

interaction plays a key role in evaluating the theories at stake. The book also reaches its goals by offering exercises in each chapter as a training tool, which allows for the hands-on use of the notions discussed in the chapter. Brief but thorough guides to further reading are also provided after the exercises to each chapter.

Overall, the book is very successful in achieving its three pedagogical goals and is an ideal textbook for morphology. Unfortunately, as the authors observe, space constraints prevented them from discussing interesting topics, such as experimental and computational approaches to morphology. It would be interesting to see these approaches covered in a second edition of the volume. Nevertheless, in its expository rigour and excellent theoretical clarity, this textbook represents an ideal starting point for students and instructors of morphology, with all the key features of a classic in the making.

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**Ian Roberts.** 2010. *Agreement and head movement: Clitics, incorporation, and defective goals*. In the series *Linguistic Inquiry Monographs* 59. Cambridge, MA: MIT Press. Pp. v + 290. US \$30.00 (softcover).

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In this book, Ian Roberts proposes to account for head movement in the narrow syntax, arguing that head movement is simply a type of Agree.

In chapter 1, Roberts tackles what is arguably the most important argument Chomsky gives for the idea of relegating head-movement to PF—that it does not cause LF effects. Roberts shows, using evidence from various Romance languages and English, that contra Chomsky, head movement has semantic effects after all and is thus still required within narrow syntax.

Chapter 2 addresses the differences (and similarities) between head movement and pied-piping as a result of phrasal movement. Roberts notes here that while AGREE and MERGE are well-defined operations, PIED-PIPE is left with no formal definition. This leads him to explore the mechanisms within PIED-PIPE, and ultimately to argue that the principles of Structure Preservation and Chain Uniformity cannot force this type of movement, while the A-over-A Condition (Rackowski and Richards 2005) can. The A-over-A Condition not only explains the examples of pied-piped movement, but also allows for head movement since it can be configured for both minimal and maximal category movement, as in (1).

(1) *A-over-A condition and categorial targets:*

“A goal  $\alpha$  is the closest one to a given probe if there is no distinct goal  $\beta$  such that for some X (X a head or maximal projection), X c-commands  $\alpha$  but does not c-command  $\beta$ .” (p. 34)

The difference between maximal and minimal projections for Roberts is that pied-piping occurs when a maximal category is the target of the probe, while head movement occurs when a minimal category is the target. I present this idea in further detail in Table 1.

The third chapter contains the crux of many of Roberts' arguments and is therefore by far the longest. This chapter is devoted to the many types of clitics found (primarily) in Romance. An in-depth look at the various phenomena associated with clitics allows Roberts to substantiate at least one of the three conditions he suggests restricting head movement to.

(2) *Restricted environments where head movement is expected/allowed:*

- a.  $\beta P$  lacks internal structure, that is, it is  $\beta^{\min/\max}$ .
- b.  $\beta P$  lacks a specifier [...], that is, the structure is  $[\beta^{\max} \beta^{\min} Y]$ .
- c. Spec,  $\beta P$  is not a goal for P[robe] [...] while  $\beta^{\min}$  is, that is,
   
... P<sub>+F</sub> ...  $[\beta_{P+F} XP^{+G} [... \beta^{\min}_{+F} ...]$  (p. 39)

Although Roberts ultimately argues that (2b) is merely a theoretical possibility and is not likely to exist because Edge Features mandate that phase edges are necessarily filled, he argues that (2a) is the structure of clitics, and that (2c) is instantiated in verb movement, both V/v-to-T and V/v-to-C, which is the subject of chapter 4.

Chapter 5, unlike the others, does not attempt to motivate the need for head-movement as an operation in narrow syntax per se, but instead details how it can be incorporated into the theory of movement more generally. Here, Roberts argues that additional ad hoc mechanisms would be required to remove head-movement from narrow syntax, that head-movement is a natural result of the theory of movement, and that by maintaining it as part of the narrow syntax we end up with a more minimal and elegant theory. Roberts discusses the logical extensions of the theory of movement as it exists (p. 208) which I adapt here into Table 1.

