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INSIGHTS INTO NOMINAL AND EVENT MODIFICATION
Editors: Adina Camelia Bleotu and Deborah Foucault

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INTRODUCTION

The current issue includes several papers on modification, some of which were presented at the *Workshop on Modification*, co-organized by the University of Bucharest and the University of Massachusetts Amherst during 27-28 November 2021.

Going back in time to (at least) Aristotle, language has been assumed to make a distinction between the basic entities we ascribe properties to and the properties we ascribe to them via predication (McNally 2016); for instance, in *the yellow dress*, there is a clear distinction between *dress*, which is the basic entity, and *yellow*, which is the property ascribed to it. Modification has been recognized since as one of the fundamental semantic and syntactic manners of composition (Chomsky 1981, Cinque 1994, Ramchand 2007, McNally 2016, a.o.). Semantically, modifiers have been argued to combine with unsatured expressions to yield unsatured expressions, thus contrasting with arguments, which saturate (i.e. reduce the valence of) the expressions they combine with (Frege 1997). Importantly, there has been a rich semantic literature classifying modifiers based on a range of semantic criteria, such as semantic notions (Picallo 2002) and entailments (Parsons 1970, Kamp 1975). Syntactically, unlike arguments, which are obligatory, modifiers have been argued to be optional (Dowty 1982, 1989, 2003). Nevertheless, there are exceptions: obligatory modifiers like *well* in *a well-built house* vs. ??*a built house* (Goldberg & Ackerman 2001). Modification applies to a variety of domains (e.g. the nominal domain, the verbal domain, the adjectival domain), and it can be expressed through a variety of categories (adjective phrases, prepositional phrases, possessive phrases, relative clauses, adverbial phrases a.o.). The current volume presents research on traditional nominal modifiers (such as adjectives) and free relatives (nominal modifiers which attach to an apparently null head), as well as secondary predicates (a special type of event modification) and classifiers (a special type of nominal modification).

In "Resultatives with stative roots", Monica Alexandrina Irimia investigates resultative verbal complexes from Mandarin Chinese and their possibility to occur with statives. While previous research argues that there is a restriction on resultative secondary predicates (Dowty 1979, Levin & Rappaport Hovav 1995), Monica Alexandrina Irimia proposes multiple diagnostics which show that, unlike in English, in Mandarin Chinese, these constructions can be built from stative roots. However, not all states are allowed, but only those with a complex internal structure, involving a causative head or a scalar change, e.g. *be tired*, *be worried*, *be in a seated position,* etc., which allow the progression of the state through the degrees of a scale until its highest point.

In "On silent COLOR in Romanian", Mihaela Tănase-Dogaru builds on Kayne (2005) to argue for the presence, in Romanian, of a silent qualitative classifier noun COLOR in structures such as *Masa* ***e*** *COLOR verde* 'table-DEF is COLOR green', which becomes visible in sentences such as *Masa* ***e*** *de culoare verde* 'table-DEF is of color green'. She adds the silent noun COLOR to other previously proposed silent nouns in Romanian: NUMBER, AMOUNT and TYPE (see, for instance, Tănase-Dogaru 2008, 2009).

In "Adjective orders in English and Romanian: An experimental investigation", Daniela-Gabriela Trușcă and Adina Camelia Bleotu investigate experimentally the order of quality, size and color adjectives in British English and Romanian through a Likert

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scale acceptability judgment task employing sentences containing sequences of two adjectives. The authors show that, while native British speakers judge as natural sequences of two adjectives which observe the order quality > size > color such as *beautiful big family* or *tiny blue butterfly*, native Romanian speakers judge as natural both sequences which observe and sequences which do not observe this order (*familie frumoasă mare* 'big beautiful family' vs *familie mare frumoasă* 'beautiful big family', *fluture mititel albastru* 'blue tiny butterfly' vs *fluture albastru mititel* 'tiny blue butterfly').

In "How are size, age, shape, and color adjectives ordered in English and Romanian? An experimental investigation", Adina Camelia Bleotu and Amalia Luciu investigate experimentally whether native British English and native Romanian adult speakers observe the General Adjective Hierarchy size > age > shape > color (Scott 2002). Participants were tested with a forced choice task, where they had to choose the best between two sentences: one containing a sequence of two adjectives congruent with the general hierarchy (*Mary has a big old bed*, *Maria are un pat vechi mare*), and one containing the reverse sequence of adjectives, incongruent with the General Adjective Hierarchy (*Mary has an old big bed*, *Maria are un pat mare vechi*). The authors find that while British English speakers have a strong preference for congruent adjectives orders, Romanian speakers are more flexible in their ordering. These findings suggest that Romanian is not a mirror of English in terms of ordering adjectives, as previously assumed by cartography (Cinque 1994, 2010) for all Romance languages, but rather a free adjunction language (see also Cornilescu & Cosma 2019).

In "Romanian free choice free relatives: A comparison with subtrigged free choice sentences", Mara Panaitescu focuses on the semantic and pragmatic properties of Romanian free choice free relatives (FC-FRs). The author argues that the quantificational force of FC-FRs in Romanian is definite, and that, in parallel to determiner free choice inferences, the distribution of Romanian FC-FRs falls under three categories: (i) auto-licensing, i.e. subtrigging (LeGrand 1975), a saving mechanism observed for free choice in episodic contexts; (ii) licensing by a non-generic modal operator; (iii) licensing by a generic or habitual operator. The three types of contexts differ in universality effects: serial, parallel and atemporal universality.

The current issue hopes to advance research in the domain of modification, shedding light on a number of key issues (constraints on secondary predication, silent modification, constraints on ordering modifiers, modification of apparently absent heads).

References

Chomsky, N. 1981. *Lectures on Government and Binding.* Dordrecht: Foris.

Cinque, G. 1994. On the evidence for partial N-movement in the Romance DP. In G. Cinque, J. Koster, J.-Y. Pollock, L. Rizzi & R. Zanuttini (eds.), *Paths Towards Universal Grammar. Studies in Honor of Richard S. Kayne*, 85-110. Washington DC: Georgetown University Press.

Cinque, G. 2010. *The Syntax of Adjectives. A Comparative Study*. Cambridge, MA: MIT Press.

Cornilescu, A. & Cosma, R. 2019. Linearization of attributive adjectives in Romanian, *Revue roumaine de linguistique* LXIV (3): 307-323.

Dowty, D. R. 1979. *Word Meaning and Montague Grammar*. Dordrecht: Reidel.

Dowty, D. R. 1982. Grammatical relations and Montague Grammar. In P. Jacobson & G. K. Pullum (eds), *The Nature of Syntactic Representation*, 79-130. Dordrecht: Reidel.

Dowty, D.R. 1989. On the semantic content of the notion 'thematic role'. In G. Chierchia, B. Partee, & R. Turner (eds.), *Properties, Types, and Meaning*, vol. II, *Semantic Issues*, 69-129. Dordrecht: Kluwer.
Dowty, D.R. 2003. The dual analysis of adjuncts and complements in Categorial Grammar. In E. Lang, C. Maienborn, & C. Fabricius-Hansen (eds.), *Modifying Adjuncts*, 33-66. Berlin: De Gruyter.
Frege, G. 1997. On concept and object. In M. Beaney (ed.), *The Frege Reader*, 181-193. Oxford: Blackwell.
Goldberg, A. E. & Ackerman, F. 2001. The pragmatics of obligatory adjuncts *Language* 77 (4): 798-814.
Kamp, H. 1975. Two theories about adjectives. In E. Keenan (ed.), *Formal Semantics of Natural Languages*, 123-155. Cambridge: Cambridge University Press.
Kayne, R. S. 2005. *Movement and Silence*. Oxford: Oxford University Press.
LeGrand, J. E. 1975. *'*Or' and 'Any': The Syntax and Semantics of Two Logical Operators. PhD dissertation, University of Chicago.
Levin, B. & Rappaport Hovav, M. 1995. *Unaccusativity: At the Syntax-Lexical Semantics Interface*. Cambridge, MA: MIT Press.
McNally, L. 2016. Modification. In M. Aloni & P. Dekker (eds.), *Cambridge Handbook of Formal Semantics*, 442-466. Cambridge: Cambridge University Press.
Parsons, T. 1970. Some problems concerning the logic of grammatical modifiers, *Synthese* 21 (3-4): 320-324.
Picallo, M. C. 2002. L'adjectiu i el sintagma adjectival. In J. Solà, M.-R. Lloret, J. Mascaró, & M. Pérez-Saldanya (eds.), *Gramàtica del Català Contemporani*, vol. 3, 1643-1688. Barcelona: Empúries.
Ramchand, G. 2007. Events in syntax: Modification and predication, *Language and Linguistics Compass* 1 (5): 476-497.
Scott, G.-J. 2002. Stacked adjectival modification and the structure of nominal phrases. In G. Cinque (ed.), *Functional Structure in the DP and IP: The Cartography of Syntactic Structures*, vol. 1, 91-120. Oxford and New York: Oxford University Press.
Tănase-Dogaru, M. 2008. The silence of exclamation: Exclamative constructions, singular indefinite predicates and silent nouns *Bucharest Working Papers in Linguistics* 10 (1): 137-146.
Tănase-Dogaru, M. 2009. *The Category of Number*. Bucharest: Editura Universității din București.

RESULTATIVES WITH STATIVE ROOTS

Monica Alexandrina Irimia[*]

Abstract: An important restriction has been pointed out regarding resultative secondary predicates, namely their impossibility with stative roots (Dowty 1979, Levin & Rappaport Hovav 1995, a.o.). This paper addresses resultative verbal complexes from Mandarin Chinese, which can be constructed from statives; these examples raise important questions regarding their precise nature and the differences from languages like English where stative roots are banned from resultatives. The diagnostics examined here demonstrate that the Mandarin Chinese constructions are indeed true resultatives built from stative roots. However, only certain types of statives are permitted, more precisely those that contain complex internal structure, as contributed by a Davidsonian event argument (Maienborn 2003, 2007), a causative head, or a scalar change component. As opposed to English which can only construct resultatives from bases that exclude statives, Mandarin Chinese permits resultatives built on scalar predicates, irrespective of their stativity.

Keywords: resultative secondary predicates, stativity, Mandarin Chinese

1. Introduction

Resultative secondary predicates (ResSPs) of the type *pound flat*, as illustrated in (1), have been addressed under a variety of theoretical frameworks (see especially Levin and Rappaport Hovav 1995 or Wechsler 2005 for an overview).

(1) The worker has pounded the metal **flat**.

