Halliday, N. Lewis and L. Morgenthaler. 1989. Comprehensible outputs as an outcome of linguistic demands on the learner. *Studies in Second Language Acquisition* 11 (1): 63–90. DOI: 10.1017/S027226310000783X

Pietilä P. 1999. *L2 Speech: Oral Proficiency of Students of English at University Level*. Anglicana Turkuensia No 19. Turku: University of Turku.

Polio C. 2001. Research methodology in second language writing research: The case of text-based studies. In T. Silva and P. K. Matsuda (eds) *On Second Language Writing*. Mahwah, N.J.: Lawrence Erlbaum: 91–115.

Robinson P. 2001. Task complexity, task difficulty, and task production: Exploring interactions in a componential framework. *Applied Linguistics* 22 (1): 27–57. DOI: 10.1093/applin/22.1.27

Robinson P. 2007. Task complexity, theory of mind, and intentional reasoning. Effects on L2 speech production, interaction, uptake and perceptions of task difficulty. *International Review of Applied Linguistics* 45 (3): 193–213. DOI: 10.1515/iral.2007.009

Scarborough H. S. 1990. Index of productive syntax. *Applied Psycholinguistics* 11: 1–22. DOI: 10.1017/S0142716400008262

Sharma A. 1980. Syntactic maturity: Assessing writing proficiency in a second language. *Language Learning 37*: 469–481.

Silva M. L., V. Sánchez Abchi and A. Borzone. 2010. Subordinated clauses usage and assessment of syntactic maturity: A comparison of oral and written retellings in beginning writers. *Journal of Writing Research* 2 (1): 47–64. DOI: 10.17239/jowr-2010.02.01.2

Skehan P. 1998. *A Cognitive Approach to Language Learning*. Oxford: Oxford University Press.

Skehan P. and P. Foster. 2005. Strategic and on-line planning: The influence of surprise information and task time on second language performance. In R. Ellis (ed.) *Planning and Task Performance in a Second Language*. Amsterdam: John Benjamins: 193–216.

Storch N. and G. Wigglesworth. 2007. Writing tasks: The effects of collaboration. In M. P. García Mayo (ed.) *Investigating Tasks on Formal Language Learning*. Clevedon: Multilingual Matters: 157–177.

Szmrecsányi B. M. 2004. On operationalizing syntactic complexity. *JADT: 7e Journées internationales d'Analyse statistique des Données Textuelles*. Retrieved October 2014 from www.benszm.net/omnibuslit/Szmrecsanyi2004.pdf.

Tanskanen S.-K. 2006. *Collaborating Towards Coherence: Lexical Cohesion in English Discourse*. Philadelphia: John Benjamins.

Tavakoli P. and P. Foster. 2008. Task design and second language performance: The effect of narrative type on learner output. *Language Learning* 5 (2) 439–473. DOI: 10.1111/j.1467-9922.2008.00446.x

Towell R. 2007. Complexity, accuracy and fluency in second language acquisition research. In S. Van Daele, A. Housen, F. Kuiken, M. Pierrard and I. Vedder (eds) *Complexity, Accuracy and Fluency in Second Language Use, Learning and Teaching*. Brussels: Contactforum: 260–272.

Tonkyn A. 2012. Measuring and perceiving changes in oral complexity, accuracy and fluency. In A. Housen, F. Kuiken and I. Vedder (eds) *Dimensions of L2 Performance and Proficiency: Complexity, Accuracy and Fluency in SLA*. Amsterdam: Benjamins: 221–245.

Vyatkina N. 2013. Specific syntactic complexity: Developmental profiling of individuals based on an annotated learner corpus. *The Modern Language Journal* 97 (S1): 11–30. DOI: 10.1111/j.1540-4781.2012.01421.x

Wolfe-Quintero K., S. Inagaki and H.-Y. Kim. 1998. *Second Language Development in Writing: Measures of Fluency, Accuracy, and Complexity*. Honolulu: University of Hawaii Press.

Zhang B. 2013. An analysis of spoken language and written language and how they affect English language learning and teaching. *Journal of Language Teaching and Research* 4 (4): 834–838. DOI:10.4304/jltr.4.4.834-838

PAULA MEEHAN'S *CELL*: THE IMPRISONED DIALOGUE OF FEMALE DISCOURSES

KATARZYNA POLOCZEK
Łódź University
poloczek@uni.lodz.pl

Abstract
The paper discusses Paula Mehan's play *Cell* with focus on the female discourses present in the context of this literary work and the multifold metaphorisation that both the title of the work and the contents invite. The discourses are analysed against the relevant social background and critical literature. The focal types of discourses under discussion involve imagery from maternal and familiar discourse, the "biological" discourse related to hygiene, the sexual discourse, the mock feminist discourse, the discourse of the military and the propaganda of the common good, and the discourse related to the animal world.

Keywords: discourse, feminism, metaphor, Irish studies

1. Introduction

Paula Meehan's play *Cell* (cited as *Cell* henceforth) was first staged in 1999 when the most crucial reforms of the Irish penal system began.[1] The reforms of the Irish prisons were unprecedented on that scale since Ireland's independence.[2] In their article "Imprisonment and the Crime Rate in Ireland," O'Sullivan and O'Donnell (2003)[3] argue that "[b]etween 1995 and 1999 […] the daily average prison population rose by 33 per cent." As pointed out by one of the female characters in Meehan's *Cell* (2000), the rising crime rate was one of the most topical issues during the national elections in the nineties: "DELO: **[**…] They're voting today. And guess what's the biggest issue in this election?

[1] It was in 1999 that The Irish Prison Service came into being and the Prison Authority Interim Board was established to advise it.

[2] In the article "Irish Prisons: Past, Present and Future Challenges," Aylward and Mitchell (2003) notice that under The Prison (Ireland) Act of 1826 Ireland had limited jurisdiction over their prisoners. The Convict Prisons Board of 1854 had the goal to adjust the existing English prison system to the Irish legislation. The Prisons Board existed till 1877, when the General Prisons Board replaced it, and the previous, transitional body was delegalised. The General Prisons Board functioned till 1928, when it was, in turn, incorporated into the Department of Justice. In 1947 the Irish penal system was reformed with "new prison rules" (Aylward & Mitchell 2003) which were applied for a long time.

[3] For the historical background, see also O'Sullivan and O'Donnell (2003) "Imprisonment and the Crime Rate in Ireland."

Crime! Out speciality girruls. I hope you're proud. The papers are full of us. New prisons. That's what the sheep are being promised" (p.18).