Beyond the empirical evidence adduced throughout the previous sections in support of head-movement as a syntactic operation, rows b. and h. show that, even on theoretical grounds, this type of movement belongs in the narrow syntax. As Roberts

**Table 1:** Logical possibilities of the three movement-causing operations and their syntactic processes

	INTERNAL MERGE	AGREE	PIED-PIPE	Syntactic Processes
a.	+	+	+	A-movement
b.	+	+	–	Head-movement
c.	+	–	+	A'-movement
d.	–	+	–	“Pure” local AGREE with no movement
e.	–	–	–	No relation between X <sup>0</sup> s
f.	–	+	+	Logical impossibilities since PIED-PIPE
g.	–	–	+	is defined by movement
h.	+	–	–	Predicate clefting, or possibly, A'-head-movement because of Edge Features

shows here, head-movement is a natural consequence of the theory of movement, and to remove it would require additional ad hoc machinery. In sum, this would lead to a more cumbersome theory and one which would not be able to account for all of the data discussed previously.

In chapter 6, Roberts concludes that “head movement cannot and should not be eliminated from narrow syntax [...] and recent proposals to replace certain cases of head movement with remnant movement and/or PF-movement [...] should be reconsidered” (p. 213). With this statement, I now proceed to offer an evaluation of the work as a whole.

Given that Roberts' primary goal in this book is to “rescue” head-movement from being excised from narrow syntax and handed over to PF, I believe something more should be said about PF-movement. This, in my opinion, is the only major shortcoming of the book. The problem lies in the fact that, like other authors such as Embick and Noyer (2001) or Bošković and Nunes (2007) who attempt to explain things like verb-stranding and affix lowering as PF movement, there is no appeal to phonological constraints or constituents (though the latter article does make some reference to the syllable) through either direct or indirect reference (see Downing 2013 for discussion). Where the relegation of head-movement to PF has been successful, authors have done exactly this and appealed to prosodic constituency (see, for example, Zubizarreta 1998 or Elfner 2011 and references therein). This could easily be done through the system of matching (either syntax-prosody or prosody-syntax faithfulness) as argued in Selkirk (2009, 2011). One recent example of this type is featured in Bennett et al. (in press) wherein McCloskey (contra his earlier treatment in Chung and McCloskey 1987) argues against a syntactic treatment of Irish pronoun post posing. Rather, this type of head-movement is relegated to the PF component, but is likewise motivated via a phonological constraint that cliticizes the moved head to the right edge of a primary-focused prosodic phrase. This reanalysis allows the rightward movement of a syntactic head to be successfully carried out by the phonological component—making reference to phonological constituents. (For an alternate analysis based on information structure, see Mulkern 2011.)

The importance of this is that it is not enough to simply state that an operation is done in PF, if PF has no way of carrying out that operation. Roberts' arguments would have likewise been greatly strengthened if he had shown not only that there could be semantic consequences of some head-movement, but also that PF had no viable operations to account for some instances of head-movement, and therefore Roberts could easily reclaim those instances for the narrow syntax. If Roberts had appealed to such an argument, he would be able to show that PF movement — of the type discussed in Bennett et al. (in press) — would not always be able to handle that movement, but also that successful phonological treatments of head-movement do not belong to one of the three environments (given in example (2)) where he argues that head-movement is indeed syntactic.

Despite the lack of attention paid to what PF can or cannot do, Roberts does successfully use clitics as a vehicle to argue for the retention of some restricted cases of head-movement in the narrow syntax. He uses purely syntactic evidence in cases such as clitic-climbing under which, through AGREE, the clitic undergoes head-movement to a higher head bearing the relevant un-valued  $\varphi$  features.

In the plethora of test cases Roberts uses, he shows that there is a simple syntactic reason for each phenomenon. After thinking about each of these examples, I am also convinced that any attempt to deal with these problems by resorting to remnant or PF-movement would fail, or at the very least, require a less-minimal explanation.

In conclusion, while this book does assume substantial prior knowledge, it is clearly written such that if a paragraph raised a question, the subsequent paragraph usually answered it. The style is concise, and each argument is well constructed, always tying in with those previously made.

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