In this paper[1] we focus on an important property ascribed to them, namely that they should give rise to a clash with stative/non-dynamic main predicates. This restriction has been emphasized in both (lexical-)semantic and syntactic works, following the classical observations in Dowty (1979). In this long line of research, it is assumed that resultatives as in (1) must involve a process such that the adjectival ResSP indicates the endpoint, and subsequently the result, of this process. Aspectually, ResSPs encode types of events that have duration and are telic, in that they include a necessary endpoint[2]. This correctly

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[2] The classification of predicates in terms of their aspectual nature is due to research by Vendler (1957), followed by Dowty (1979). Four main categories have been identified, as schematically presented below, with event structure templates from Chang (2003: 327). See also Rappaport Hovav & Levin (1998).

(i) State: the simplest predicate type, lacks internal structure and cannot express a change in the properties of the participants; **predicate'** (x) or (x,y);

(ii) Activity: encodes ongoing events, with internal change and duration, but without a necessary temporal endpoint; [**do' (predicate** (x) or (x, y))]

(iii) Accomplishment: has duration and a necessary temporal endpoint; [**do' (predicate** (x) or (x, y))] CAUSE [BECOME (**predicate'** (y) or (z))])

(iv) Achievement: has no duration, but an instantaneous culmination or endpoint; [BECOME **predicate'** (x) or (x,y)]

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predicts that activity predicates such as *pound*, which encode a process, should be able to host a secondary predicate, the latter signaling the result of the event. On the other hand, *stative*/*non-dynamic* roots should be excluded, as they are not processes. As Levin and Rappaport Hovav (1995) mention explicitly, this type of incompatibility is also due to a restriction in the ontology of events: there are no such aspectual types as telic states, given that states do not have an endpoint.

The clash of ResSPs with statives is borne out in English, as seen in (2), which contains various types of statives such as *be sick*, *stay*, *sit*, *lie*, etc. This sentence cannot mean that John became tired as a result of being sick, staying, sitting, lying, etc. The adjectival secondary predicate, if grammatical at all with some of these predicates, can at most be interpreted as a depictive, describing a property which holds during the whole event, but which does not result from the event, e.g. John was tired during the event of sitting.

(2) *John was **sick/stayed/sat/lay tired**.

However, even if this restriction is robust in English, what is less discussed in the literature is that in some languages stative main predicates are more easily tolerated with ResSPs. Such cases raise important questions about the limits of the ResSP constructions in human language. Here we will be examining various examples of statives as they interact with ResSPs in Mandarin Chinese. As seen in (3a), the secondary predicate (SP) *wān* ('bend') receives a resultative interpretation, even if the root *lèi* ('be tired') appears to be a stative verb. Similarly, in (3b) the secondary predicates *lèi/nì* ('tired/bored') can be interpreted as a result in Mandarin Chinese. But the initial part of the verbal complex is a positional stative predicate which cannot host a ResSP in languages like English, as we have seen in (2):

(3) Mandarin Chinese[3]

a. Zhāngsān **lèi-wān** le yāo.
Zhangsan be tired-bend PFV waist
'As a result of Zhangsan's being tired, his waist became bent.'
(Li 2008, ex. 14a, adapted)

b. Tā **dāi-lèi /nì** le.
he stay-tired/bored PFV
'As a result of his staying, he became tired/bored.'

An assumption that could be made regarding examples such as (3) is that maybe the initial predicates are not true statives, but inherently telic when it comes to their structure, and this property permits them to host ResSPs. However, as we show in this paper, these predicates do pass diagnostics that rather associate them to statives. What is, then, the best analysis for examples such as (3)? Although preliminary, the point we would like to make in this paper is that more than one strategy is needed in UG for the construction of ResSPs, besides conflation of a root with a functional projection specified as

[3]Abbreviations: CLF = classifier, DEF = definite, DOM = differential object marking, F = feminine, INCH = inchoative, LK = linker, PFV = perfective, PROG = progressive, RES = resultative, SG = singular.

BECOME/BOUNDED MOTION, which derives the English type built on processes and which excludes all stative bases.

In order to adequately derive ResSPs with statives, it is necessary to investigate in more detail the internal structure of the states that allow the resultative complex verb formation. This is due to the fact that, as we will also see in the paper, not all statives allow resultatives in Mandarin Chinese. The examination of the classes that do indicates three types: (i) statives that contain an event argument (Maienborn's Davidsonian states); (ii) statives specified with a causative component; (iii) statives lexically specified with a scale/degree component. As opposed to English, Mandarin Chinese permits a strategy of ResSP formation which delimits an eventuality through the degree scale, which is static. The highest degree on the scale is taken to specify the result thus making ResSPs available. English-type resultatives, on the other hand, are not scalar, but dynamic; they imply functional material specified as BOUNDED MOTION and which presupposes processes.

The structure of the paper is as follows. Section 2 introduces the resultative parameter, to better situate the problem with stativity. Section 3 presents various examples of ResSPs with stative roots in Mandarin Chinese; then various diagnostics are presented which support the stative nature of the matrix predicate. Section 4 examines diagnostics indicating that these constructions are indeed resultatives, while Section 5 briefly discusses previous accounts and their shortcomings when it comes to deriving the data. Section 6 introduces the typology of statives that are possible in Mandarin Chinese ResSPs and the preliminary analysis of resultativity built on the degree scale. The conclusions are in section 7.

2. The resultative parameter

ResSPs are complex constructions in which an (adjectival) secondary predicate introduces a state that holds of a participant as a result of the eventuality they are part of. Although monoclausal, canonical ResSPs involve conflation of two temporally-independent eventualities; in example (1) it is implied that the eventuality of the metal becoming flat holds as result of the eventuality of its being pounded.

ResSPs raise numerous non-trivial questions, one of them being related to the precise syntactic and semantic mechanisms regulating the co-occurrence of two eventualities under a mono-clausal structure. Importantly, this process seems to be restricted in some languages. ResSPs are well-known to give rise to the so-called "resultative parameter" (Kratzer 2005), with an extensive literature (Green 1973, Talmy 1985, Washio 1997, Rappaport Hovav & Levin 2001, Snyder 2001, Mateu 2002, 2011, Levin & Rappaport Hovav 2005, etc). On the one hand, there are languages like English or Mandarin Chinese, where adjectival ResSPs are possible, if not robust; these are the so-called "satellite-framed" languages in Talmy's (1985, 2000) terminology. On the other hand, there are also languages, the "verb-framed" ones in Talmy's typology, where adjectival ResSPs are simply not grammatical. The example below from Greek illustrates the impossibility of an adjectival ResSP[4]:

[4] These examples might (marginally) be grammatical under an irrelevant reading, namely a depictive interpretation of the adjective, i.e. the table was wiped spotless while the table was clean.

(4) Verb framed languages – no resultatives
*O Giannis skupise to piato tu **katharo**. (Greek)
the Giannis wiped the plate his clean.
Intended: 'Giannis wiped his plate clean.'
(Giannakidou & Merchant 1999, ex. 7)

Another observation generally made about ResSPs is that, in the languages that permit them, they are subject to certain universal-like constraints (see especially Giannakidou & Merchant 1999). Three such specifications are salient, as listed below. In this paper we are mostly interested in the third property (although we provide a brief description of the first two characteristics too).

(5) Adjectival ResSPs characteristics
i. Only one result is possible per (complex) event (Tenny 1994);
ii. "A resultative phrase may be predicated of the immediately postverbal NP but may not be predicated of a subject or of an oblique complement" (Levin & Rappaport Hovav 1995: 34);
iii. Primary predicate must include a process (Dowty 1979).

The first property describes the observation that languages where adjectival ResSPs are possible do nevertheless restrict them to one per clause. This correctly predicts the ungrammaticality of examples such as (6), which contains two resultatives. Importantly, this sentence cannot be interpreted as meaning that as a result of wiping the table became clean and it also became spotless.

(6) *John has wiped the table *clean spotless*.

English also illustrates the second property. The literature on resultatives has emphasized the observation that adjectival ResSPs are not well-formed if their host is an external argument (see Simpson 1983, Rothstein 1983, Levin & Rappaport Hovav 1995, a.o.). For example, the secondary predicate *tired* in (7) cannot be interpreted as a resultative (i.e. entailing that the worker got tired as a result of his pounding the metal). Only a depictive reading might be possible for some speakers, entailing that the worker was tired throughout the event of pounding the metal.[5] Similarly, a resultative on an oblique argument as in (8) is not possible. Out of these two restrictions, the one referring to obliques is stronger: there are languages, such as Mandarin Chinese, in which subjects can host ResSP; in fact, in many of the examples presented in this paper, the argument hosting the ResSP is a subject and even an agent.

[5] A reviewer points out examples such as *The water froze solid* or *The door slammed shut* or contexts of the type *They followed the prisoner to the gate*, in which resultativity appears to be constructed on the subject. The literature has pointed out numerous differences between these contexts and canonical resultatives; for example, the first two are possible in verb-framed languages that do not permit adjectival ResSPs, while the latter is not problematic cross-linguistically and moreover does not exhibit syntactic and semantic features normally associated with resultatives. Observations of this types motivate setting these cases outside the class of proper resultative secondary predicates.

(7) *The worker has pounded the metal **tired**. (under a resultative interpretation)
(8) *The hunter shot at the bears **dead**.

According to the third property, the only way ResSPs can be constructed in human languages is by modification of a matrix predicate which encodes a process. Processes include activities, achievements, and accomplishments (see fn. 2), but not states. As we have already seen in examples such as (2), this requirement is active in English and, therefore, adjectival ResSPs cannot be constructed from stative predicates. The additional examples given below (from Simpson 1983 or Levin & Rappaport Hovav 1995) further strengthen the conclusion that a stative root cannot conflate with a ResSP in English:

(9) English – no ResSPs with statives
a. *Medusa saw the hero into a stone.
(intended: as a result of her seeing him, the hero turned into a stone)
(Simpson 1983: 146, ex. 24)
b. *John stayed/sat/lay bored.
(intended: as a result of his staying/sitting/lying, John got bored;
c. *The botanist smelled the moss dry from across the room.
(intended: as a result of his smelling, the moss became dry)
(Levin & Rappaport Hovav 1995, ex. 65b)
d. *The Loch Ness monster appeared famous.
(intended – the monster got famous as a result of its appearing)
(Levin & Rappaport Hovav 1995, ex. 66a)
e. *John was sick unhappy.
(intended: as a result of his being sick, John got unhappy)

In this paper we are precisely concerned with the problem of stativity. Contrary to the putatively universal property in (5iii), which limits the presence of ResSPs to processes, we see that in Mandarin Chinese stative roots are possible. This split raises various questions. Are we dealing with true statives in Mandarin Chinese? In what sense are resultatives constructed from statives different from English ResSPs, from a formal point of view? We start in Section 3 by addressing the problem of stativity.