New prisons were needed not only because of the rising crime rate but also because the old ones did not meet the European standards. Meehan's play indicates it was high time the measures were to be taken to address the problem of the abominable conditions in which Irish citizens (and non-nationals) were doing the time for their offences. Referring to her visit in 1989 in the older part of the Mountjoy Prison, Christina Quinlan, a Dublin City University academic, and a renowned specialist in the Irish penal system observes that:

> the old Panopticon prison that is Mountjoy Prison [was] modelled on Jeremy Bentham's seventeenth century Panopticon model of imprisonment, with its emphasis on light and, work, segregation, surveillance and control […].We were appalled and shocked at the conditions within the prison. (Quinlan 2004, p. 65)

"The Report To the Irish Government on the Visit to Ireland carried out by the European Committee For Prevention of Torture and Inhuman or Degrading Treatment or Punishment" (1998) points out to overcrowding in Irish prisons (the need for prisons' renovation and "the new facilities for women"), and the need for the better medical care of inmates (the full-time employed doctor and nurses), especially with regard to the mental and psychiatric care (defined "as a matter of urgency"). This is how in her earlier-cited article "A Journey into the Women's Prison," Quinlan (2004) recalls the conditions in Irish women's prison:

> At that time women were imprisoned in one wing of St Patrick's Institution […] 'upgraded' from the old basement of St Patrick's Institution which had served as the women's prison since the 1950s. The prison that women occupied was a corridor of cells on three levels each constructed of cement, steel and wire. (Quinlan 2004, p. 66)

Ironically, new prisons were promised to Irish citizens by A New Ireland's platform. as a "Christmas present." With blatant sarcasm, Meehan makes one of the *Cell*'s incarcerated women comment the national election billboard poster visible from her upper prison bunk:

> LILA: And I can see the top-half of a lamppost with the election poster with your woman's face on it …wait a minute … A New Ireland. Forward to … something. I can't make it out. (*Cell*, p. 21)

Referring to billboard posters, Anita Schirm (2010) rightly notices that "its main function is attract attention and manipulate. As a cultural medium, however, it both transmits artistic and social phenomena and problems" (Schrim 2010, p. 275). The Irish government kept the deadline for the opening of new prisons for women: "On Christmas Eve 1999, the last of the women from the old female prison in St Patrick's Institution were moved into the Dochas Centre, the new, purpose-built female prison at Mountjoy Prison" (Quinlan, 2004, p. 69).

The study of the reports carried out by the Irish Prison Services, availed to the public annually makes one realise that no matter how drastic the *Cell*'s subject might seem at first, its theme is certainly not exaggerated for any dramatic purposes. The issue of drug traffic in Irish prisons, (the female) prisoners' widespread access to any illegal substances, the women's already existing addiction, and the new one, the emotional and physical violence, the sexual abuse of younger women by more hardened criminals, and finally a high suicide rate (see the statistics[4]) − all these pathologies and many other seemed to have lingered on widely at the time when Meehan was writing *Cell*. As regards the specific of female incarceration, Quinlan (2004) elucidates that:

> Some of the most striking aspects of female imprisonment in Ireland are the rates of imprisonment, the recidivism among imprisoned women […] figures published by the Irish Penal Reform Trust estimate current recidivism rates to be in excess of 70% among Ireland's imprisoned women (Quinlan 2004, p.61).

Retrospectively, looking back at the reasons for Irish women's imprisonment, one may notice that:

> Throughout the twentieth century huge numbers of women were imprisoned in Ireland for drunkenness, as were one-third of the 1,000 women imprisoned in 1930. Huge numbers were also imprisoned for simple larceny. The next most notable offences in terms of frequency were soliciting, assault and malicious injury to property. No more than three or four women were in prison in Ireland in any year from 1930 to the present day for the crimes of murder or manslaughter. Drug related offences feature in the recorded offences from 1985. (Quinlan, 2004, p.62).

When we compare the causes for female incarceration with the more recent data provided by Quinlan, one can see the changes in the types of the committed offences: some of them appear too trivial to demand detention, like being imprisoned for "not having a bus ticket while travelling on a bus," or "not having a TV licence" (Quinlan 2004, p. 62). On the whole, Quinlan sums up that these days in Ireland

> [t]he profile of the women in the women's prisons is radically different from the profile of the men in the male prisons. Where there are 3,000 men in our prisons, many of them committed for serious offences, we have 100 women in the women's prisons committed to prison generally for nuisance-type offences. The population of our women's prison is small and unstable in the sense that women come and go often very quickly from the prison. (Quinlan 2004, p.76)

[4] For the exact number of the suicide rate in Ireland between 1990 and 2000 see Council Report CR99 "Suicide in Prisons," the Appendix 2, entitled "Prison Suicide Situation in The Republic of Ireland" at www.rcpsych.ac.uk/files/pdfversion/cr99.pdf

2. The play and its main characters

Meehan's *Cell* has four main female characters: a forty two-year-old drug dealer: Dolores Roche, a shop-lifter Martha Casey (sixteen years younger than Roche), a nineteen-year-old drug addict: Lila Byrne, doing time for drug possession – all three from Dublin, and a newcomer into a cell, the oldest of them, convicted for murder Alice Kane from the county Leitrim (*Cell*, p. 5). In other words, Meehan construes in her play a relatively representative cross-section of the contemporary Irish women's community, portraying female prisoners of the three generations, rural and capital city-located, with the previous criminal records, and first time offenders, coming from dissimilar backgrounds and outlooks on life – all facing the enforced confinement in one *cell*. Against their various backgrounds, the individual stories, different personalities, approaches of the main heroines − the imprisoned dialogue of female discourses stands out with textual vividness.

The function of the narrator in *Cell* is assumed by the VOICE, defined by Meehan as a "neutral female" (*Cell*, p. 5), which means allegedly impersonal but not gender-free. When first staged in the City Arts Centre in Dublin, the VOICE was played by the actress Lisa Tierney-Keogh (*Cell*, p. 4). To some extent, The VOICE's aspired neutrality means to balance the play characters' involvement. The VOICE seems to function like the Greek chorus, unified in its outlook and commentary, but also official and indifferent. Repeating the refrain: "Please state your name and the nature of your request" (*Cell*, p. 47), the VOICE sounds like a dehumanised (penal) machine rather than a live and caring being.

3. Discourses in *Cell*

3.1 The discourse of the biological cell

In *Cell*, Meehan (2000) examines discourses of female imprisonment in the context of the textual confinements of the spatially restricted prison *cell*. To some extent, the theatre, functions as a perfect *Cell* in all the above-mentioned dimensions. As illustrated below, the symbolism of the cell - the theatrical stage limitations works well on many levels. The limitations can be related to the performance, the textual body, the theatre cell, the play's limits, the staging and spatial limits, i.e. the confinements of time and space, setting, and the cast number, cf. Fig. 1.

