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Symmetry in Syntax

Merge, Move, and Labels

Barbara Citko

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SYMMETRY IN SYNTAX

While much has been written on asymmetric aspects of sentence structure, symmetric aspects have been largely ignored, or claimed to be non-existent. Does symmetry in syntax exist, and if it does, how do we account for it? Barbara Citko sets out to tackle these questions and offers a unified approach to a number of phenomena that have so far been studied only in isolation. Focusing on three core minimalist mechanisms, Merge, Move – and Labeling – she advances a new theory of these mechanisms, by showing that, under certain well-defined circumstances, Merge can create symmetric structures, Move can target either of two potentially moveable objects, and labels can be constructed symmetrically from the features of two objects. This book is aimed at researchers and graduate students interested in minimalist syntax, the structure of questions, relative clauses, coordination, double object constructions, and copular sentences.

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I dedicate this book to the memory of my parents, Krystyna and Stanisław Citko.

Abbreviations

ACC	accusative
APPL	applicative
ASP	aspect
CL	clitic
CPR	comparative
DAT	dative
DEF	definite
DEM	demonstrative
EPP	Extended Projection Principle
EXP	expletive
FEM	feminine
FOC	focus
FUT	future
FV	final vowel
GEN	genitive
HAB	habitual
IMPERF	imperfective (aspect)
INDEF	indefinite
INF	infinitive
INSTR	instrumental
LOC	locative
MASC	masculine
NACT	non-active
NEG	negative
NEUT	neuter
NML	nominalizer
NOM	nominative
OA	object agreement
OB	object
PASS	passive

PAST	past (tense)
PERF	perfective (aspect)
PL	plural
POSS	possessive
PRES	present
PROG	progressive
REFL	reflexive
REL	relative
SA	subject agreement
SE	se (reflexive marker)
SG	singular
SP	subject prefix
SUBJ	subject
VAL	value

Contents

1 *Rationale*

1.1 Introduction

While there has been a lot of research on asymmetry and antisymmetry in syntax, symmetry has been mostly ignored or claimed to be outright impossible (Kayne 1994, Di Sciullo 2002, 2005). This is somewhat surprising from a biolinguistic perspective, which seeks to integrate linguistics with the natural sciences, where symmetry is the normal state of affairs and asymmetry requires an explanation (as pointed out by Boeckx and Piattelli-Palmarini 2005, Brody 2006, Chomsky 2005, Jenkins 2000, among others). My main goal in this book is to remedy this gap by examining symmetric aspects of three fundamental syntactic mechanisms: the mechanism responsible for recursion, the mechanism responsible for displacement, and the mechanism responsible for determining the categories of syntactic objects. I look at these three mechanisms through the lens of Chomsky's minimalist program, which takes the mechanism responsible for recursion to be External Merge (often referred to simply as Merge), the mechanism responsible for displacement to be Internal Merge (often referred to simply as Move) and the mechanism responsible for determining categories of both Merge and Move structures to be Labeling. The standard minimalist assumption is that the structures created by Merge are asymmetric (because only such structures can be linearized), that Move is asymmetric (because it 'privileges' one of two potentially movable elements) and that labels are asymmetric (because they contain features of only one element). In the course of the book I will challenge these three assumptions and argue that Merge can also create symmetric structures, that Move can sometimes treat two elements in a symmetric fashion, and that labels can sometimes contain features of two objects undergoing Merge.

The rest of this introductory chapter serves three goals. First, it provides a general introduction to the concepts of symmetry, asymmetry and antisymmetry. It outlines what these concepts mean in general, as well as in

more specific, linguistic terms. Second, it provides an overview of the theoretical framework assumed throughout the book, the minimalist program. The overview focuses on the workings of Merge, Move and Labeling, which are at the core of the claims I advance in the book. This chapter also explains why the empirical focus of the book is on symmetric aspects of these three mechanisms, as opposed to many other phenomena that the image of symmetry in syntax might conjure. And third, this introductory chapter provides an overview of the rest of the book.