3. ResSPs with stative roots in Mandarin Chinese

Mandarin Chinese is an uncontroversial "satellite-framed" language, where ResSPs are robust (Lu 1977, Li & Thompson 1981, Tsao 1990, Li 1990, 1998, Sybesma 1991, 1993, 1999, Cheng & Huang 1994, Zou 1994, Lin 1996, 1998, Lin 2004, Li 2007, 2008, a.o). They also exhibit wider distribution and more complex syntactic frames than their English counterparts, as the rich literature[6] on the topic has shown. One of the crucial differences is the possibility of Mandarin Chinese ResSPs with stative roots (Li 2007, 2008 contains an extensive discussion). The two examples in (3) we started with are

[6] See especially Li (2007, 2008) for an extensive list of references.

repeated below in (10a-b). Other ResSPs with statives are in (10c)-(10f), as well as throughout the paper.

(10) Mandarin Chinese ResSPs with statives

a. Zhāngsān **lèi- wān** le yāo.
Zhangsan tired bend PFV waist.
'As a result of Zhangsan's being tired, his waist became bent.'
(Li 2007, ex.14a, adapted)

b. Tā **zuò-lèi /nì** le.
he sit-tired/bored PFV
'As a result of his sitting, he became tired/bored.'

c. Zhāngsān **è- bìng** le.
Zhangsan hungry sick PFV
'As a result of Zhangsan's being hungry, he became sick.'
(Li 2007, ex.14b, adapted)

d. Tā **kàn-lèi /nì** le.
He see-tired/bored PFV
'As a result of his seeing/looking, he became tired/bored.'

e. Zhāngsān **bìng-huāng** le Lǐsì.
Zhangsan sick nervous PFV Lisi
'Zhangsan's being sick got Lisi nervous.'
(Li 2007: 95, fn. 6, ex.i, adapted)

f. Nà jiàn shì jí- bìng le Zhāngsān.
that CLF matter worry sick PFV Zhangsan
'That matter got Zhangsan sick from his worrying.'
(Li 2007, ex.45a, adapted)

These constructions are surprising when examined against the universal properties assumed to hold in (5), especially (5)iii). At least two questions are apparent: are the main predicates indeed statives? Are we dealing with true ResSPs in these cases, or are these other types of complex predicate constructions, where stativity might not be relevant? We first examine diagnostics which demonstrate the stative character of the roots (subsection 3.1). Then in section 4 we show that these examples also pass resultativity tests.

3.1 True statives

Some researchers have proposed that despite the presence of what look like stative roots, sentences similar to (10) might not, in fact, be counterexamples to the stativity restriction. For example, Li (1998)[7] argues that the predicate *è* 'hungry' in (10c) is an

[7] For this author, ResSPs in Mandarin Chinese require a V1 which is "restricted to activity and achievement-denoting verbs" (Li 1998: 19). Other researchers avoid the issue of stativity by invoking independent factors. For example, Lin (2004: 119) assumes that sentences similar to those in (10) are "spurious verbal compounds" (p. 96) and such "double-state verb compounds…do not describe a complex bi-eventive structure consisting of a causing activity and a result state". The problem is that many of these examples do involve a causing state, as Lin (2004) also notices.

achievement. However, as Li (2007: 11, fn. 11) correctly points out, the resultative complex verb is not interpreted as 'become sick as a result of becoming hungry', but rather as 'become sick after a period of being hungry'.[8] Moreover, when analyzed in isolation, there are three important diagnostics which support the stative nature of these predicates: (i) incompatibility with progressive aspectual markers; (ii) stative behavior under perfective markers and degree material; (iii) no inchoative interpretations. I address each of these diagnostics below.

3.1.1 Stativity and progressive markers

Mandarin Chinese exhibits a progressive marker, which is spelled-out as *zài* (Li & Thompson 1981, a.o.) and which complies with a restriction generally seen with progressives, namely that it cannot attach to states. The examples in (11) illustrate the contrast between states and typical activities. Stative predicates such as *(be) tired, hungry, hot, see,* etc. are not well-formed with *zài*. On the other hand, an activity such as *run* accepts the progressive marker.

(11) States and activities with the progressive marker

a.	*Zhāngsān zài lèi. Zhangsan PROG tired Intended: 'Zhangsan is being tired.'	State
b.	*Zhāngsān zài è. Zhangsan PROG hungry Intended: 'Zhangsan is being hungry.'	State
c.	*Zhāngsān zài rè. Zhangsan PROG hot Intended: 'Zhangsan is being hot.'	State
d.	*/??Zhāngsān zài kàn. Zhangsan PROG see Intended: 'Zhangsan is seeing.'	State
e.	Zhāngsān zài pǎo. Zhangsan PROG run. 'Zhangsan is running.'	Activity

Despite their ill-formedness with the progressive marker, the states illustrated here can host ResSPs. Example (11a) shows the predicate *lei* 'tired', (11b) the predicate *e* 'hungry', (11c) the predicate *rè* 'hot', and (11d) the predicate *kàn* 'see'.

3.1.2 Interactions with the perfective marker *-le*

We now turn to another aspectual marker of Mandarin Chinese, which has given rise to intense debate, namely *le* (Li & Thompson 1981, Sybesma 1999, a.o.). When

[8] See also the examples in (16).

attached to eventive roots, *le* outputs a perfective interpretation, as seen with activity predicate *pǎo* ‘run’ in (12):

(12) Activities and the perfective marker *-le*
Zhāngsān **pǎo le**. Activity
Zhangsan run PFV
‘Zhangsan has run (and now he’s escaped).’

As Mandarin Chinese lacks overt morphology that can disambiguate lexical classes, this marker acts as a reliable test setting (adjectival) stative uses apart from verbal uses. The facts go as follows: as we see in (13), when *-le* is added to a stative root, it blocks the perfective reading, and the predicate must instead be interpreted as inchoative. Moreover, stative predicates are possible with degree markers, but crucially not in the context of *-le*, as the data in (14) show. These splits demonstrate, on the one hand, that roots like *gānjìng* ‘clean’ or *è* ‘hungry’ are stative. On he other hand, they indicate that the marker *-le* is incompatible with degrees when combining with a stative root.

(13) Statives and inchoativity
a. Fángjiān **gānjìng-le**.
room clean INCH
‘The room became clean.’
#‘The room was clean.’
b. Zhāngsān **è -le**.
Zhangsan hungry INCH
‘Zhangsan became hungry.’
#‘Zhangsan was hungry.’

(14) Statives and degrees
a. hěn **gānjìng**(*-le) de[9] fángjiān
very clean PFV/INCH LK room
‘a very clean room’
b. hěn **è** (*-le) de wǒ
very hungry PFV/INCH LK man
‘a very hungry man’

Also note that the stative roots discussed in these examples do not allow degree material when combining with a ResSP, as seen in (15). As we show in the next section, this indicates that resultativity is, in fact, built on the degree component in Mandarin Chinese. The ResSP itself takes the position of the degree, thus no other degree can be added, as a result of the constraint in (5i) which blocks the presence of more than one result in an event. The resultative construction, in turn, is possible with the perfective marker because the latter attaches to the complex *e-bing* ‘hungry-sick’, which, as expected, is not stative –

[9] ‘DE’ is a type of linker needed to connect modifiers to nominals.

as we see in the next section the resultative complex has an internal structure to which gradation and scales contribute delimitation.

(15) Statives under resultatives
*Zhāngsān hěn è- **bìng** -le.
Zhangsan very hungry sick PFV
#'As a result of Zhangsan's being very hungry, he felt sick.'
#'As a result of Zhangsan's becoming very hungry, he felt sick.'

This example points to another important observation: although stative roots are possible with inchoative markers, as in (13), when the statives are part of the resultative construction, the inchoative reading of *-le* is not possible anymore, as illustrated in the additional examples in (16). This indicates that the inchoative constructs telicity in that it entails the presence of an endpoint to the predicate. As the ResSP itself adds an endpoint, the presence of both the inchoative and the ResSP will, once again, result in a violation of the constraint in (5i), which permits only one result in an event.

(16) Resultatives and inchoativity
a. Wǒ kùn- míhú -le.
I sleepy unconscious PFV
'I was so sleepy that I became unconscious as a result.'
#'As a result of me getting/becoming sleepy, I became unconscious.'
b. Zhāngsān è- bìng -le.
Zhangsan hungry sick PFV
'As a result of Zhangsan's being hungry, he became sick'.
#'As a result of Zhangsan's becoming hungry, he became sick.'
c. Tā rè- yūn -le.
He hot faint PFV
'He fainted as a result of feeling/being hot.'
#'As a result of his getting hot, he fainted.'

To summarize, this subsection has provided three diagnostics, namely the incompatibility with the progressive marker *zài*, compatibility with degree material, and restriction to inchoative interpretations with the *le* marker; all these tests support the *stative* character of the main predicates in resultative constructions as those in (10).

Table 1. Stativity diagnostics in Mandarin Chinese

Stativity diagnostics	
Incompatibility with the progressive aspectual marker *zài*	yes
Compatibility with degree material	yes
Interactions with *le* aspectual marker – only inchoativity	yes

3.1.3 Not all statives can construct resultatives

The problem of stative ResSPs is further complicated by the observation that not all roots that would otherwise qualify as stative can construct resultatives. Going through a list of typical stative predicates across languages (Rothmayr 2009, Maienborn 2003, 2007, a.o.), we come across typical states like *admire*, *know*, *feel*, *respect*, *envy*, etc., that cannot merge with result phrases. Various ungrammatical examples are given below:

(17) statives, but no resultatives

a. *Tā bǎ wǒ **xiànmù-kuàilè** -le.
he DOM I admire happy PFV
Intended: 'As a result of his admiring me, I became happy.'

b. *Tā bǎ wǒ **zūnzhòng-kuàilè** -le.
he DOM I respect happy PFV
Intended: 'As a result of his respecting me, I became happy.'

c. *Měigè háizǐ dou **zhīdào-cōngmíng** -le.
every child all know intelligent PFV
Intended: 'As a result of their knowing, all the children got intelligent.'

d. *Wǒmén **xiāngxìn-kuàilè** -le.
we believe happy PFV
Intended: 'As a result of our believing, we became happy.'

e. *Wǒ bǎ nǐ **xiànmù-fènnù** -le .
I DOM you envy angry PFV
Intended: 'As a result of my envying you, you became angry.'

f. *Tā bǎ wǒ **ài- kuàilè** -le.
he DOM I love happy PFV
Intended: 'As a result of his loving me, I became happy.'