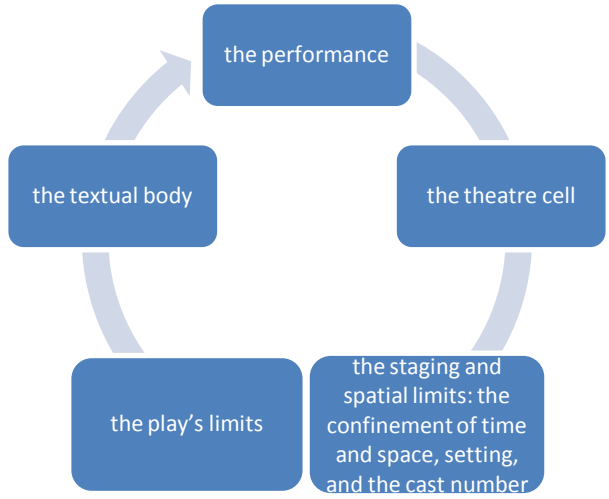


Fig. 1: The cell as …

Following this line of thinking, Meehan's titled play's signifier amounts to the biological c*ell* of the living organism / political system / the state / body politic, an integral part of the larger social whole, ridden from the inside with the collective problems, cf. Fig. 2.

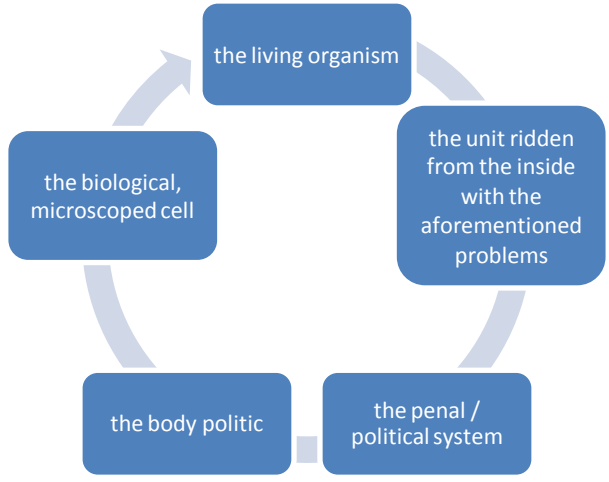


Fig. 2: The cell as …

3.2 The crime discourse as an infectious virus in the healthy social cell

Considering the above, on a metaphorical level, "the prison is the reverse image of the society, an image turned into a threat" (Foucault 1994a, p. 85). Sarcastically, Dolores Roche remarks: "We're their worst nightmare. They want us keep well off the streets. Make them safe for peace and reconciliation" (*Cell*, p. 18). In Meehan's play, the alleged corruption of female convicts is depicted as being perceived as the viral contamination of the supposedly "healthy" part of the society, cf. Fig. 3.

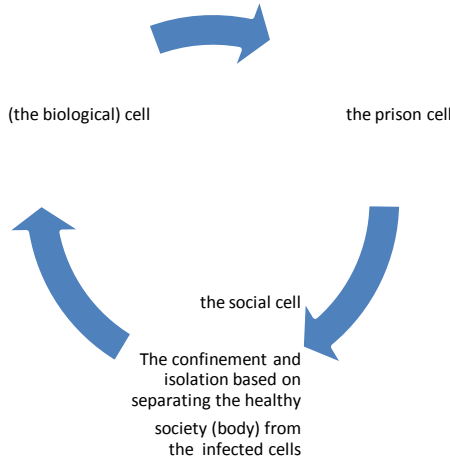


Fig. 3

Hence, the "healthy" Irish society is supposed to be separated and protected from the "diseased," "viral," sick part of the criminals (compare "Disenfranchised. Disgraced. And disgusted" as cited below). An expression "A clean slate" functions like a counterbalance to the earlier implied un-cleanness and the potential evil of female prisoners.

> DELO: (…) Us criminals forfeit the right to vote. Did you know that Alice? Disenfranchised. Disgraced. And disgusted. Eh Lila? There's no one running on a general amnesty ticket. That's who I'd vote for. If I had one. Open the prison doors wide. A clean slate. Start from scratch. (*Cell*, p. 37).

Hence, the incarcerated *cell* is viewed as infected with the criminal virus that disrupts the "healthy" social functioning. As demonstrated by Foucault in his works, the double-edged character of prison serves to mask the fact that other social bodies are also founded on the premises not less normalising and disciplining than those referring to incarceration.

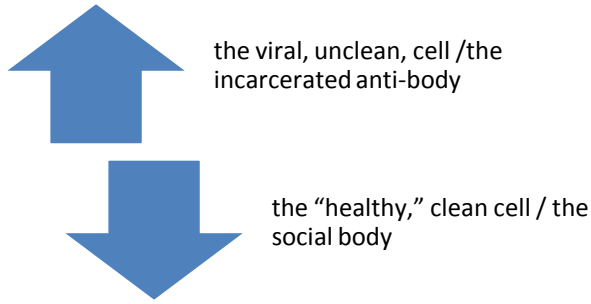


Fig. 4

As demonstrated earlier, the binary opposition of the "clean" and "unclean" social divisions can be organised around the medical discourse of infection, viruses[5] and diseases.[6] With regard to Irish prisons, Long and others indicate the use of injected drugs and the previous, or longer imprisonment − as the most decisive factors increasing the risk of the HIV or HPV infection[7]. The conclusions of the Report are summed up as follows: "Use of injected drugs and infection with hepatitis C are endemic in Irish prisons […]. Only a small number of first time entrants were infected with one or more viruses" (Long at al. 1999). What is more, the viral gender bordering of the prison and society, compartmentalises and labels women as more likely female "anti-bodies" than male "bodies.[8]" In Meehan's *Cell*, "viral" implies being "less powerful" and more docile. "The clean" detainees, like Dolores Roche, have the unquestionable power over the HIV or HPV positive female convicts, cf. the virus-in-the-cell metaphor in Fig. 5.

[5] The Report "Prevalence of antibodies to hepatitis B, hepatitis C, and HIV and risk factors in entrants to Irish prisons: a national cross sectional survey" (1999) issued by Jean Long at al., was conducted in "five out of seven committal prisons in the Republic of Ireland" with the number of 607 recruits remaining in the programme.

[6] The survey was conducted during the time of April the 6th till May the 1st of 1999.

[7] The percentage of the antibodies of hepatitis B was 6%, hepatitis C was 22%, HIV was 2%. The authors of the report indicate the usage of the drugs as the determining factor in the high figures of the tested programme. The injected drug users would amount to 29% of all surveyed in the programme. Their rate of antibodies was the highest: the antibodies of hepatitis B was 18%, hepatitis C antibodies was 72%, HIV antibodies was 6%. 40% of all injecting drug users were recidivists, in the group of the first time offenders only 7% had any previous contact with drugs. For the first time prisoners (30% of the surveyed) the number of the antibodies was 2%, hepatitis C was 3%, the HIV antibodies were not detected in that group at all (Long at al.).

[8] What seems stunning in the aforementioned study is how the gender factor affects the rate of the tested antibodies. The survey states that: "The proportion of women prisoners reported ever injecting drugs was higher than in men (63% *v* 27%)" (Long at al. 1999). The Report proves that compared with men, women were almost three times more likely to test positive hepatitis B core antibodies, seven times more likely to test positive for hepatitis C antibodies, and almost ten times more likely to test positive for the HIV antibodies (Long at al. 1999).

