ABSTRACT: This article explores the compatibility of Functional Discourse Grammar with Tomasello’s (2003; 2008) Social-Pragmatic theory of language acquisition. Section 1 follows Boland (1999, 2006) and others who have claimed that theories of language should be constructed in such a way that they are compatible with what is known about the process of first language acquisition. In section 2, I will briefly explore the main approaches to the study of language acquisition in current linguistics and I will claim that a functional theory of language should preferably be compatible with a constructivist approach, given the paramount role they confer on social, communicative and cultural factors in language acquisition. The paper will then concentrate on examining the compatibility of FDG with Tomasello’s (2003; 2008) theory of language acquisition. My conclusion will be that many aspects of the internal architecture of FDG and the analytical tools employed in the model find direct correlate in Tomasello’s work and thus FDG seems to be in an excellent position to meet Boland’s standard of acquisitional adequacy.

1 Why acquisitional adequacy?

Mackenzie (2012, p. 421) notes that “although not mentioned as such in the major presentation of the new theory that grew out of FG, Functional Discourse Grammar (...), adequacy continues to be regarded in FDG work as a touchstone of progress in theoretical and descriptive research.” In particular, Dik’s (1997) standards of pragmatic, typological and psychological adequacy “still are held in high regard by practitioners of FDG.”

The years between the publication of Dik (1997) and the first presentation of (Functional Discourse Grammar; FDG) in Hengeveld (2004) saw the addition of a new standard, that of acquisitional adequacy introduced by Boland (1999) and subsequently elaborated in her dissertation (BOLAND, 2006) on the acquisition of TMA systems (see Hengeveld and Pérez Quintero, 2001). Boland claims that the standards of communicative (pragmatic) and psychological (cognitive) adequacy are explanatory and constrain “the framework within which a theory can be developed” (2006, p. 17). Hengeveld and Pérez Quintero (2001, p. 104) further argue that the standards of typological and acquisitional adequacy are descriptive, as they “evaluate a theory of grammar in terms of its capacity to correctly describe a wide range of linguistic facts.” Within explanatory standards, Boland (2006, p. 19) sees a clear relation between cognitive and communicative factors as they both impose restrictions on adult and child grammars:

language acquisition is dependent on cognitive as well as communicative factors, just as similarities between adult languages are dependent on cognitive as well as communicative factors. (...) If the grammatical model is in accordance with the standards of communication and cognition, it should not only supply correct descriptions of languages of the world but also of the different stages within the process of language acquisition.

As a corollary, Boland (2006, p. 19) claims that “A grammar of adult speech should be rejected [my emphasis, DGV] if it is incompatible with the developmental stages and psychological processes of language acquisition.”

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1 Additional standards have been proposed in the functionalist literature, including discoursal, sociocultural, diachronic and computational adequacy (see discussion in Butler and Gonzámez García 2014: 1343-1348).
Additionally, in recent meta-theoretical work, Butler and Gonzálvez-García (2006, p.76) explicitly claim that FDG adheres to the standard of acquisitional adequacy and to a constructivist view on language acquisition:

FDG, following the work of Boland (1999), commits itself to a criterion of acquisitional adequacy, which it sees, together with typological adequacy as being intralinguistic and descriptive in nature, as opposed to psychological and pragmatic standards, which are extralinguistic and explanatory (...). Although this is not explicitly stated, we may confidently assume that a constructivist account of acquisition would be favoured.

There thus seems to be certain consensus as to the need for a theory of language, and for FDG in particular, to be compatible with well-established findings in the field of language acquisition. The question that I want to answer then is whether FDG as a theory of grammar is indeed learnable, and whether the constructs postulated by the theory are reflected in the stages of language acquisition. Particularly interesting is the order of acquisition of the grammar. For example, if we had evidence that the morphosyntactic properties of languages are acquired before representational or pragmatic properties, the top-down orientation of the FDG architecture might prove incompatible with first language acquisition.