If we try to apply the *zài* test, which, as we saw above, signals statives, we notice that ill-formedness arises, as expected. Thus, we have evidence that these predicates must be stative; however, they are different from the other statives in that they do not accept ResSPs. An analysis of ResSPs must explain this fact too.

(18) Stativity tests

a. */??Tā zài xiànmù háizǐ.
he PROG admire child
Intended: 'He is admiring children.'

b. *Tā zài zhīdào.
he PROG know
Intended: 'He is knowing.'

c. *Tā zài bǎ jiàoshòu zūnzhòng.
he PROG DOM professor respect
Intended: 'He is respecting the professor(s).'

d. *Wǒmén zài xiāngxìn.
we PROG believe
Intended: 'We are believing.'

e. */??Tā zài ài.
he PROG love
Intended: 'He's loving.'
f. *Wǒ zài xiànmù.
I PROG envy
Intended: 'I'm envying.'

4. Resultativity diagnostics

This section addresses various diagnostics demonstrating that the examples under scrutiny here are unambiguous resultatives. These are: (i) the presence of both restitutive and repetitive readings (4.1); (ii) mono-clausal *dé*-paraphrases (addressed in 4.2); (iii) constructed telicity (shown in 4.3). These tests set aside ResSPs from other serial verbs, for example so-called "consecutive verbal complexes" of the type 'Zhangsan was hungry and then was sick'. Under the latter the presence of stative roots would not be surprising, but such constructions are not telic (see Li 2007 for further discussion).

4.1 Both restitutive and repetitive readings

A characteristic of ResSPs cross-linguistically is that they give rise to both restitutive and repetitive readings, which can be detected in contexts with the adverbial *again* (Beck and Snider 2001). These interpretive possibilities derive from the complex structure of these constructions. Even if they are mono-clausal, both the root and the resultative component are visible for sentential syntax processes. The two readings are seen in the example below:

(19) Both restitutive and repetitive readings
Tā yòu zuò nì le.
he again sit bored PFV
Lit: 'He again sat bored.'
Restitutive reading (with 'again'): the state of boredom is restored.
Repetitive reading (with 'again'): the eventuality of sitting till bored is repeated.

4.2 Paraphrases with *dé*

Another diagnostic which individualizes resultatives among the serial constructions of Mandarin Chinese is that they can be paraphrased as monoclausal configurations with the *dé* resultative marker (see also Li 2008, a.o.). We present relevant examples with both non-stative roots, as in (20), and with stative roots, as in (21). As Li (2007, 2008) correctly points out, there is evidence that *dé* configurations are monoclausal, from the positioning of the *le* marker. This latter element cannot span across an intervening sentence; therefore, in example (22), the *le* marker must be repeated after each predicate, as the complementizer *erqie* 'but also' and the correlative *budan* 'not only' have

sentential status, in the sense that they link two sentences, and not two predicates at the *v*P or VP level.

(20) Monoclausal paraphrases with *dé*
a. Zhāngsān **kū- shī** le shǒupà. Non-stative root
Zhangsan cry wet PFV handkerchief
'Zhangsan cried the handkerchief wet.'
b. Zhāngsān **kū- dé** shǒupà dōu **shī** le.
Zhangsan cry RES handkerchief all wet PFV
'Zhangsan cried (so much) that even the handkerchief got wet.'

(21) Monoclausal paraphrases with dé
a. Zhāngsān **è- bìng** le. Stative root
Zhangsan hungry sick PFV
'As a result of being hungry, Zhangsan became sick.'
b. Zhāngsān è- dé dà bìng le yīchǎng.
Zhangsan hungry RES big sick PFV one time.
'Zhangsan was so hungry that he got sick.'

(22) Zhāngsān budan **ca- *(le)** zhuozi, erqie **xi- *(le)** yifu.
Zhangsan not only wipe PFV table but also wash PFV clothes
'Zhangsan not only wiped the table, but also washed the clothes.'
(Li 2007: 100, ex. 24, adapted)

Given that the *-le* marker signals monoclausality, it cannot intervene between the two predicates. The examples below illustrate this property with both eventive resultatives, in (23a) and (23b), and stative resultatives, in (23c) and (23d):

(23) Monoclausality
a. Zhāngsān **tuī- kāi** le mén.
Zhangsan push open PFV door
'Zhangsan pushed the door open.'
b. *Zhāngsān tuī **-le** -kāi mén.
Zhangsan push PFV open door
Intended: 'Zhangsan pushed the door.'
c. Zhāngsān **è -bìng** le.
Zhangsan hungry sick PFV
'As a result of his being hungry, Zhangsan became sick.'
d. *Zhāngsān **è -le** -bìng.
Zhangsan hungry PFV sick
Intended: 'As a result of his being hungry, Zhangsan became sick.'

4.3 Constructed telicity

Yet another diagnostic supporting the resultative nature of these constructions is their telicity. Cross-linguistically, ResSP normally allow only telic time adverbials, as seen in (24). Following Vendler (1976), prepositional phrases/adjuncts headed by *in*

signal boundedness (and thus telicity), while *for XP* can only be attached to durative, unbounded predicates. In (25) below, we see that stative roots allow durative adverbials, as expected. The Predicate-ResSP unit in (26), on the other hand, is not compatible with *for* durative adverbials, allowing only the telic ones. In other words, when the Res component is merged with the stative root, the complex must act like a telic structure. As a result, the eventuality of seeing or looking (around) in (25a) can be durative (e.g. looking around for an hour), but in (26a) the complex *see tired* (becoming tired as a result of seeing or looking around) cannot be durative. This demonstrates that examples such as e.g. 26a) are true resultatives.

(24) English
  a. He pounded the metal in an hour/for an hour.
  b. He pounded the metal flat in an hour/*for an hour. [10]

(25) Stative roots are ill-formed with telicity markers
  a. √ Tā kàn le yīgè xiǎoshí.
    he see PFV one hour
    'He saw/looked (around) for one hour.'
  b. *Tā yīgè xiǎoshí jiù kàn le.
    he one hour right after see PFV
    Intended: 'He saw in an hour.'

(26) When results are added to stative predicates, telicity is obligatory
  a. Tā yīgè xiǎoshí jiù kàn lèi le.
    he one hour right after see tired PFV
    'As a result of his seeing, he became tired in an hour.'
  b. *Tā **kàn lèi** yīgè xiǎoshí le
    he saw tired one hour PFV
    'As a result of his seeing, he became tired for an hour.'

Table 2 summarizes the resultativity diagnostics we have introduced in this section.

Table 2. Resultativity Diagnostics

Resultativity diagnostics for res-stative complexes in Mandarin	
Restitutive and repetitive readings	yes
Paraphrase with *dé*	yes
Constructed telicity	yes

In a nutshell, what we see in the data above is that true resultatives in Mandarin Chinese can also be constructed from roots that pass stativity tests when used in isolation. This is unexpected given what languages like English show with respect to ResSP, and also given the general prohibition against resultatives built on states. We also see, on the

[10] The *for* phrase, if possible, forces a reiterative reading of the V-Res, that is the pounding flat eventuality was repeated for the duration of the entire hour.

other hand, that not all roots that pass stativity tests allow resultatives. The question is how to account for these facts. In the next section we review the most prominent accounts proposed for resultatives, from both a semantic and a syntactic perspective, and show that they cannot derive the data.

5. Resultativity cannot be built from stativity

5.1 Resultatives as accomplishments

One of the earliest formal accounts proposed for ResSPs is to be found in Dowty (1979), who takes these constructions to be derived accomplishments, that is processes with a necessary endpoint (see also fn. 2). Constructional resultative meanings are assumed to be mediated by operators with the semantics of CAUSE and BECOME, as in (27):

(27) John wiped the floor clean.
[**wipe´(j,f**) CAUSE BECOME (clean´(**f**))**]**

(Dowty 1979)

Crucially, this framework (and much research in lexical semantics since), sees *states* as semantic primitives, undecomposable and thus incompatible with modification by complex operators. Also given that states are not dynamic, they cannot construct accomplishments via operators such as become[11]. From this it follows that derived resultativity cannot be based on a stative root. Thus, examples such as the English ones in (2) or (9) are predicted to be ungrammatical. But then how are the Mandarin Chinese stative resultatives to be derived?

5.2 Lexical-Semantic approaches

On the lexico-semantic side, Levin & Rappaport (1995) follow the main assumption of Dowty's (1979) that the resultative phrase is taken to map an activity into an accomplishment. In this analysis it is stated explicitly that 'resultative phrases are incompatible with all statives, whether expressed by transitive or unaccusative verbs' (Levin & Rappaport 1995: 61). This type of clash is attributed to the "typology of ontological categories of eventualities"; as we have already mentioned, according to Levin & Rappaport Hovav (1995, and much subsequent work), there *cannot* be an eventuality type defined as a "delimited state". As ResSPs require delimitation, statives cannot merge with them. The only delimited eventualities are accomplishments and achievements, which, however, are always non-stative.

[11] As one reviewer points out, Rappaport Hovav & Levin (1998) show that states can be modified by the operator BECOME and derive achievements. However, resultatives are more complex in that they also involve other pieces of structure (for example, delimitation), blocking statives. This explains why statives are not possible with resultatives in English.

More generally, the restriction against statives is also entailed by accounts which do not postulate a causative component in the composition of ResSPs; the incompatibility arises instead from "temporal dependency" and "coextensiveness" requirements (Rappaport Hovav & Levin 2001) or the homomorphism mapping (Wechsler 2005).

In one of the few works acknowledging the issue of stativity, Li (2007, 2008) builds on Rappaport Hovav and Levin's observations, developing an Event Structure Model which views all resultatives as causatives. On this account, as long as pragmatic restrictions are observed, states can participate in the creation of ResSPs. This is so because they are causing states, following the template below (one of the templates assumed for resultatives):

(28) Complex Causative Event Structure Template
[[**x** <*STATE*> CAUSE [BECOME [**x** or **y** <*STATE*>]]]
(Li 2007: 117, ex. 47b)

However, even if this account predicts that statives should be possible with ResSPs, it does not explain why certain types of statives are blocked, as we have seen in the examples in (17). Here the problem is certainly not a pragmatic one; for example, admiration from others can definitely cause someone to be happy.

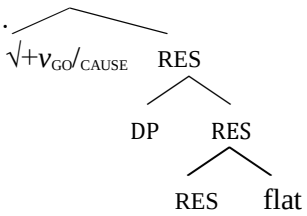
5.3 Syntactic accounts

Under canonical syntactic analyses, resultative interpretations are obtained via a dedicated process of conflation, parametrized cross-linguistically, as in (29).

(29) The grammar {disallows*, allows} conflation of a root with a null light verb during the syntactic derivation.
(Mateu 2011, a.o.)