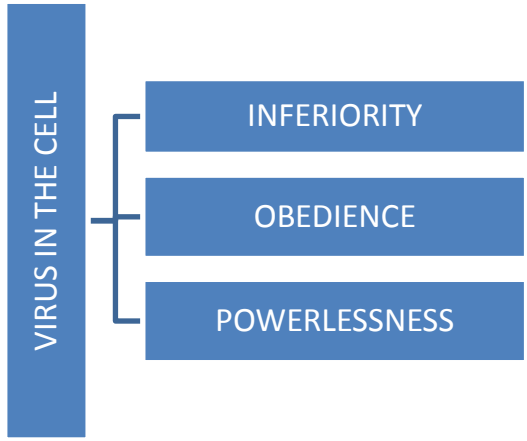


Fig. 5

3.3 The basic hygiene discourse

Dolores Roche's rationale for her self-legitimised leadership in the *cell* and superiority over other female inmates is being "clean" from serious viral infections. Roche expresses her views openly: "Your blood Lila – riddled with the virus. Oh yes. Riddled. Look. *Delo pushes* Lila's *head into bucket*" (*Cell*, p. 12). Martha admits as well "The virus is your cells – invisible. Working away quietly. All the time." (*Cell*, p. 56). One of the non-negotiable rules laid by Dolores is connected with the "basic hygiene" (*Cell*, p. 9) discourse: disposing of the faeces and menstrual blood into the plastic bags, not leaving the women's bodily waste, (apart from urine), in the shared by all bucket.

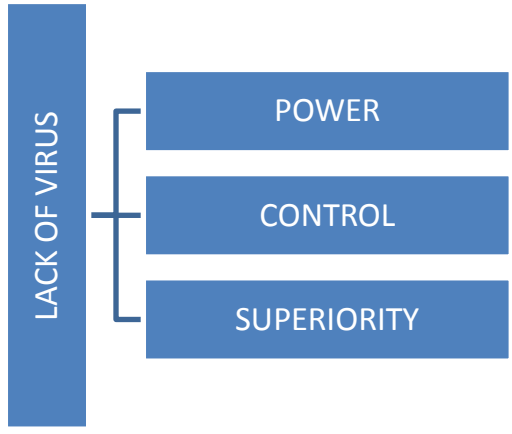


Fig. 6

According to Dolores, the bodily discharges of her infected female inmates put others' life in danger:

> DELO: Now. We had a pact. Right? Don't interrupt! No blood. No faecal matter, or shit as it's known to you scumbags. A co-pi-ous supply of plastic bags in there. Couldn't be easier. This day and age. The big V. It makes sense. You know it does. Lila? Martha? Mar? Lila? It's the principle of the thing, really. A pact. A solemn promise. For the health of all. The good of the many. Basic hygiene. You do see? (*Cell*, p. 9)

Ironically, it is injected drugs that Roche distributes all over the prison that constitute the most blatant violation of her "basic hygiene rule" and the real threat to the health and life of female prisoners. Due to the regular supply of drugs to imprisoned addicts (her own cell mates being given priority in this procedure), Delo sets the rules for all women in her cell.

Repeating Dolores's words, Lila explains the "basic hygiene" discourse to the *cell* newcomer, Alice: "It's to cut down on the chance of infection. From the virus like" (Cell, p. 26). Roche's insistence upon the "basic hygiene" procedure betrays her understanding "of hygiene as a regime of health for populations [that] entails a certain number of authoritarian medical interventions and controls" (Foucault 1994 b, p. 99). In other words, Delo uses the discourse of hygiene to exert the power and get advantage from the fact of being uninfected. Very much in Foucauldian fashion, Roche applies the "hygiene" regime" as an instrument of punishment and control over other female prisoners. Lila recalls how Dolores bullied Annie who committed a suicide: "She was always going on about the smell. She made Annie wash down the whole cell twice a day" (Cell, p. 22). What is more, Dolores's obsessive fear of the infected female bodily waste seems to hint at a broader problem, perceiving the female body itself as the contaminated *cell*.
Not complying with Roche's "basic hygiene" discourse involves punishment: "She made us stand in our bare feet for thirty bleeding hours" (p. 23). This is just a milder example of the penalty exercised by Dolores upon her insubordinate inmates.

3.4 The military and the propaganda discourse

As argued earlier, the women's prison discourses are employed to "incarcerate" *cell* inmates and keep them under control. In her above-cited speech (*Cell*, p. 9), Dolores uses the discourse of the military (see "pact" and "The big V") and the (political) propaganda ("For the health of all. The good of the many"). Pretending to ask for the listeners' approval ("Right?") and appealing to the shared common sense logic ("It makes sense. You know it does," "Couldn't be easier," "It's the principle of the thing, really"), what Roche tries to communicate is her own interests and her own safety. What is more, Roche's discourse betrays overt disdain and disrespect for female inmates ("shit as it's known to you scumbags" "Don't interrupt!"). Being a mixture of indoctrination and manipulation, Roche's speech (*Cell, p.* 9) aims at intimidating female convicts to assure their complicity, cf. Table. 1.

The type of discourse	***Meehan's play idiom***	***Pretended aim***	***Means***	***Real aim***
military	*Pact* *The big V* *When I say jump, I mean jump.* *Don't interrupt!* *I am the longest serving faithful servant*	war on viruses	commands threats terror intimidation	assure obedience and complicity break potential resistance
the propaganda of the common good	*For the health of all.* *The good of the many* *It makes sense. You know it does,* *It's the principle of the thing, really*	common good common sense logic	appeals appellation demanding approval indoctrination	secure one's own interests

Table. 1

Taking all into account, in order to distribute drugs all over the prison, Dolores needs the co-operation of her *cell* inmates in her business. When Martha reports her "Fourteen orders" (*Cell*, p. 16), Roche praises her with words "Well done, o faithful servant" (*Cell*, p. 16). The fragment below illustrates in more detail how Dolores Roche reinforces her superior position in the *cell* group:

> MARTHA: Leave me alone. I'm in the middle of a dream.
> DELO: I'm getting to the bottom of this. Martha Casey, get out of that bed.
> MARTHA: It's too cold. Go away.
> DELO: When I say jump, I mean jump. (*Cell*, p. 8)

The citation proves that Roche does not hesitate to resort to physical violence ("*drags Martha out of the bed by her hair*") and to use the categorical orders and uncompromising commands, in the military jargon style ("When I say jump, I mean jump."). She neither wishes nor seems able to tolerate any forms of disobedience ("I'm getting to the bottom of this") that could defy her authority in the *cell*. Roche justifies her power usurpation with the longest period of the internment (still three years remaining to do out of seven), demanding the privileges from her illegitimate headship.