In the following section I will briefly touch upon the main approaches to language acquisition in current linguistic theory and I will identify the one which is more likely to be compatible with a functional methodology to the study of language.

2 Approaches to language acquisition

The main theoretical trends in language acquisition research very much coincide with mainstream approaches in current linguistic theory. On the one hand, formalist approaches to grammar have inspired a tradition in language acquisition studies which relies on the notions of the poverty of the stimulus, Universal Grammar and the Language Acquisition Device.

The poverty of the stimulus argument, as put forward by Chomsky in his book *Aspects of the theory of syntax* back in 1965, amounts to what is stated in the following quote from Jackendoff (2002, p. 82):
Aspects continually returns to the assertion that the primary linguistic data available to the language learner underdetermine the choice of grammar, and therefore is insufficient to induce the grammar.

In other words, the argument goes that the evidence presented to the child is so limited and fragmented that it cannot be enough to account for the process of language acquisition given the complexity of the linguistic system. This, in Chomskyan terms, is what calls for a specialized Universal Grammar, which can be defined as an ‘initial state’ in language acquisition which is genetically present in human beings (and only in human beings) and which provides the abstract features all languages have in common. Individual languages are then acquired on the basis of this initial state and a Language Acquisition Device, which can be conceived of as a strategy for constructing a grammar on the basis of the input received.

In functional linguistics, on the other hand, the tendency is to make use of innate explanations for first language acquisition only as a last resort. This is nicely put in the following quote by Dik (1997, p. 7):

> From a functional point of view on the other hand it is certainly much more attractive to study the acquisition of language as it develops in communicative interaction between the maturing child and its environment and to attribute to genetic factors only those underlying principles which cannot be explained as acquired in this interaction.

This is in indeed the strategy followed in what seems to be the most vigorous alternative to the Chomskyan approach to language acquisition, the work of Michael Tomasello (2003; 2008).

Tomasello (2003, p 3) argues that between the age of 9 to 12 months children develop a set of general cognitive abilities which are crucial in the process of language acquisition. These include the following two, intention-reading and pattern-finding:

- **Intention-reading**: the ability to share with others attention to objects and events and the ability to direct others to attend to objects and events. These serve to create a joint attentional frame which facilitates the identification of the referent for a given linguistic unit.
• **Pattern-finding**: the ability to form categories and create patterns of perception and action. This is necessary to identify grammatical patterns and structures.

These two social-cognitive abilities, together with the structured social world into which children are born, which is assumed to be full of rich patterns of cultural interaction, constitute the backbones of Tomasello’s Social-Pragmatic theory of language acquisition.

Additionally, Tomasello explicitly claims that cognitive-functional models of language provide a sound theoretical basis to the language acquisition process. In particular, he claims that usage-based and constructionist approaches (Goldberg’s Construction Grammar or Langacker’s Cognitive Grammar) which defend that language is symbolic in nature and that language structure emerges from language use, are fully compatible with his view of the acquisition process.

Even though FDG does not claim to be a usage-based or constructionist model, there are obvious points of contact between both, so it is worth examining the compatibility of FDG with Tomasello’s theory of language acquisition, which as I have claimed earlier, seems to be the most robust alternative to generative-based approaches. It should also be stressed that I do not intend to evaluate the adequacy of Tomasello’s theory of language acquisition, but, merely, the compatibility of this model with FDG.

### 3 The FDG architecture: is it learnable?

FDG proposes a grammar architecture which distinguishes four level of linguistic analysis: the Interpersonal, the Representational, the Morphosyntactic and the Phonological Levels.

Utterances are constructed in a top-down fashion, starting from the speaker’s communicative intention and working down to articulation. This communicative intention triggers the process of Formulation which is fed with primitives from the grammar, and forms interpersonal and representational structures. The process of Encoding converts these representations into the appropriate morphosyntactic and phonological structures for every language.