1.2 Symmetry and asymmetry

The terms *symmetry* and *asymmetry* are used in two different ways in the literature. One is a fairly intuitive non-technical sense, and the other one is somewhat more technical and tends to vary from discipline to discipline.

In its non-technical sense, the term *symmetry* is used to refer to the similarities between two parts of an object (or two objects), and the term *asymmetry* to the differences between them. In a linguistic context, the objects in question could be syntactic features, categories or transformations. Let us first look at a couple of simple cases. For example, we know that arguments differ from adjuncts in that they are bearers of theta roles. Thus we might speak of the symmetric behavior of different types of arguments (i.e. subjects and objects) with respect to theta theory, and the asymmetric behavior of arguments and adjuncts in the same respect. Another well-studied example involves cross-categorial symmetry, such as the symmetry between noun phrases and clauses, which has been studied quite extensively at least since Chomsky's (1970) "Remarks on nominalization" (see Abney 1987, Douglas-Brown 1996 and Hiraiwa 2005, among others, for more recent ways to capture this symmetry). The data in (1a–b) illustrate the symmetric behavior of noun phrases and clauses with respect to theta role assignment.

(1) a. The Romans$_{\textit{Agent}}$ destroyed the city$_{\textit{Theme}}$
b. the Roman$_{\textit{Agent}}$ destruction of the city$_{\textit{Theme}}$

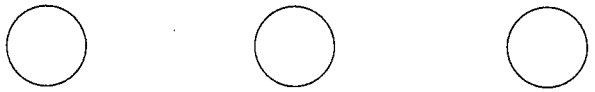
And the Hungarian data in (2a–b) illustrate the symmetric behavior of subjects and possessors with respect to case marking; both are marked with the same (nominative) case. Furthermore, the possessee in (2b) agrees with the possessor in a way that parallels subject–verb agreement.

(2) a. **Te** ve-tt-el egy kalap-ot.
2SG.NOM buy-PAST-SG.INDEF INDEF hat-ACC
'You bought a hat.'

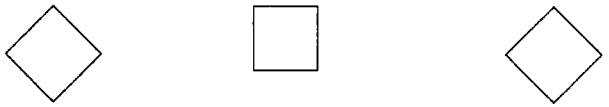
b. a **te** kalap-ja-i-d
D **2SG.NOM** hat-POSS.PL-2.SG
'your hats' (Hiraiwa 2005:19–20, citing Szabolcsi 1994:186)

In a more technical (not necessarily linguistic) sense, the terms symmetry and asymmetry are used to describe geometric patterns, or relationships between two elements in a set. In geometric terms, an object is symmetric if it can remain unchanged when a transformation applies to it. Geometric figures under rotation transformation provide a straightforward illustration. A circle, for example, is symmetric under any rotation; if we rotate it by any degree, the result is still going to be a circle, as shown in (3a–c). A diamond, on the other hand, is only sometimes symmetric, as shown in (4a–c). If we rotate it by 45 degrees, the result is a square. However, if we rotate it by 90 degrees, the result is a diamond again.

(3) a. b. 45° rotation c. 90° rotation

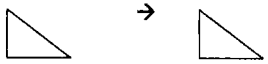


(4) a. b. 45° rotation c. 90° rotation

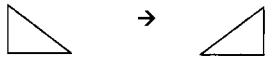


Mathematicians distinguish four types of symmetric transformations: reflection or mirror symmetry, rotation symmetry, translation symmetry and glide reflection symmetry (see Lee 2007 for an accessible overview). Rotation rotates an object (as we have just seen), translation shifts it (whilst preserving its orientation), reflection yields a mirror image of it, and glide reflection combines reflection and translation. As we will see shortly, the ones that apply most straightforwardly to linguistic patterns are translation and reflection symmetries, illustrated in (5a–b).