> DELO: At any second we could be joined by a fourth person. So technically the cell is fairly divided. Couldn't be fairer. And since I am the longest serving member of the club – four years I've resided here – I figure a couple of perks in order. (*Cell*, p.75)

In the *cell* run by Roche, two inmates were found dead, because of suicide or overdose of the drugs provided by her. The unrevealed circumstances of their deaths were connected with their attempted resistance to Dolores's authority. Annie and Lila were both physically and emotionally tormented by Roche, which indirectly contributed to their demise. Before taking her own life, Lila warned Alice about Dolores: "You don't know her. She killed Annie. As good as killed her …. She drove her to kill herself" (*Cell*, p. 44). In the Council Report CR99 "Suicide in Prisons,[9]" in the Appendix devoted to "Prison Suicide Situation in The Republic of Ireland," researchers state that in the year 1999, with what they define as "average daily population" at the level of 2763, with 11000 admissions, in Ireland there were 6 suicide deaths of the sentenced prisoners and 2 on remand. However, as they remark "[t]hese figures do not include deaths from overdose, which have amounted to 1/2 year."

3.5 A mock-feminist discourse

In Meehan's play, a self-acclaimed *cell* leader Roche does not care about the deaths of her inmates, but to avoid accountability or guilt, she rationalises the suicides as being a doomed decision of the weak, emotionally unbalanced drug addicts. Cynically travestying feminist slogans ("A woman's right to choose"), Roche denies any liability for contributing to the women's suicidal deaths, either by drug supply or by bullying:

> DELO: Then Annie died. By her own hand, let it be said. She chose. A woman's right to choose. That's a motto of mine. Look at you now. You've let yourself go. Big time. (*Cell*, p. 34)

The type of discourse	***Meehan's play idiom***	***Pretended aim***	***Means***	***Real aim***
mock feminist	*A woman's right to choose.* *That's a motto of mine.*	feminist empowerment	slogans	denying being co-responsible

Table. 2

[9] According to the authors of "Prison Suicide Situation in The Republic of Ireland," from the beginning of the 1990s till 2000s, in 1996 and in 1999 the total number of suicide prison deaths in The Republic of Ireland was 8 (in other years, it was lower). They admit that "[t]here is no obvious explanation for the steady state of the suicide rate in the Irish prisons compared with British prisons." After The National Group on Deaths in Prisons in Ireland, they record the Irish prisons' overcrowding, "a very high ratio of prison officers to prisoners," "reasonable access to visits," the rise in the "average daily population" and reproach "a serious lack of therapeutic resources."

3.6 The family and the maternal discourse

What is more, defining herself as a "mama sow," Dolores Roche seems to assert authority for her self-usurped position of the *cell* matriarch, claiming to be "the mother figure" to younger female inmates. What she draws upon here is a subverted model of Mother Ireland: abusing and exploiting her "daughters." Being manipulative and aggressive towards her offspring, such a "mother," claims to be well-motivated and act in her children's good:

> DELO: (…) Listen to me Lila. This is all for your own good. Chastisement. Forges character. You don't want to end up a spineless blubber of mush. It hurts me more than it hurts you etcetera etcetera etcetera. You find that strange. Believe me. I'm older and wiser than you. I know my way around this system. You think I like coming the heavy? That I enjoy it? You have to wise up. (*Cell*, p. 34)

In her speech (p.34), Dolores wishes to convince nineteen-year-old Lila that she means well for her even when she beats her up to pulp. In doing so, she uses the linguistic strategies to establish the emotional connection with an addressee and earn her trust ("Listen to me Lila," "Believe me," "You have to wise up,"). Using physical and emotional violence against Lila is supposed to be motivated by Roche's pedagogical care about a younger convict ("This is all for your own good. Chastisement. Forges character."). Dolores tries to get Lila's complicity by appealing to her alleged wisdom and experience ("I'm older and wiser than you. I know my way around this system."). Feigning her sincere concern about Lila's future ("You don't want to end up a spineless blubber of mush"), Roche attempts to veil aggression as her own sacrifice for Lila's good ("You think I like coming the heavy? That I enjoy it?").

The bitter irony of these utterances comes from them being phrased as rhetorical questions, not expected to be answered by anybody. The imprisoned women are aware that Roche manipulates the vulnerable, inexperienced female inmates to secure connivance and collaboration. The tragi-comical effect is achieved in the line "It hurts me more than it hurts you etcetera etcetera etcetera," whose cynical message gets dissolved in the meaningless repetition of the unfinished, senseless sentence.

The type of discourse	***Meehan's play idiom***	***Pretended aim***	***Means***	***Real aim***
maternal familial	*mama sow* *Tried to lie to Mama.* *Have I not been like a mother to both of you?* *Martyred I am.* *We were like a family* *We only had each other.* *I'm older and wiser than you.*	well-motivated act in her children's good pedagogical care family care	violence manipulating emotional needs	set cell the hierarchy discipline and control stifle defiance

The type of discourse	***Meehan's play idiom***	***Pretended aim***	***Means***	***Real aim***
	We had something special, really special.			

Table 3

As demonstrated earlier, what Roche is drawing upon is a pathological discourse of motherhood, according to which, brutality and affection accompany each other and are considered as synonymous. She unscrupulously uses the knowledge about her cell mates' family script so keep the girls under her control. It is likely to assume that young juvenile delinquents, addicts, thieves, living in the street, have not experienced sustaining relations with their mothers and other family members. Lila recalls her short stay at the grandmother (who died soon) as her best childhood memory (*Cell*, p. 28). Martha's recollections are much worse than that: her mother used to sell herself and her daughter's body to anybody willing to pay: "Ms Casey is not just the vernacular! Her mother would let anybody do her for a fiver" (*Cell*, p. 75). Playing upon this traumatic experiences, Roche wishes to create an illusion of the close-knit *cell* connections to give them "maternal care" they have had before. Hence, the deceptive performance of emotional closeness is the second type of drugs that Roche "trades" to *cell* inmates to dominate them. Dolores defines her philosophy as a "fair trade. Hasn't it always been the motto. The family motto so to speak. Have I not been like a mother to both of you? Ingrates?" (*Cell*, p. 10). This is how Roche comments upon the *cell* "family" relations: "Martha and me and Lila – we had something special, really special" (*Cell*, p. 83). Elsewhere, after Lila's death, she assures:

> DELO: No. Hear me out. I *did* love that young one. We were like a family. Who have I? Eh? Answer me that? Who have I? Me boys? They wouldn't know me from Adam. We only had each other. We only *have* each other. (*Cell*, p. 65), emphasis original

In other words, Dolores wishes to promote her self-image in the *cell* as a maternal figure to the younger women, manipulating their emotional needs to make them dependent upon her. Roche's successful demand-supply management visibly betrays weaknesses of the Irish penal system: incarcerated women being left on their own, prone to be victimised by their more deprived inmates. Faced with the lack of efficient rehab programmes,[10] the imprisoned women come up with their own "hidden meaning" version of the penal correction behavioural therapy. Accordingly, Roche is conjuring up for them the make-believe textual discourse of closeness ("we had something special, really special"), neediness and support ("We only had each other. We only *have* each