One point of much interest in the present context is the fact that FDG is defined as the grammatical component of a wider theory of verbal interaction. This is
the reason why the grammar is linked to a Conceptual, a Contextual Component and to an Output Component. These components are not grammatical, but are included in the model to the extent that they serve to explain linguistic processes.

As mentioned earlier, Tomasello (2008, p. 73) argues that children bring a number of crucial cognitive skills to the task of acquiring a language. Additionally, human beings seem to have intrinsic social motivations for helping others and for sharing emotions with others. The combination of these two, Tomasello claims, serves to create a common conceptual ground between interlocutors, which is the key to the entire process of language acquisition.

A natural question which immediately arises itself is how children can construct common ground before using language. Tomasello’s answer is that they do so by gesturing, a strategy which in his view has a key role in the initial stages of language acquisition. In particular, Tomasello (2008, pp. 60-71) refers to pointing and pantomiming, which he characterizes as ways to direct somebody’s attention or imagination to some referent and thus create common ground with their interlocutors. This common ground is obviously part of the extralinguistic, typically perceivable, context, which is relevant for the communicative interaction.

This ability to create common ground is thus the basis for the children’s directing their interlocutors’ attention to a given referent, and for understanding their interlocutors’ communicative intentions. It thus underlies the beginning of the language acquisition process.

The introduction of a Contextual Component in FDG is consequently a more than welcome move if the theory is to claim compatibility with Tomasello’s proposal. Significantly, Mackenzie (2012; 2014) has shown that the theory’s Contextual Component is compatible with this notion of common ground, as long as one assumes a dialogic perspective in communication analysis, which involves not only the individual language production but also language interaction among participants. In particular, Mackenzie (2014, p. 252) claims that the Contextual Component can be seen as a public entity which is shared by, or at least available to, the speech participants in the ongoing interaction. In his own words (MACKENZIE, 2014, p. 257):

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2 Significantly, both Tomasello and Mackenzie take the notion of common ground from the work of Clark (1996).
The implication for FDG is that verbal interaction should no longer be modelled simply as the transfer of information from speaker to addressee (…) While it is undeniable that language users have individual aims, these cannot be achieved individually, but only by working together on the communal aim of participating in the joint creation of a consensus about the ongoing dialogue. The shared Contextual Component arises from this joint project.

Tomasello’s approach to language acquisition crucially relies on the interaction between infants, caregivers and context. In that sense, language acquisition is necessarily dialogic and therefore the creation of shared or common ground in the Contextual Component is necessary. This places the initial stages of human communication in a Gricean framework of cooperative communication (see figure Norms of Cooperation and Cooperative Reasoning in Tomasello, 2008, p. 98).

Another relevant property of FDG is the introduction of the Discourse Act as the basic unit of linguistic analysis. Discourse Acts, which are defined after Kroon (1997, p. 20) as “the smallest identifiable units of linguistic behaviour” combine into bigger units called Moves, defined by the same author as the “minimal free unit of discourse.”

As mentioned earlier, children begin their communicative behaviour by gesturing. Gesturing, Tomasello claims, is communicatively powerful if one accepts the added value provided by the shared context and inferred intentionality. Gestures may be accompanied by acoustic signals and, in a later stage, by linguistic signals, typically holophrases. It would seem reasonable to hypothesize that children initial communicative acts of pointing and pantomiming are Moves containing referential or ascriptive Subacts. These Moves, which do not contain language as we know it, are meaningful in the context of shared common ground and serve to create common ground themselves by directing attention to a given referent in the relevant context. In the words of Tomasello (2008, p. 124): “When infants produce points, there is very good evidence that they intend for the other to attend to a referent in their common ground.”

Additionally, Tomasello claims that pantomiming serves to direct the interlocutors’ attention to abstract referents. A crucial difference between pointing and pantomiming is that the latter tends to be iconic and representational in a way that pointing is not. Consider the following example in which a child pantomimes an action (TOMASELLO, 2008, p. 148):
At age 13 months, A playfully pantomimes biting to indicate an action he was not supposed to do on a particular object. 