Building on Talmy (2000), recent instantiations of the syntactic approaches (Snyder 2001, Mateu 2002, McIntyre 2004, Zubizaretta & Oh 2007, Mateu 2011, a.o.) define conflation as a process of direct/external Merge of a root which specifies the supporting event (also dubbed the manner component) with a null light verb expressing {causation/motion} in a constructional or configurational way. A schematic example is given in (30):

(30) Conflation
a. They hammered the metal flat.
b. [They [$_{vP}$[$_{v}$ √HAMMER GO/CAUSE] [$_{SC\ RES}$ the metal flat]]]
(Direct Merger)
c. …



Syntactic accounts in this direction can be applied to stative resultatives as long as suitable types of null light verbs can be identified that support conflation with stative roots, assuming that stative roots are not undecomposable primitives. But simply postulating a GO/CAUSE null verb is not enough; the analysis will run into the same problem faced by Li (2007, 2008), namely impossibility of explaining why only certain types of statives are permitted in ResSPs. Why couldn't GO/CAUSE conflate with all types of statives?

In the next section we underline two important properties of statives: (i) they are not undecomposable primitives; (ii) various types of statives can have distinct internal structures, predicting variation when it comes to the limits of resultativity.

6. Types of resultatives and their interaction with states

This section takes preliminary steps towards a better understanding of the typology of resultatives, such that statives resultatives can be integrated. We point out that a crucial ingredient is uncovering the possible internal structure of various types of statives. We show that three major types of statives are possible under resultatives in the Mandarin Chinese data: (i) statives that contain an event argument (Maienborn 2003, 2007); (ii) statives that contain a causative component (especially psych-statives); iii) statives which encode a scalar change, being lexically associated with a scale. We do not commit to any particular syntactic analysis; as long as the internal complexity of the relevant types of statives is captured, most syntactic configurations can be adapted to stative resultatives.

6.1 Not all states are born equal

Both Maienborn (2003, 2007) and Rothmayr (2009) have demonstrated that, despite appearances, not all states are born equal. Maienborn (2003, 2007) divides states into two important classes: (i) Davidsonian states – which contain an eventuality argument in Davidson's terms: *sit, stand, sleep, wait, gleam*, etc.; (ii) Kimian states, which lack an eventuality argument: *know, weight, own, resemble,* etc. Davidsonian eventualities are described as particular spatio-temporal entities with functionally integrated participants, while Kimian states are abstract objects for the exemplification of a property *P* at a holder *x* and time *t*. The more complex structure in Davidsonian states allows them to combine with manner adverbials and be located in time and space. For our purposes, these properties are important as they provide dynamic structure and delimitation; the possibility is thus open to resultativity. K(iminian) states lack these properties and thus they should not be able to derive resultatives.

Maienborn's (2003, 2007) split provides the right results for predicates like *sit, lie, stand* in Mandarin Chinese (we leave aside here the presentation of all the tests due to lack of space). But it does not derive the relevant distinctions across all the types of resultatives with statives. Two cases are relevant, namely stative psych predicates (such as *worry* vs *fear*) and "adjectival" statives (such as *tired*), which, despite potential

classification as K-states, do allow resultatives. We address psych predicates in subsection 6.2 and "adjectival" statives in subsection 6.3.

6.2 Psych statives

Much discussion (Grimshaw 1990, Pesetsky 1995, etc.) into the nature of psych predicates has emphasized the observation that despite the stative behavior of this class in many languages, its members are of two types: (i) pure statives: *fear*, *love*, *hate*, etc.; (ii) causative Psych predicates formed from statives: *frighten*, *surprise*, *amuse*, *worry*, etc. Importantly, in both English and Mandarin Chinese, result phrases are only possible with those psych statives that contain a causative component. This is not surprising; as we saw above, many accounts postulate the necessity of a causative functional projection in the realization of resultatives.

(31) English stative causative psych predicates and result phrases
a. We worried ourselves sick. stative causative[12]

b. * We feared the bears speechless. stative
(Levin & Rappaport Hovav 1995)

(32) Mandarin stative causative psych predicates and result phrases
a. Nà xiaǒhuǒzi jí bìng le. stative causative
that young guy worry ill PRF
'That young guy got ill as a result of worrying'
b. *Nǔháizǐmén hàipà bìng le shīzi. stative
girls fear sick PRF lion.
Intended: 'As a result of their fearing the lion, the girls became sick.'

6.3 Adjectival statives

What about adjectival statives such as *tired*, *hungry*, etc., which can construct ResSPs, as we have seen in (10)? These classes count as adjectival; in Mandarin Chinese they take the degree word *hěn* 'very', a category not possible with verbal statives, such as *sit*, *worry*, etc. (see Li & Thompson 1981, or Li 2007, 2008, a.o., for exemplification). But they also count as K-states, in Maienborn's (2003, 2007) taxonomy, and a causative component cannot be easily postulated for their internal structure. What allows them to create ResSPs?

We would like to propose that the crucial piece of structure in these adjectival statives that allows ResSP formation is a static scale; the secondary predicate denotes an endpoint to the scale introduced by the adjective. We build on crucial observations by Rappaport Hovav (2008) that scalar change is the basis of a fundamental lexical-aspectual distinction with eventualities, as illustrated in (33):

[12] The psych verb *worry*, if classified as stative, shows that ResSPs can use limited types of statives in English too.

(33) Events and scalar change
  a. verbs denoting events of scalar change: *warm*, *ripen*, *cool*, *fall*, *ascend*, etc.
  b. verbs which denote events of nonscalar change: *play*, *scream*, *laugh*, etc.

The verbs denoting events of scalar change are those that (lexically) specify a scale; crucially, while all dynamic verbs are potentially associated with a scale, "with some verbs this is a lexical property and with others this is not" (Rappaport Hovav 2008: 18). It has also been observed that those verbs that lexically specify a scale can have a telic interpretation even if there is no overt expression that explicitly bounds the scale. Kearns (2007) has shown that this is the case with deadjectival verbs such as *cool*, *lengthen*, *widen*, *smooth*, *flatten*, etc. The most common kind of scale that is lexicalized is a property scale, which generally corresponds to a non-derived adjective. Also, scalar verbs are gradable or entail the potential of change; additionally they are inherently telic or allow telicity alternations.

We build on this important observation to propose that the Mandarin Chinese adjectival statives permit the construction of resultativity as they contain a lexically specified scale, which introduces delimitation. An important parametrization in ResSP emerges: while in English the resultative requires the conflation of a verbal root with a functional projection BECOME/GO, in Mandarin Chinese the relevant functional projection can also be the Scale/Degree component. We can further adapt Rothstein (2004), who discusses type-shifting rules that construct a "change" verbal category (a process) by adding an unspecified result or an initial stage. Importantly, the scale can introduce a specified result.

What the Mandarin Chinese stative resultative constructions imply, in fact, is the existence of a property (*be tired*, *be worried*, *be in a seated position*, etc.) specified with a scale that allows the state's progression through the degrees of the scale until the highest point on the scale is reached and a result is obtained; for example, the highest degree of being hungry has as a result the state of getting sick. A similar explanation can be extended to spatial statives such as *stand/sit* – as the eventuality of *standing* is progressing, the highest degree can be reached such that a result is obtained (being bored, etc.). Stative predicates such as *admire*, *envy*, etc. as in (17), do not have a lexicalized scale, as these are not predicates constructed from non-derived adjectives. Moreover, they do not contain an event argument and are not inherently causativized either. Thus, resultativity cannot be constructed with them. What about psych causatives? As the latter are possible in English too, it must be the causative component which permits the construction of resultativity. We have seen that the CAUSE operator plays a fundamental role in both lexico-semantic and syntactic accounts for resultativity[13].

[13] A reviewer asks about whether other classifications of statives (mental/cognitive, be-statives, possession-statives, etc.) might play a role in the construction of resultatives from statives. Our results have not revealed other stativity parameters that might be relevant. However, this is an important aspect that certainly requires further investigation. Due to the space limitations in this paper, we leave it for further work.

7. Conclusions

The discussion in this paper has shown that stativity can construct resultativity in Mandarin Chinese as long as internal compositional structure is present in statives, such as the Davidsonian event argument, a CAUSE operator or a scale component. Scalar change can introduce delimitation, with the resultative secondary predicate being the end point. This latter strategy is at the core of an important parametrization of resultativity: on the one hand, there are languages of the English type which allow sultativity only with dynamic predicates that undergo conflation with BECOME/GO/CAUSE operators; on the other hand, there are languages like Mandarin Chinese which allow resultatives with non-dynamic predicates as long as a scale component introduces delimitation.

References

Beavers, J. 2012. Resultative constructions. In R. I. Binnick (ed.), *The Oxford Handbook of Tense and Aspect*, 908-933. Oxford: Oxford University Press.

Beck, S. & Snyder, W. 2001. The resultative parameter and restitutive *again*. In C. Fery & W. Sternefeld (eds.), *Audiatur Vox Sapientiae: A Festschrift for Arnim von Stechow*, 48-69. Berlin: Akademie Verlag.

Chang, J.-H. 2003. Event structure and argument linking in Chinese. *Language and Linguistics* 4: 317-351.

Cheng, L. L.-S. & Huang, C.-T. J. 1994. On the argument structure of resultative compounds. In M. Y. Chen & O. J. L. Tzeng (eds.), *In Honour of William S-Y. Wang: Interdisciplinary Studies on Language and Language Change*, 187-221. Taipei: Pyramid Press.

Dowty, D. R. 1979. *Word Meaning and Montague Grammar*. Dordrecht: Reidel.

Giannakidou, A. & Mercahnt, J. 1999. Why Giannis can't scrub his plate clean: on the absence of resultative secondary predication in Greek. Paper available at: http://home.uchicago.edu/merchant/pubs/gk.resultatives.pdf

Green, G. 1973. A syntactic syncretism in English and French. In B. Kachru, R. B. Lees, Y. Malkiel, A. Pietrangeli & S. Saporta (eds.), *Issues in Linguistics. Papers in Honor of Henry and Renée Kahane*, 257-278. Urbana, IL: University of Illinois Press.

Grimshaw, J. 1990. *Argument Structure*. Cambridge, MA: MIT Press.

Kearns, K. 2007. Telic senses of deadjectival verbs. *Lingua* 117: 26-66.

Kratzer, A. 2005. Building resultatives. In C. Maienborn & A. Wöllstein-Leisten (eds.), *Event Arguments: Foundations and Applications*, 177-212. Berlin, Boston: Mouton de Gruyter.

Lakoff, G. 1970. *Irregularity in Syntax*. New York: Holt, Rinehart and Winston.