(5) a. translation symmetry



b. reflection or mirror symmetry



In set theory, the terms symmetry and asymmetry are used to refer to binary relationships between elements in a set.[1] This is by far the most common usage of the two terms in linguistics. A relationship between two elements in a set is *symmetric* if for every ordered pair $<x,y>$ in the set, the pair $<y,x>$ is also in that set. A good illustration comes from the domain of kinship terms; the relationship 'cousin of' is an example of a *symmetric* relationship. If John is Bill's cousin, Bill has to be John's cousin as well. A relationship between two elements is *asymmetric* if it is never the case that for any pair $<x,y>$ in the set, the pair $<y,x>$ is in the same set. The relation 'is older than' is asymmetric; if John is older than Bill, Bill cannot be older than John. A related concept is that of *antisymmetry*. A relationship between two elements in a set is *antisymmetric* if whenever both $<x,y>$ and $<y,x>$ are members of the set, x must be the same as y.

With this general background on symmetry (and asymmetry), we are almost ready to begin our examination of symmetry in syntax. First, however, let me briefly introduce the theoretical framework assumed in this book, the minimalist program. This is the topic of the next section.

1.3 Theoretical framework

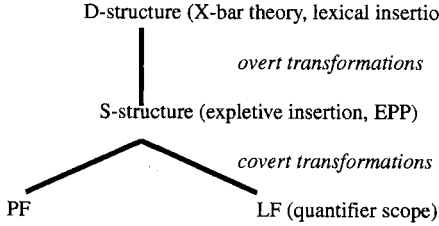
The general framework of this book is the minimalist program pioneered by Chomsky (1995), in particular the version of it laid out in Chomsky (2000, 2001) and subsequent works, often referred to as *Phase Theory*.[2] My goal in this section is not to provide a comprehensive overview of minimalism (or even a general introduction to it), but to give readers less familiar with it sufficient background to follow the rest of the book.[3] The minimalist program is couched within the biolinguistic tradition, which takes the language faculty to be a biological organ, a product of evolutionary processes and pressures. The shape of the language faculty is determined by the following three factors, with the third factor gaining more prominence in recent years.

(6) (i) external data;
(ii) genetic endowment (for language, the topic of UG);
(iii) principles of structural architecture and developmental constraints that are not specific to the organ under investigation, and may be organism independent. (Chomsky 2008:133)

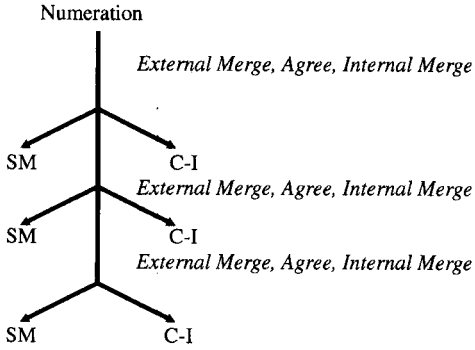
At the core of the minimalist program is the so-called *Strong Minimalist Thesis* (SMT), which states that "language is an optimal solution to interface conditions" (Chomsky 2008:135).[4] The interface conditions are

those imposed by the sensorimotor (SM) and conceptual-intentional (C-I) systems. The SMT thus significantly changes the general architecture of the grammar. Readers well versed in Government and Binding theory (and its predecessors) will recognize the Y model of the grammar given in (7a) below, with four distinct levels of representation; D-structure, S-structure, Phonetic Form (PF) and Logical Form (LF). Operations could happen en route to any of these four levels. Likewise, conditions, principles and filters could apply at any level. The "new" minimalist architecture is given in (7b); there are only two relevant levels, the interface levels. Thus, all the syntactic conditions and principles have to be (re-)stated as interface conditions; there is no S-structure or D-structure levels to appeal to.

(7) a.



b.



Each derivation starts with a Numeration: a set of lexical items (or features, to be more accurate) to be manipulated in the course of the derivation. Once the Numeration is exhausted, the derivation is complete.

Another crucial innovation in current minimalism is the idea that derivations proceed in chunks called *phases* and that transfer to the two interfaces can happen more than once per derivation. The terms *Phase Theory* or *Multiple Spell-Out Theory* reflect this aspect of the theory.[5] The points of transfer to the interfaces are determined by phase heads, which are taken