*Gloss:* attend to my biting; that’s what I’m going to do to that object.

Pointing and pantomiming constitute children’s initial communicative intentions and can thus be understood as Moves as previously defined. These Moves are obviously not articulated morphosyntactically, but contain acoustic signals which are accompanied by a gesture corresponding to basic forms of Acts of reference and ascription in the context of shared intentionality and common ground.

The relevance of the actions of reference and ascription also derives from Tomasello’s (2003, p. 171) observation that in their early linguistic uses children employ dual lexical categories, that is, items which can be used both as nouns and verbs such as *bite, kiss, brush, drink, walk, hug,* etc. This fact, he claims, can only be accounted for by an approach which takes into consideration the “communicative role that a word plays (..) and the things words can and cannot do communicatively.” This emphasizes the idea that children are sensitive to the acts of ascription and reference from an early stage, very much in accordance with the prominent role they receive at the Interpersonal Level in FDG.

A natural question to ask in the present context is what motivates children to communicate at all. I have mentioned that children have intrinsic social motivations to help and cooperate with others. Tomasello claims that we are altruistic beings, naturally inclined to help and collaborate with others and therefore, the human instinct to communicate is motivated by a desire to collaborate. We want to share information and help others even if that is of no immediate benefit for ourselves. Tomasello has also studied primate communication and behaviour extensively and believes that these motivations are absent in apes.

Crucially, children’s initial communicative motives include the following (TOMASELLO, 2008, p. 87):

- **Requesting:** I want you to do something to help me (requesting help or information).
- **Informing:** I want you to know something (offering help including information).
- **Sharing:** I want you to feel something (sharing emotions or attitudes).
Tomasello (2008, p. 88fn) himself notes that there is “some correspondence here with the basic speech act functions posited by theorists such as Searle (1999), though the mapping is not totally straightforward.” Indeed, those three basic motivations can be seen as the seeds of the illocutions present in languages.

It is very interesting to observe the close correspondence between Tomasello’s hypothesised motives and the results obtained in Hengeveld et al’s (2007) study on the basic illocutions of the indigenous languages of Brazil. In particular, Hengeveld et al. defend that the most basic opposition in languages is one between Propositional illocutions (which cover both informing and questioning illocutions, that is, those having to do with the exchange of information) and Behavioural illocutions, which have to do with influencing other people’s behaviour (see Hengeveld and Mackenzie (2008, p. 74). The correlation between both proposals would be the following:

- Behavioural illocution => requesting help and sharing
- Propositional illocution => informing and requesting information

As an interim conclusion, it seems adequate to claim that most of the theoretical constructs identified in FDG at the Interpersonal Level (Move / Act, Illocution, Subacts of Ascription and Reference) seem to find an obvious correlate in initial the stages of language acquisition, which not only provides support to the FDG architecture, but also to the prominent role granted to the Interpersonal Level and the Contextual Component in the theory.

A crucial step in the process of language acquisition is the transition from motivated or iconic gestures to the communicative conventions shared by a community of individuals. This is what Tomasello (2008, p. 220) calls the drift to the arbitrary.

In the evolution to conventional language, the three basic motives of communication (requesting, informing and sharing) also represent stages of increasing complexity in grammar acquisition. Initially, the grammar of requesting would be a simple syntactic combination for getting others to do things in the here and now. This, Tomasello argues, would involve gesture combinations that create new meanings, but with no morphosyntactic markings, which would serve no relevant functions given the strictly context-bound interaction at this stage.
Pointing and gesturing can be subsequently accompanied by holophrases containing word combinations. Indeed, he argues that “the fist uses of communicative conventions were presumably as holophrases” which he defines as “one unit communicative acts” (2008, p. 224). This again correlates nicely with the Move as the basic unit of analysis in FDG. In many of these holophrases, “one element is a constant and the other element is a variable”. These are also called pivot schemas or “predicate frames”. Prototypical examples include (TOMASELLO, 2003, p. 115):