Levin, B. & Rappaport Hovav, M. 1995. *Unaccusativity: At the Syntax-Lexical Semantics Interface*. Cambridge, MA: MIT Press.

Li, C. 2007. Mandarin Resultative Verb Compounds: Where Syntax, Semantics and Pragmatics Meet. PhD dissertation. University of Yale.

Li, C. 2008. *Mandarin Resultative Verb Compounds: Where Syntax, Semantics and Pragmatics Meet*. Munich: LINCOM Europa.

Li, Y. 1990. On V-V compounds in Chinese. *Natural Language and Linguistic Theory* 8 (2): 177-207.

Li, Y. 1998. Chinese resultative constructions and the Uniformity of Theta Assignment Hypothesis. In J. Packard (ed.), *New Approaches to Chinese Word Formation*, 285-310. Berlin and New York: Mouton de Gruyter.

Li, C. & Thompson, S. A. 1981. *Mandarin Chinese: A Functional Reference Grammar*. Berkeley, CA: University of California Press.

Lin, H.-L. 1996. A lexical-syntactic analysis of resultative compounds in Mandarin Chinese. *Studies in the Linguistic Sciences* 26: 193-204.

Lin, H.-L. 1998. The Syntax-Morphology Interface of Verb-Complement Compounds in Mandarin Chinese. PhD dissertation. University of Illinois at Urbana Champaign.

Lin, J. 2004. Event Structure and the Encoding of Arguments: The Syntax of the Mandarin and English Verb Phrase. PhD dissertation. MIT.

Lu, J. H-T. 1977. Resultative verb compounds vs. directional verb compounds in Mandarin. *Journal of Chinese Linguistics* 5: 276-313.

Maienborn, C. 2003. Against a Davidsonian analysis of copula sentences. In M. Kadowaki & S. Kawahara (eds.), *Proceedings of the Thirty-Third Annual Meeting of the North East Lingusitic Society*, 167-186. Boston: GLSA.

Maienborn, C. 2007. On Davidsonian and Kimian states. In I. Comorovski & K. von Heusinger (eds.), *Existence: Syntax and Semantics*, 107-130. Dordrecht: Kluwer.

Mateu, J. 2002. Argument Structure: Relational Construal at the Syntax-Semantics Interface. PhD dissertation. Universitat Autònoma de Barcelona.

Mateu, J. 2011. Types of resultatives and parametric variation. Paper available at: http://filcat.uab.cat/clt/verbalelasticity/Handouts/VerbElasTalmy_UAB_Mateu.pdf.

McIntyre, A. 2004. Event paths, conflation, argument structure and VP shells. *Linguistics* 42 (3): 523-571.

Napoli, D. J. 1992. Secondary resultative predicates in Italian. *Journal of Linguistics* 28 (1): 53-90.

Pesetsky, D. 1995. *Zero Syntax. Experiencers and Cascades.* Cambridge, MA: MIT Press.

Rapoport, T. 1999. Structure, aspect and the predicate. *Language* 75 (4): 653-677.

Rappaport Hovav, M. 2008. Lexicalized meaning and the internal temporal structure of events. http://semantic.uchicago.edu/kennedy/classes/s07/events/mrh06roth.pdf.

Rappaport Hovav, M. & Levin. B. 1998. Building verb meanings. In M. Butt & W. Geuder (eds.), *The Projection of Arguments: Lexical and Compositional Factors*, 97-134. Stanford, CA: CSLI Publications.

Rappaport Hovav, M. & Levin, B. 2001. An event structure account of English resultatives. *Language* 77 (4): 766-797.

Rothmayr, A. 2009. *The Structure of Stative Verbs*. Amsterdam/Philadelphia: John Benjamins.

Rothstein, S. 1983. The Syntactic Forms of Predication. PhD dissertation. MIT.

Rothstein, S. 2004. *Structuring Events*: *A Study in the Semantics of Lexical Aspect*. Blackwell. Oxford.

Simpson, J. 1983. Resultatives. In L. Levin, M. Rappaport & A. Zaenen (eds.), *Papers in Lexical-Functional Grammar*, 143-159. Bloomington, IN: Indiana University Linguistic Club.

Snyder, W. 2001. On the nature of syntactic variation: Evidence from complex predicates and complex word formation. *Language* 77 (2): 324-342.

Sybesma, R. 1991. Results in Chinese: Resultatives to an extent. *MIT Working Papers in Linguistics* 14: 271-284.

Sybesma, R. 1993. On the ambiguity of riding tired. *Linguistics in the Netherlands:* 129-140.

Sybesma, R. 1999. *The Mandarin VP*. Dordrecht: Kluwer Academic Publishers.

Talmy, L. 1985. Lexicalization patterns: Semantic structure in lexical form. In T. Shopen (ed.), *Language Typology and Syntactic Description*, vol. III, *Grammatical Categories and the Lexicon*, 57-149. Cambridge: Cambridge University Press.

Talmy, L. 2000. *Towards a Cognitive Semantics*. Cambridge, MA: MIT Press.

Tenny, C. 1994. *Aspectual Roles and the Syntax-Semantics Interface*. Dordrecht: Kluwer Academic Publishers.

Tsao, F.-F. 1990. *Clause and Sentence Structure in Chinese: A Functional Perspective*. Taipei: Student Book.

Vendler, Z. 1957. Verbs and times. *The Philosophical Review* 66: 143-160.

Washio, R. 1997. Resultatives, compositionality, and language variation. *Journal of East Asian Linguistics* 6: 1-49.

Wechsler, S. 2005. Resultatives under the 'event-argument homomorphism' model of telicity. In N. Erteschik & T. Rapoport (eds.), *The Syntax of Aspect: Deriving Thematic and Aspectual Interpretation*, 255-273. Oxford: Oxford University Press.

Zou, K. 1994. Resultative V-V compounds in Chinese. *MIT Working Papers in Linguistics* 22: 271-290.

Zubizarreta, M. L. & Oh, E. 2007. *On the Syntactic Composition of Manner and Motion*. Cambridge, MA: MIT Press.

ON SILENT *COLOR* IN ROMANIAN

Mihaela Tănase-Dogaru*

Abstract: The main aim of the present paper is to show that there is a silent noun COLOR in Romanian (following Kayne 2005), in constructions such as *stiloul e COLOR roșu* pen.DEF is COLOR red. Silent COLOR is a qualitative classifier, occupying therefore the head of the Classifier Phrase. This silent noun can thus be added to the inventory of silent nouns in Romanian, such as NUMBER, AMOUNT and TYPE (see Tănase-Dogaru 2008, 2009, 2013, Constantinescu & Tănase-Dogaru 2007).

Keywords: silent nouns, COLOR, qualitative classifiers

1. Introduction

The main aim of the present paper is to look at data such as (1) to (3). These data will be used to show that there is a silent noun COLOR in Romanian (apud Kayne 2005).

(1) Mașina are culoarea roșie /roșu[1].
car.F-DEF has color.F-DEF red-F red-M
'The car is red.'

(2) Mașina e roșie.
car.F-DEF is red.
'The car is red'.

(3) Mașina e de culoare roșie / *roșu.
car.F-DEF is of color red-F / *red-M
'The car is red'.

This silent noun can thus be added to the inventory of silent nouns in Romanian, such as NUMBER, AMOUNT and TYPE (Constantinescu & Tănase-Dogaru 2007, Tănase-Dogaru 2008a, 2008b, 2009, 2011, 2012):

(4) Ce NUMBER de mașini are!
what NUMBER of cars has
'He has so many cars!'

(5) Ce AMOUNT de ceai a băut!
what AMOUNT of tea has drunk
'He drank so much tea!'

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[1] Some color adjectives in Romanian do not show gender variation (e.g. *verde* 'green', *roz* 'pink', etc.). Color adjectives like *roșu* 'red' or *galben* 'yellow' do inflect for gender; however, both *culoarea roșu* color.F-DEF red-M and *culoarea roșie* color-F-DEF red-F are acceptable. This is taken as strong indication that *culoare* 'color' behaves as a classifier (overt or silent).

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In the example in (1), the presence of the noun *culoare* 'color' is obligatory, and the relationship between *culoarea* and *roșie* is clearly one of modification. On the other hand, by comparing (2) and (3), one can easily notice that the noun *culoare* 'color' acts as a classifier (see Tănase-Dogaru 2008a, 2008b, 2009, 2011, 2017, Tănase-Dogaru & Ușurelu 2015), which is either silent (2) or overt (3).

Kayne (2005) shows that color adjectives should be taken to invariably modify either the overt noun *color* or its silent counterpart COLOR (6):

(6) John bought a green COLOR car yesterday.

Moreover, in sentences like (7), Kayne (2005: 242) claims that the presence of the indefinite article is licensed by silent COLOR:

(7) John's car is a bright green.

The present paper claims that the reverse is true about the functional element *de*, whose presence is licensed by overt *color* in sentences like (3).

The paper is organized as follows. Section 2 broaches the issue of silent nouns and briefly discusses the inventory of silent nouns in Romanian. Section 3 offers the syntactic analysis of constructions involving silent COLOR, capitalizing on the findings in Kayne (2005) and Español-Echevarría (2016). Section 4 briefly enumerates the main findings.

2. On silent nouns

Silent nouns are nouns which lack a phonetic matrix but are active in syntax in the sense that their presence can explain various syntactic phenomena. Silent nouns lack antecedents (Kayne 2005) and are semi-lexical in nature. In some cases, silent nouns occupy the head of the Classifier Phrase (Tănase-Dogaru 2007, 2008 a, b, 2009). Over the years, the inventory of silent nouns has been constantly enriched. The main representatives are NUMBER, AMOUNT, YEAR, HOUR (Kayne 2005, Tănase-Dogaru 2008, 2009), KIND (Leu 2004), TOKENS (van Riemsdijk 2005), GO (van Riemsdijk 2002), PLACE, TIME, PERSON (Corver 2008)[2].

Silent nouns benefit from two main kinds of representations. They are usually conceived as empty elements, which are active syntactically but lack an associated phonological matrix (van Riemsdijk 2002, Kayne 2005) or undergo PF-deletion (Wyngaerd 1994). Alternatively, they may be seen as unpronounced elements which are base-generated as such, i.e. without phonological features (Her & Tsai 2014, 2015). In the words of van Riemdsdijk (2017):

> the main question boils down to the question of whether the silent element is thought to be part of the syntactic structure as a lexically specified element that is

[2] A very interesting suggestion by Bleotu (2016) is that color verbs like *to yellow* may be seen as derived from either the noun *yellow* or the silent noun COLOR followed by the adjective *yellow* (Bleotu 2016: 145).

subsequently deleted (or not spelled-out), or whether it is a lexical item that has its own lemma in the mental lexicon but is specified there as being an element that lacks phonetic content (van Riemsdijk 2017: 243).