[10] In her article, Quinlan enumerates several programmes in which she either took part herself or knew of, such as AVP: Quaker-run Alternatives to Violence, a Prion Summer School, *Pathways* organization, Volunteer Befriending etc

other.), the relational familial bonds ("We were like a family"), loyalty and honesty ("fair trade. Hasn't it always been the motto"), fairness ("the cell is fairly divided. Couldn't be fairer"), and women's friendship ["our friendship means nothing?" (*Cell*, p. 70)]. All in all,

> The prison conveys two messages: "This is what society is. You can't criticize me since I only do what you do every day at the factory and the school. So I am innocent. I'm only the expression of a social consensus." That is what we find in penal theory and criminology: prison is not so unlike what happens every day. At the same time, though, prison conveys a different message: "The best proof that you're not in prison is that I exist as a special institution, separated from the others, meant only for those who have committed a violation of the law." (Foucault, 1994 a, p.85)

What is more, in gendered language, for incarcerated women, the family discourse plays a similar role to that the army jargon and its hierarchy does in men's prisons. That shows that both family structures and army operate on the similar assumptions: having their own codes, loyalties, connections, hierarchies etc., and coercive methods by the means of which they discipline and control its members (relatives/soldiers). In this vein, the incarcerated women produce in *Cell* the sheer travesty of the aspired by them values.

3.7 The sexual discourse

On the whole, sadistic and bossy Roche extorts all kinds of needed services (including sexual ones) from her inmates. She does it either in a give-and-take for drug supplies, or by bullying, beating them up, or issuing verbal threats. In her pathological understanding of the family, Dolores (mother) does not seem to have objections to having sex with her "daughter" Lila. The youngest and the most attractive of the *cell* female prisoners, Lila tends to be sexually abused by Roche, who regularly enforces sexual behaviour from her ("DELO: Here. We are taking payment. Fair exchange being no robbery").

> DELO: (…) I perceive my girlies want to cuddle up. Amn't I right?,
> LILA: Please…
> DELO: (…) Pleeeese. On your knees soon. No dope today girlies"
>
> (*Cell*, p. 11)

In Meehan's Cell, the sexual act is performed in a coercive way, Lila is not physically attracted to Dolores, she finds Roche repulsive. Regardless of all, Dolores gives orders Lila to satisfy her sexually. Giving instructions and waiting to get orgasm, Roche does nothing to return pleasure to Lila. There is no affection, desire or mutuality in the sexual contact between these two inmates. Delo is a passive recipient and Lila is a giver: their roles are strictly assigned and non-negotiable. Roche administers her bodily payment as an act of submission, Lila's inability to refuse seems to additionally excite Delo. Roche accepts it as an expression of her absolute power over her *cell* inmates:

Delo goes to unused bank. Lies back and beckons Lila over. Lila begins to fondle Delo. Brings her to climax. As this happens −

DELO: Snuggle in there. Oh yes. That's the spot. X marks the spot. Sex marks the spot. O I like it that. There. That's good. And Snakey likes it too! Talking down the neck of her sweatshirt. You like that don't you Snakey. Yes. Yes. Faster now. Hi ho hi ho off to work we go, go, go, go. Snakey loves it. Yes. Lovely. Lovely. Lovely. (*Cell*, p. 15)

All in all, the idiom in which Dolores provides the sexual instructions to Lila is carried out in imperative commands: ("Snuggle, Faster now, That's good etc"). The reference to the tattooed snake on Roche's body might imply the patriarchal schizophrenia according to which female sexuality is seen as sinful (see the Gospel serpent). On the whole, the sexual act amounts to rape. Like rapists, Roche expects her victims to pretend that they enjoy being sexually violated: "DELO: (…) Innocent yang thang. Do you like that? (*Opens her shirt and begins to sex her up*) You do. You like it. Are you getting jealous Martha? Mammy loves her little titties" (*Cell*, p. 19). In other words, Roche wishes her inmates who prostitute for drugs to pretend the satisfaction from the unwanted sexual contacts with her. She enforces not only the sexual submission but also a declarative one: "Who's my girl?," "That's nice, isn't it?," "Who's your best pal?." (*Cell*, pp. 15 -16). Answering these questions is additionally degrading to sexually enslaved Lila, as she has to further humiliate herself to lie about a degrading situation. Such a torture is likely to evoke in Lila disgust not only to the oppressor (MARTHA**:** Lila…couldn't stand the stink of you. She bleached her fingers after you….She killed herself rather than put up with the smell of you" (*Cell*, p. 72) but also to herself and her own body.

The type of discourse	***Meehan's play idiom***	***Pretended aim***	***Means***	***Real aim***
sexual	*my girlies want to cuddle up* *On your knees soon* *Snuggle in there* *Sex marks the spot* *Yes. Yes. Faster now.* *Yes. Lovely. Lovely. Lovely.* *You do. You like it.* *That's nice, isn't it?*	sexual satisfaction of both	buying sex for drugs blackmail violence bulling threats commands	sexual satisfaction of the recipient assuring domination through sex

Table 4

3.8 The animal discourse

Apart from the military and pathological family discourse (see "Mammy loves her little titties"), the idiom that Roche applies most frequently and willingly in relation to her female cell inmates is the animal discourse.[11] In the play's opening that is how Roche addresses two other imprisoned women from her *cell*:

> DELO: Rise and shine, little piggies. Mama sow has a bone to pick. A bone to pick? A bone to chew! With one of you. (*Cell*, p. 7)

Along the animal conceptual metaphors, Roche refers to incarcerated women in the *cell* as "little piggies," and dogs ("bone to chew"),[12] "A dog. A fucking dog" (p. 29), "doggy woggy here, woof woof. Thanks Delo, says Doggy" (p. 71), "It's the dog eat dog out there" (p. 69), "sleeve bitch…Slither in the grass" (p. 33). Alice talks about Dolores as having "The look you'd get in a dog that goes prowling lambs at night" (p. 43). Roche complains that "I'm surrounded by snakes in the grass" (p. 74), "Snake in the grass" (C59), and then speaking of the "Lamb to the slaughter" (p. 12), "I'm surrounded by puddycats" (p. 17). Giving Lila drugs is defined by her is "feeding the monkey" (p. 13), Delo threatens the addict: "You don't work, monkey doesn't get fed" (p. 13). Martha apologises to Lila for "ratting on" her (p. 23). Giving sex to Roche is referred to as pleasing Snakey: "Come to Snakey. Come on. Snakey wants you" (p. 32). Roche calls herself a cell "mama sow." Considering the above, Dolores textually depicts her inmates as animals, in its culturally derogative way: swine (dirty, filthy), dogs (subordinate and submissive), monkey (senseless and foolish), snakes (cunning, treacherous, disloyal), lambs (victims, human sacrifices).