More ____ (e.g. More juice, more milk)
_____ gone (e.g. Daddy gone, doggy gone)

The use of pivot schemas seems to be a widespread strategy “for children acquiring many of the world’s languages”. Although we here have word combinations, Tomasello claims that these are not really syntactic structures as children “are not using such things as word order or case marking productively to indicate the different roles being played by different participants in that scene” (2008, p. 267). What is crucial here is that these frames are “direct manifestations of their [the children, DGV] growing conceptualization of event-participant structure” (TOMASELLO, 2008, p. 266). In other words, we seem to have evidence here of the relevance of predication or representational frames in the process of language acquisition, a crucial notion at the Representational Level in FDG. Children do not seem to learn lexemes together with the participant roles they require but seem first to deduce the participant frames with which verbs can be combined, which is in accordance with the separation of predicate frames from lexemes as originally proposed by García Velasco and Hengeveld (2002) for FDG.

Tomasello argues that the subsequent stage, the so called grammar of informing, requires more complex communicative strategies, as it involves reference to unknown objects and events, and the structuring of relations among participants (who did what to whom). He claims that this development can be accounted for by assuming a constructionist approach to grammar in which words and predicate frames are paired with morphosyntactic properties.

I believe, however, that Tomasello’s scenario is fully compatible with the notion of predication frame in FDG as a unit defining participant roles and a general event schema into which lexemes can be inserted, with morphosyntactic marking.
being added in the encoding process. In fact, as argued earlier, the grammar of requesting is more compatible with this idea than it is with the notion of construction, which is by definition, a combination of syntactic form and meaning.

Argument structure is also related to a key issue in studies on language acquisition: the acquisition of lexical items. The problem is generally illustrated with the notion of the indeterminacy of reference, illustrated by Quine’s (1960, p. 29) famous example of the invented word gavagai. The question is to explain how a phonological unit is assigned the right referent in the process of vocabulary acquisition given the great number of potential referents that a rich context can offer.

Some authors have proposed that the word acquisition process is guided by restrictions of different kinds, which take children to focus their attention on objects rather than on parts of it, for example, whereas others have suggested that the context and cultural environment are rich enough to guarantee the acquisition of lexical items. As with the process of language acquisition in general, Tomasello’s (2003) Social-Pragmatic Theory of language acquisition assumes that the notions of intention-reading and shared context or common ground are crucial in word acquisition, as they both serve to constrain the number of potentially logical referents for a given lexeme. In the process of assigning meanings to phonological sequences children would exclude those referents which are not logically possible in a given context of interaction.

Elsewhere, I have argued that the view on the construction of meaning as an inferential process underlies the interpretation of lexical nonce-formations and innovative coinages, which fall within the category of ‘contextuals’, defined by Clark and Clark (1979) as linguistic expressions whose interpretation can only be arrived at in context. If this ability is present in child language acquisition, it is to be expected that it is also present and made use of in processes of vocabulary acquisition in adult language. On the theoretical side, this calls for a view on lexical meaning which goes beyond the traditional fixed and static definitions provided by models of lexical decomposition (see García Velasco 2016).

Similarly, in recent work on language evolution and acquisition, Smith (2005a; 2005b) argues that meaning construction is inferential and defends a model of word learning in which meanings are not fixed entities transmitted from generation to generation, but a process which very much relies on the semantic hypotheses that speakers make on the basis of the available context. Smith argues that his model of
“inferential communication allows the development of communication between individuals who do not necessarily share exactly the same internal representations of meaning” (2005a, p. 373).

Tomasello (2003) additionally argues that the acquisition of function words and grammatical morphology is subject to the same principles as the acquisition of content words. One problem for the FDG approach to grammatical encoding, however, is the fact that children do not seem to extend the use of grammatical markers beyond the lexemes with which they are acquired. In other words, grammatical markers seem to be tied to the verbs or lexemes with which they first are encountered (TOMASELLO, 2003, p. 142): “The syntactic marking of agent-patient relations, the backbone of syntactic development, also begins locally with particular verbs in item-based constructions.”