Although arguing in favor of one option for the representation of silent nouns lies behind the scope of the paper, the underlying assumption is that COLOR is silent, i.e. not spelled out, unless an adequate "verbalizer" is present in the structure[3] (see section 3.1).

2.1 The inventory of silent nouns in Romanian

2.1.1 NUMBER, AMOUNT, KIND

Following van Riemsdijk (2005) and Kayne (2005), Constantinescu & Tănase-Dogaru (2007) and Tănase-Dogaru (2008a, 2008b, 2009) propose that the Romanian *ce* 'what' exclamatives fall into two categories. One category of exclamatives involves the silent noun NUMBER (8) or AMOUNT (9):

(8) Ce de băieți la petrecere! = Ce NUMBER de băieți la petrecere!
what of boys at party what NUMBER of boys at party
'There are so many boys at the party!'

(9) Ce de vin a băut! = Ce AMOUNT de vin a băut!
what of wine has drunk what amount of wine has drunk
'He drank so much wine!'

The second category of *ce* exclamatives in Romanian involves the silent KIND/TYPE/SORT (10):

(10) Ce băieți la petrecere! = Ce KIND băieți la petrecere !
what boys at party what KIND boys at party
'What boys there are at the party! (the boys are really handsome, tall, etc.)'

The distinction between the two categories is signaled by the presence vs absence of *de* 'of', which (in pseudopartitive constructions) is a partitive marker / abstract genitive case-assigner (Tănase-Dogaru 2011, 2012, 2017).

2.1.2 YEAR, HOUR, MONTH

Following van Riemsdijk (1998), Cornilescu (2007), Tănase-Dogaru (2021) proposes that "names" of years, months, and hours are to be analyzed on a par with complex proper names, in the sense that their syntactic structure possesses qualitative classifiers, which can be silent or overt.

[3] An anonymous reviewer points out that concepts like "time", "form", "color" are very fundamental ones, which may play a role in their going silent in some contexts, in the sense that some units lend themselves more easily to silence than others. I fully agree with this intuition – silent nouns do represent fundamental concepts, like "time", "number", "form", which can definitely be seen as a factor of silenthood.

Tănase-Dogaru (2013) argues that classifiers of quantity (11) and classifiers of quality (12) should be treated uniformly. Classifiers in Romanian belong to two distinct categories: classifiers of quantity or "massifiers" (as in (11)) and classifiers of quality or "count-classifiers", as in (12), see (Cheng & Sybesma 1999). Both constructions are extended projections, where the first nominal, i.e. the classifier, is semi-lexical.

(11) un strop de apă
a drop of water
(12) planeta Venus
planet-DEF Venus
'the planet Venus'

The syntactic structure of "names" of years (13), months (14), and hours (15) contains a qualitative classifier, which is either silent (the *a* variants in the examples) or overt (the *b* variants in the examples):

(13) a. O a doua invazie a urmat în 480.
a second invasion has followed in 480.
'A second invasion followed in 480'.
(CoRoLa[4])

b. Benedict s- a născut în anul 480.
Benedict REFL has born in year-DEF 480
'Benedict was born in the year 480'.
(CoRoLa[5])

(14) a. în aprilie devine din nou un om liber.
in April becomes from new a man free
'in April he becomes again a free man'
(CoRoLa[6])

b. în luna aprilie au loc expoziții și festivaluri
in month-DEF April have place exhibitions and festivals
'in the month of April exhibitions and festivals take place'.
(CoRoLa[7])

(15) a. la unu
at one
'at 1 o'clock'

b. la ora unu
at hour-DEF one
'at one o'clock'

[4] https://korap.racai.ro/?q=%C3%AEn+anul+480&ql=cosmas2&cutoff=1
[5] https://korap.racai.ro/?q=%C3%AEn+480&ql=cosmas2&cutoff=1
[6] https://korap.racai.ro/?q=%C3%AEn+aprilie&ql=cosmas2&cutoff=1
[7] https://korap.racai.ro/?q=%C3%AEn+luna+aprilie&ql=cosmas2&cutoff=1

The paper has so far taken a look at the inventory of silent nouns in Romanian, which includes NUMBER/AMOUNT and KIND/TYPE/SORT. Following van Riemsdijk (2003) and Kayne (2005), the paper has proposed that the inventory also contains the silent nouns YEAR, MONTH and HOUR. In what follows I cast a more in-depth glance at silent HOUR.

Kayne (2005: 258) notes that in the English example (16), HOUR acts as a silent classifier:

(16) It's six.
It's six HOUR

French (17) differs from Italian (18) with respect to time, in that the classifier *heures* 'hours' must be overt in French:

(17) Il est six heures.
it is six hours
'It's six o'clock'.
(18) Sono le sei.
are the six
'It's six o'clock.'

In Italian, the corresponding noun can be present, although this is less usual:

(19) Sono le ore sei.
are the hours six
'It's six o'clock.'

In the view of Kayne (2005), the obligatory presence of the classifier in French is related to the presence of the definite article *le* in Italian (18) versus its absence in French (17) (Kayne 2005: 259).

In Romanian, the most common way of telling the time (20) patterns with the English example in (16):

(20) E șase.
is six
'It's six o'clock.'

HOUR is overt in examples such as (21):

(21) a. De la ora șase dimineața am plecat.
of at hour-DEF six morning-DEF have left.
'I left at six o'clock in the morning.'

(CoRoLa [8])

[8] https://korap.racai.ro/?q=ora+6&ql=cosmas2&cutoff=1

b. Era dimineața la ora șase.
was morning-DEF at hour-DEF six
'It was six o'clock in the morning.'

(CoRoLa[9])

Like Italian, Romanian also has the variant in (22), in which case the overt classifier surfaces in the plural:

(22) pe la orele șase am facut un mic popas
on at hours-DEF six have made a small stop
'at about six o'clock we had a short break'

(CoRoLa[10])

To briefly conclude what has been said so far, the catalogue of silent nouns in Romanian accommodates NUMBER/AMOUNT, KIND/TYPE/SORT, YEAR, MONTH, and HOUR. Section 3 analyzes silent COLOR in Romanian and proposes that this silent element acts as a qualitative classifier.

3. Analysis

3.1 Kayne's (2005) COLOR

The first to identify a silent noun COLOR is Kayne (2005). In his 2005 proposal, color adjectives invariably modify either the overt noun *color* or its silent counterpart COLOR, as in (23):

(23) John bought a green COLOR car yesterday.

(Kayne 2005: 242)

In (23), the presence of the indefinite article *a* is licensed by silent COLOR. In the context of a plural noun (24), COLOR does not license *a*, nor does overt *color* (25):

(24) *John has a green cars.
(25) They bought (*a) different *color* cars.

(Kayne 2005: 242)

Kayne relates the presence of silent COLOR to silent NUMBER in the sense that just like NUMBER requires the presence of a specialized adjective like *few* or *many*, COLOR requires the presence of specialized color adjectives:

[9] https://korap.racai.ro/?q=ora+6&ql=cosmas2&cutoff=1
[10] https://korap.racai.ro/?q=orele+6&ql=cosmas2&cutoff=1

(26) John's suit is of a bright green color / a widely discussed color.
(27) John is wearing a bright green suit. = a bright green COLOR suit
(28) John is wearing a widely discussed suit. ≠ John is wearing a suit of a widely discussed color.

(Kayne 2005: 243)

Silent COLOR has no antecedent, i.e. it does not require an overt instance of *color* elsewhere in the sentence or previous discourse. Kayne (2005: 243) notes that there is a weaker sense in which COLOR does have an antecedent, residing in the feature [+color], which characterizes color adjectives like *green* and *red.*

Following these intuitions, it seems safe to assume a silent COLOR in Romanian (28-29).

(28) Mașina e color roșie.
car-DEF is COLOR red
'The car is red.'
(29) Mașina e ***de*** culoare roșie.
car-DEF is of color red
'The car is red in color.'

The next section takes a few steps towards clarifying the role of *de* 'of' in the structures (28)-(29). The section shows that the (overt) noun *culoare* 'color' acts as a classifier noun, whose presence is triggered by the functional element *de* 'of'.

3.2 COLOR as a classifier

Following Español-Echevarría (2016), who discusses adjectival modification in Malay, the section makes the claim that in examples such as (29), *culoare* acts as a classifier noun, which "gets verbalized" by the relative marker *de*. In Malay, color adjectives, such as *merah* 'red', can directly combine with the head noun (30), while evaluative adjectives, such as *baik* 'good', require the occurrence of the complementizer *yang*[11] in order to modify the head noun (31):

(30) kasut merah itu
shoes red the/this
'the red shoes'

[11] The complementizer status of *yang* is confirmed by the fact that it occurs in relative clauses (1), as well as by the fact that it heads +*wh* CP (2):

(1) Wanita yang sedang berjalan itu memakan apel.
Women COMP PROG walk the/this eat apple
"The women who are walking are eating apples."
(2) Siapa-kah yang membeli buku itu?
who Q COMP buy book the/this
"Who bought the book?"

(Wong 2008: 111, quoted in Español-Echevarría 2016: 150)

(31) sebuah buku yang baik
a-CLF book COMP good
'a good book'

(Español-Echevarría 2016: 147)

The two patterns of adjectival modification are taken to be an instance of the distinction between direct (30) and indirect modification (31), in the sense of Cinque (2010). Given the complementizer status of *yang*, Español-Echevarría (2016) claims that indirect modification in Malay always involves a (reduced) relative clause.

Intersective adjectives (belonging to different lexical classes, such as color, shape, material or origin) directly modify a nominal projection, as in (32)-(35):

(32) meja bulat itu SHAPE
table round the
'the round table'

(33) kasut hijau itu COLOR
shoes green the
'the green shoes'

(34) pelajar Melayu itu ORIGIN
student Malay the
'the Malay student'

(35) meja kayu itu MATERIAL
table wood the
'the wooden table'

(Español-Echevarría 2016: 151-152)

Intersective adjectives can also be introduced by means of a relative clause, as in (36)-(39). In this case, this relative clause, with the complementizer *yang*, must contain a classifier noun, *bentuk* 'form', *warna* 'color', *bangsa* 'race' and *jenis* 'type/sort', which gets verbalized by the verbal prefix *ber-*.