> DELO: And she expects me to keep her monkey fed. What am I – the Society for the Prevention of Cruelty to Animals? Never-ending source of peanuts? For her greedy monkey? (*Cell*, p.13)

The type of discourse	***Meehan's play idiom***	***Pretended aim***	***Means***	***Real aim***
animal	*little piggies* *bone to chew* *A dog. A fucking dog* *Thanks Delo, says Doggy* *sleeve bitch…Slither in the grass*	the non-human ways of the world	Animal metaphors	denying one's humanity humiliation justifying abuse and violence

[11] See Kirkpatrick, K. (2010). "Between country and city: Paula Meehan's ecofeminist poetics." In Ch. Cusic (Ed.), *Out of the earth: ecocritical readings of Irish texts* (pp. 108-126). Cork: Cork University Press.

[12] Compare the earlier cited "The country's gone to dogs" (p. 37).

The type of discourse	***Meehan's play idiom***	***Pretended aim***	***Means***	***Real aim***
	snakes in the grass *Lamb to the slaughter* *Puddycats* *feeding the monkey* *monkey doesn't get fed* *Snakey wants you* *greedy monkey* *the sheep are being promised*			

Table 5

3.9 The post(human) discourse and the revival of humanistic one

The detention discourses are the language of post(humanity): the Irish prison depicted in Meehan's play represents the non-human reality. Kathryn Kirkpatrick (2010) notices that

> Paula Meehan presents four Irish women whose only access to the nonhuman world of nature is through a prison window.… Delo dominates and exploits her younger cell-mates by using their drug addictions to force them to perform sexual favours and smuggle messages. Making use of the nonhuman in the same way she makes of humans, Delo dissociates herself from her most brutal acts of violence towards her cell-mates by calling on Snakey, a large tattooed on her arm, to terrorise them: her cell-mates, on the other hand, display a marked sensitivity to the natural world. (*Cell*, p. 108)

It is only after the arrival of Alice, a simple country woman who acts upon long forgotten in Dolores-controlled *cell* rules of decency and fairness that a new quality is introduced to the incarcerated women's lives. The message of hope that Kane brings with herself to the prison becomes the challenge to the terror and cruelty established by Roche. Alice cares about Lila and Martha and wishes to set them free from Dolores's corruptive influence. Aware of that, Roche treats Kane as a contender who needs to be taught her place in the *cell* hierarchy. But acting upon a moral code Alice cannot be subdued, bribed or easily placated. With her philosophy of love, and clear division between good and evil, Alice manages to defy Roche's power. Kane, a mother devoted to her children, bestows real, and not manipulative, maternal affection over female inmates in the *cell*.

> ALICE: Now child. It's coming to Christmas. It's a very sad time for all of us. We're all mothers. My sons gone from me. Your jasmine away from you. All the lost children. There's enough grief in this prison to drown the whole city. (*Cell*, p. 69)

It is precisely on the authority of motherhood discourse that Kane challenges Roche, making the *cell* inmates reveal Dolores's secret: the drugs that she sells killed her own children. "Yes! Killed them. As good as. Overdose. Suicide. Who gave them the gear? Who got them started on the stuff? Now. Take your filthy hands off me" (*Cell*, p. 73). And she concludes: "you're steeped in death. It hangs around you like a cloud" (*Cell*, p. 73).

As demonstrated above, the arrival of Alice re-introduces the balance of justice and harmony in the imprisoned women's lives. The blatant irony stems from the fact that Kane is convicted for murder that she really committed. Hence, in the eyes of the law, she is supposed to be the most corrupted and evil of all inmates in the *cell*. Meehan's sarcastic distance to this assumption is brilliantly rendered in the derisive passage below, mocking both the gender (incorrect ending of the murderer/murderess) and criminal stereotypes:

> MARTHA: Wait for it. A murder.
> DELO: You mean a murderess.
> MARTHA: What? That's what I heard anyway. She stabbed a guy. Dead.
> DELO: A real criminal at last. Thank God. I'm surrounded by puddycats.
> MARTHA: *(Smoking)*I feel human again. (*Cell*, p. 17)

The conversation's self-ironic ending "I feel human again" uttered by Martha may have many meanings. On one hand, in comparison to a murder convict, a shop-lifter experiences a sort of moral superiority (hence gaining an upper hand in the scale of "humanity,"). On the other hand, after being compared by Roche to the animal, Martha begins to realise her personhood. However, what seems most foreshadowing Casey's future fate: due to Alice's help, Martha is going to "feel human;" clean of drugs and able to experience attachment to her children.

Alice, (the bogwoman, as she is dismissively labelled by Dubliners from the *cell*), turns out to be the only one who successfully defies Dolores's authority. Calling younger women in *cell* daughters, she does everything to protect them against Roche's abuse, literally everything – including taking on herself the killing of Dolores. Alice supports Martha in her plans to regain the custody over her daughter Jasmine and "come clean" (p. 59) of drugs. Due to Kane's care, Casey seems likely to overcome her addiction and go through the rehabilitation process. However, not wanting to lose an accomplice in the drug business, Roche by trickery pushes Martha back into addiction. It was after this drug incident that the fight between them began, ending with Dolores being stabbed.

The type of discourse	***Meehan's play idiom***	***Pretended aim***	***Means***	***Real aim***
humanistic	*I feel human again* *All the lost children.* *We're all mothers.* *There's enough grief in this prison to drown the whole city.*	none	pity compassion love	regain one's humanity

The type of discourse	*Meehan's play idiom*	*Pretended aim*	*Means*	*Real aim*
	Will nobody help us?			

Table 6

The similar scenario happened earlier to Alice Kane; in self-defence, she stabbed a man who was harassing her for a long time, intimidating with threats, slaying her dog and making threats to her own life. The man was Alice's neighbour who wanted to seize her land she inherited after her husband's death. Before the murder, Alice sought help from the local authorities, politicians, etc. – but nobody wanted to help her. Martha comments about Kane's situation as follows: "Bastards. Doctors and cops and priests and fucking teachers. All fucking bastards" (*Cell*, p. 57). Alice could add to this list lawyers and MPs who failed her as well. So did the penitentiary services. When Lila was dying, nobody called a doctor. One may conclude the exclamation that Kane's screams when she fears about Casey's life: "Will nobody help us?" (*Cell*, p. 87).

4. Conclusion

To sum up, cliché and naïve as it may be to blame the system (society?), for the failures and wrongdoings of particular individuals, one cannot turn a blind eye to the helplessness and solitariness of the incarcerated women depicted in Meehan's drama. Like Quinlan, Meehan also worked voluntarily with women in Irish prisons, and she got to know their problems well. That is why her play neither suggests a way out, nor does it give some easy hope. *Cell* terminates with a narcotic vision of the New Prison, resembling the paradise-like reality ["Robinson's New Ireland reality is as hidden from her as Eden itself" (Kirkpatrick 2010, p.108), uttered by a raving Martha, just after killing Dolores. Hence, unnecessary violence seems to escalate and no new edifices appear likely to, by magic, quickly solve this vicious circle's entanglement. In Meehan's *Cell*, women are "imprisoned" not only by gender, social and criminal stereotypes but also, or above all, by the discursive power of language, as it is applied against them. The language used by Meehan clearly demonstrates its actional power[13], the fact that words are operative in creating and maintaining the network of social relations.