For Tomasello, this is a paradox. On the one hand, syntactic case markers and agreement function as local cues that help children identify grammatical relations and participant roles, and indeed there is evidence that children are sensitive to them. On the other hand, many grammatical markers are difficult to acquire. He argues that (TOMASELLO, 2003, p. 198)

Their acquisition is problematic by ‘processing issues (lack of perceptual salience), semantic issue (lack of communicative weight) and plurifunctionality (…) The acquisition of grammatical morphology thus brings into focus many of the most basic processes of language acquisition, often in conflicting ways.

Tomasello claims that the complexity of morphology and clausal structure require more complex cognitive skills which are acquired later by children. I take this situation to be a natural consequence of the fact that function words and syntactic markers fulfil many different functions, which relate to pragmatic, semantic and syntactic dimensions. In particular, he refers to “clauses containing morphemes or words indicating such things as tense, aspect, modality, negation, evidentiality, and social intimacy” (TOMASELLO, 2003, pp. 198-199).

In the FDG tradition, Boland (2006) has studied the development of TMA systems and concludes that

Although there were large distinctions in speed of acquisition, the qualitative development was very similar in all children (…) A general
conclusion is thus that the limits on variation in adult languages and in stages of first language acquisition are in fact identical within the domain of TMA.

She also argues (2006, p. 11) “that the acquisition of grammatical elements as well as whole linguistic constructions are embedded in a social-pragmatic context and is guided by their communicative functions.”

Conclusions

Although necessarily sketchy, this comparison of Tomasello’s theory of language acquisition with the architecture of FDG leads us to the following conclusions.

The top-down orientation of FDG naturally correlates with a theory of language acquisition based on social pragmatic principles. In particular, the introduction of the Contextual Component, together with Mackenzie’s proposal to formalize the speech participants’ common ground, provides the natural basis for a comparison with a model of language acquisition, a process which is necessarily dynamic and dialogic.

We have also seen that the general order of language acquisition is very much compatible with the implementation of the grammar. Children begin communicating by using gestures with are often accompanied with linguistic signals. These first communicative units can be safely considered as Moves, with holophrastic units typically performing acts of reference or ascription. Additionally, the communicative motives identified by Tomasello (requesting, informing and sharing) seem to form the basis of more delicate illocutions in adult languages.

There is also evidence that the first word combinations that children produce are deprived of syntactic elements, and could thus be said to correspond to the conceptualization of event-participant relations which nicely correspond to FDG frames at the Representational Level. This supports the view that lexemes and frames are separated and argues for a process of language acquisition in which utterances are fully processed first and the items they are composed of identified in a piecemeal fashion. Therefore, the very notion of frame and, maybe that of template, finds motivation in the process of language acquisition. Indeed, although I have not been able to discuss it, there also seems to be evidence in favour of the learning of
stress or metrical patterns, which children seem to apply to words independently of syntax and semantics, and which would also justify the use of phonological patterns at the Phonological level.

Finally, the acquisition of morphosyntactic features seems to operate after (part of) the representational information has been assembled, in accordance with its position in the dynamic implementation of the theory. All this means that FDG meets Boland’s requirement and finds compatibility with “developmental stages and psychological processes of language acquisition.”

There are many issues that remain to be explored, of course. To cite only two, the item-based initial acquisition of syntactic markers does not seem to correlate with Morphosyntactic encoding, a process which would require the emergence of generalizations for syntactic templates in the same way as children seem to generalize participant argument structures. However, as Tomasello himself notes, the acquisition of morphosyntax is a very controversial and problematic issue, whose intricacies are far from being decided. Additionally, the role of the phonological level has not been discussed and it is obvious that children need to discriminate phonological units if they are to identify lexemes, grammatical patterns or morphemes. This relates to the fact that I have discussed language acquisition on the basis of evidence from the production side, rather than from comprehension.

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