Perceived from such a perspective, prisons may be seen as much more than simply "a general means of punishment" or "the essential core of the entire penal system" (Foucault 1994c, pp. 224-225). Indeed, one begins to notice that "to get a better understanding of what is punished and why, …[one has to] ask the question *how* does one punish?" (Foucault 1994c, p. 224). Those questions, together with the questions

[13] Cf. Witczak-Plisiecka 2013a, 2013b for an overview of relevant literature and discussion; Poloczek 2010 for an account of injurious speech acts.

concerning linguistic construal of reality, precisely need to be considered when having a closer look at the examined play.

References

Aylward, Sean, & Mitchell, Jim. (2003, December 1). "Irish prisons: past, present and future challenges." Web. Available: www.thefreelibrary.com › ... › December 1, 2003. [15 August 2013].

Batt, Vivienne. (Ed.). (2004). *Women's studies review*. "Women's activism and voluntary activity" 9. Galway: Women's Studies. Print.

Foucault, Michel. (1994). *Power: Essential Works of Foucault 1954 – 1984* (Vol. 3). (Ed.). James D. Faubion. (Robert Hurley at al., Trans.). London: Penguin Books. Print.

Foucault, Michel. (1994a). "Truth and juridical forms." In Foucault, Michel. (1994). *Power: Essential Works of Foucault 1954 – 1984* (Vol. 3). (Ed.) . James D. Faubion. (Robert Hurley at al., Trans). (pp. 1-89). London: Penguin Books. Print.

Foucault, Michel. (1994b) "The politics of health in the eighteenth century." In Foucault, Michel. (1994). *Power: Essential Works of Foucault 1954 – 1984* (Vol. 3). (Ed.) . James D. Faubion. (Robert Hurley at al., Trans). (pp. 90-105). London: Penguin Books. Print.

Foucault, Michel. (1994c). "Questions of method." In Foucault, Michel. (1994). *Power: Essential Works of Foucault 1954 – 1984* (Vol. 3). (Ed.). James D. Faubion. (Robert Hurley at al., Trans). (pp. 223-238). London: Penguin Books. Print.

Irish Prison Service. "Keeping drugs out of prisons: drugs policy and strategy." Web. Available: www.iprt.ie/contents/1292, [10 June 10 2013].

Kirkpatrick, Kathryn. (2010). "Between country and city: Paula Meehan's ecofeminist poetics." In Christine Cusic (Ed.), *Out of the earth: ecocritical readings of Irish texts* (pp. 108-126). Cork: Cork University Press. Print.

Long, Jean at al. (1999). "Prevalence of antibodies to hepatitis B, hepatitis C, and HIV and risk factors in entrants to Irish prisons: a national cross sectional survey." Web. Available: www.bmj.com/content/323/7323/1209.full.pdf [21 May 2011].

Meehan, Paula. (2000). *Cell: A Play in Two Parts for Four Actors and a Voice*. Dublin: New Island.

O'Sullivan, Eoin & O'Donnell, Jim. (2003). "Imprisonment and the Crime Rate in Ireland." *The Economic and Social Review* 34, No.1 Spring. Web. Available: www.esr.ie/Vol34_3OSullivan.pdf..[15 August 2013].

Poloczek, Katarzyna (2010) "'Injurious Speech:' Gendering Verbal Violence in Media Discourse". In: *Pragmatics of Semantically-Restricted Domains* [*Pragmatic Perspectives on Language and Linguistics, Vol.2*], ed. by Iwona Witczak-Plisiecka. Newcastle: Cambridge Scholars Publishing, 247– 259.

Quinlan, Chistina. (2004). "A Journey into the women's prison." In Vivienne. Batt (Ed.), (2004). *Women's Studies Review*. "Women's Activism and Voluntary Activity" 9. Galway: Women's Studies, 59- 78. Print.

Schirm, Anita (2010). "A few comments on the pragmatics of billboard posters." In: *Pragmatics of Semantically-Restricted Domains* [*Pragmatic Perspectives on Language and Linguistics, Vol.2*], ed. By Iwona Witczak-Plisiecka. Newcastle: Cambridge Scholars Publishing, 275– 296.

The Council Report CR99. (February 2002). "Suicide in Prisons." Appendix 2. "Prison Suicide Situation in The Republic of Ireland." Web. Available: www.rcpsych.ac.uk/files/pdfversion/cr99.pdf. [21 May 2011].

The Council Report CR99. (February 2002). "Suicide in Prisons." Web. Available: www.rcpsych.ac.uk/files/pdfversion/cr99.pdf. [1 March 2012] [14].

The Report To the Irish Government on the Visit to Ireland carried out by the European Committee For Prevention of Torture and Inhuman or Degrading Treatment or Punishment (CPT) From 31 August To 9 September 1998. Available online: www.cpt.coe.int/documents/irl/1999-15-inf-eng.pdf. [10 November 3 2014].

Witczak-Plisiecka, Iwona (2013a) *From Speech Acts to Speech Actions*. 2013, Łodź: Lodz University Press.

Witczak-Plisiecka, Iwona (2013b) "Speech action in legal contexts". In: *Pragmatics of Speech Actions* [Handbook of pragmatics; Part 2], ed. by Marina Sbisa and Ken Turner, Berlin/Boston: Mouton de Gruyter, pp. 613-658.

About the author

Katarzyna Poloczek works as a senior lecturer at the University of Lodz. Her research area involves modern literature in English, contemporary fiction and poetry, specifically Irish women's poetry, Irish studies, film and media studies, gender studies. Her doctoral dissertation analysed the works by key contemporary Irish women's poets. Her post-doctoral book *Towards Female Empowerment − The New Generation of Irish Women Poets: Vona Groarke, Sinéad Morrissey, Caítriona O'Reilly, and Mary O'Donoghue* is coming out in print in 2015.

[14] The percentage of the antibodies of hepatitis B was 6%, hepatitis C was 22%, HIV was 2%. The authors of the report indicate the usage of the drugs as the determining factor in the high figures of the tested programme. The injected drug users would amount to 29% of all surveyed in the programme. Their rate of antibodies was the highest: the antibodies of hepatitis B was 18%, hepatitis C antibodies was 72%, HIV antibodies was 6%. 40% of all injecting drug users were recidivists, in the group of the first time offenders only 7% had any previous contact with drugs. For the first time prisoners (30% of the surveyed) the number of the antibodies was 2%, hepatitis C was 3%, the HIV antibodies were not detected in that group at all (Long at al.).