(36) meja yang ber-**bentuk** bulat itu
table COMP VRB-**form** round the
'the round table'

(37) kasut yang ber-**warna** hijau itu
shoes COMP VRB-**color** green the
'the green shoes'

(38) pelajar yang ber-**bangsa** Melayu itu
student COMP VRB-**race** Malay the
'the Malay student'

(39) meja yang ber-**jenis** kayu itu
table COMP VRB-**type** wood the
'the wooden table'

(Español-Echevarría 2016: 152-153)

Therefore, in Malay, intersective modifiers always involve a classifier noun, which may be silent, as in (32)-(35), or phonetically overt, as in (36)-(39).

In Romanian one can notice the same kind of complementary distribution between direct modification by intersective adjectives (40a, 41a) and reduced relative clauses (40b, 41b):

(40) a. masa verde
table-DEF green
'the green table'
b. masa de **culoare** verde
table-DEF of color green
'the green table'

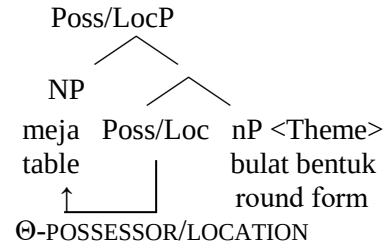
(41) a. masa rotundă
table-DEF round
'the round table'
b. masa de **formă** rotundă
table-DEF of shape round
'the round table'

In the *b* examples above, the overt classifier is triggered by *de* 'of', which may also introduce in Romanian fully-fledged relative clauses (42):

(42) masa de mi-ai cumpărat-o[12]
table-DEF of me have bought
'the table which you bought for me'

In Malay, the relation between the classifier (dimensional noun) and the head noun is taken to be mediated by a possessive locative relation (Español-Echevarría (2016: 160):

(43)



This is so because *ber-* is also able to denote a possessive relation between the base nominal and the external argument of the resulting verb:

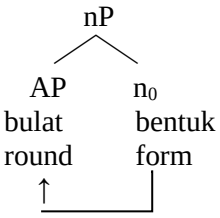
[12] The use of *de* in such contexts is dialectal, i.e. not generally used in standard, literary Romanian.

(44) Orang kaya itu berkereta besar.
man rich the/this VRB-car big
'This rich man has a big car.'

(Español-Echevarría 2016: 159)

As far as the relation between dimensional nouns and adjectives is concerned, Español-Echevarría (2016: 161) proposes that dimensional nouns contain a SORTAL interpretable feature which makes the adjective an argument of this type of nouns:

(45)



In the framework proposed by Español-Echevarría (2016) intersective modification involves not only a silent noun, but also a possessive relation between the silent noun and the head noun. This possessive/locative relation seems to be the source of the HAVE/BE alternation in (46):

(46) a. Masa **e** (de culoare) verde.
table-DEF is (of color) green.
'The table is green.'
b. Masa **are** culoarea verde.
table-DEF has color-DEF green.
'The table has the color green.'

The HAVE/BE alternation is found in other Romance languages, such as Spanish (47). Similarly to the Romanian examples, the preposition *de* and the possessive verb are in complementary distribution, which suggests that the preposition has been incorporated into the verb (see Español-Echevarría 2016):

(47) a. *(De) qué color **es** esta mesa?
*(of) what color is this table
"What color is this table?"
b. (*De) Qué color **tiene** esta mesa?
(*of) what color has this table
'What color is this table?'

(Español-Echevarría 2016:161)

It is now time we took stock of the results so far. The paper has shown that COLOR acts as a classifier, silent without *de* and overt with *de*. Secondly, color names have been shown to modify COLOR. Thirdly, the prepositional element *de* acts in a fashion similar to a complementizer.

3.2. COLOR as an intrinsic silent element

Her & Tsai (2014, 2015) propose a distinction between intrinsic and extrinsic silent elements. Intrinsic silent elements do not add any meaning to the structure they are embedded in (48a), while extrinsic silent elements do, which makes them illicit by definition (48b)

(48) a. She is the baby's FEMALE mother.
b. She is the baby's LOVING mother.

(Her & Tsai 2014: 784)

Her & Tsai (2105) argue that Kayne's *a green COLOR car* involves an intrinsic silent element that cannot be syntactically justified in the interest of economy. Moreover, it is seen as internal to English (Her & Tsai 2014: 790).

However, while in English *a* is licensed by silent COLOR, different languages have different licensers (see the Malay and Romanian cases above), which proves that (at least in these languages) COLOR is not only intrinsic but also licit. In the same vein of thought, Sigurdsson (2004) argues that language has innate structures which possess meanings irrespective of whether or how they are expressed at PF, which Sigurdsson (2004) calls Perceptible Form. Sigurdsson (2004: 243) formulates the Silence Principle, which legitimizes a range of silent elements, silent nouns included:

(49) Languages have meaningful silent features; any meaningful feature may (in principle) be silent.

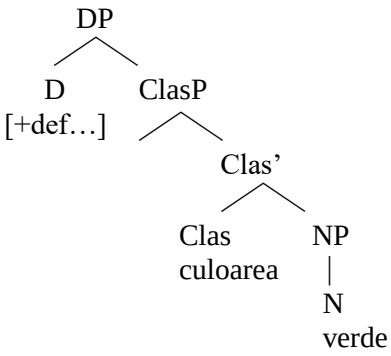
The mere fact that in Romanian one can have the contrast in (50) serves to show that COLOR is present in the structure:

(50) a. Verde**le** este asociat cu natura.[13]
green-DEF is associated with nature-DEF
'Green is associated with nature'
b. Culoare**a** verde este reprezentarea universală a siguranței.[14]
color-DEF green is representation-DEF universal of safety-GEN
'The color green is the universal representation of safety.'

Therefore, the syntactic structure for (50b) is the one given below (from Cornilescu 2007), where the noun *culoarea* color-DEF acts as a qualitative classifier:

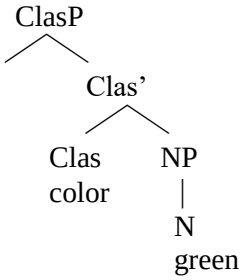
[13] https://www.tekabijoux.ro/descopera/culori/verde.
[14] https://www.tekabijoux.ro/descopera/culori/verde.

(50)



While (50) gives the syntactic structure of the construction with the overt classifier *culoare* ‘color’, (51) shows that the classifier is silent in contexts like *Maşina e verde* car-DEF is green.

(51)



4. Conclusions

The paper has argued that silent COLOR can (and should be) added to the inventory of silent nouns in Romanian. Silent COLOR acts as a qualitative classifier, while *de* ‘of’ acts as a “verbalizer” of the classifier (similar to the Malay *ber-*), in the sense that it triggers its overt realization. Thus, what Sigurdsson (2004) calls “the Silence Principle” finds additional evidence in Romanian silent nouns.

References

Bleotu, A. 2016. Colour verbs in English and Romanian. In J. P. Silvestre, E. Cardeira & A. Villalva (eds.), *Colour and Colour Naming. Crosslinguistic Approaches*, 145-160. Lisbon: Centro de Linguística da Universidade de Lisboa, Universidade de Aveiro.

Cheng, L. & Sybesma, R. 1999. Bare and not-so-bare nouns and the structure of the NP. *Linguistic Inquiry* 30 (4): 509-542.

Constantinescu, C. & Tănase-Dogaru, M. 2007. On predicate nominals in Romanian. *Bucharest Working Papers in Linguistics* IX (1): 84-96.

Cinque, G. 2010. *The Syntax of Adjectives*. Cambridge, MA: The MIT Press

Cornilescu, A. 2007. On classifiers and proper names. *Bucharest Working Papers in Linguistics* 9 (1): 62-75.

Corver, N. 2008. On silent semi-lexical PERSON. *Lingue e linguaggio* VII (1): 5-24.

Español-Echevarría, M. 2016. The interplay of silent nouns and (reduced) relatives in Malay adjectival modification. In A. M. Di Sciullo (ed.), *Biolinguistic Investigations on the Language Faculty*, 145-169. Amsterdam/Philadelphia: John Benjamins.

Her, O-S. & H-C. Tsai. 2014. *Color* isn't silent, *Shallow* isn't deep: Two case studies of evaluating silent elements. *Language and Linguistics* 15 (6): 775-800.

Her, O-S. and H-C. Tsai. 2015. On silent elements: A case study of *grand* and its silent entourage. *Natural Language and Linguistic Theory* 33 (2): 575-605.

Kayne, R. S. 2005. *Movement and Silence*. Oxford: Oxford University Press.

Leu, T. 2008. *What for* internally. *Syntax* 11 (1): 1-25.

van Riemsdijk, H. C. 1998. Categorial feature magnetism. *The Journal of Comparative Germanic Linguistics* 2 (1): 1-48.

van Riemsdijk, H. C. 2002. The unbearable lightness of GOing. The projection parameter as a pure parameter governing the distribution of elliptic motion verbs in Germanic. *Journal of Comparative Germanic Linguistics* 5 (1): 143-196.

van Riemsdijk, H. C. 2005. Silent nouns and the spurious indefinite article in Dutch. In M. Vulchanova & T. Afarli (eds.), *Grammar and Beyond: Essays in Honour of Lars Hellan*, 163-178. Oslo: Novus Press.

van Riemsdijk, Henk C. 2017. Silent V and the IPP. *Wiener Linguistische Gazette* 82: 243-252.

Sigurdsson, H. Á. 2004. Meaningful silence, meaningless sounds. *Linguistic Variation Yearbook* 4: 235-259.

Tănase-Dogaru, M. 2007. Silent semi-lexical classifiers in Romanian. *Bucharest Working Papers in Linguistics* IX (1): 51-60.

Tănase-Dogaru, M. 2008a. Pseudo-partitives and (silent) classifiers in Romanian. In S. Blaho, C. Constantinescu & E. Schoorlemmer (eds), *Proceedings of ConSole XV*, 295-320. Leiden: Sole.

Tănase-Dogaru, M. 2008b. The silence of exclamation: Exclamative constructions, singular indefinite predicates and silent nouns. *Bucharest Working Papers in Linguistics* X (1): 137-146.

Tănase-Dogaru, M. 2009. *The Category of Number*. Bucharest: Editura Universității din București.

Tănase-Dogaru, M. 2011. Diagnostic criteria for semilexicality. *Bucharest Working Papers in Linguistics* XIII (1): 151-167.

Tănase-Dogaru, M. 2012. *The Syntax of Quantity and Quality in Romanian*. *Prepositional Binominal Constructions*. Bucharest: Editura Universității București.

Tănase-Dogaru, M. 2013. Classifiers of quantity and quality in Romanian. *Bucharest Working Papers in Linguistics* XV (2): 77-90.

Tănase-Dogaru, M. & Uşurelu, C. 2015. Diachronic variation with Romanian (pseudo)-partitives. *Revue roumaine de linguistique* LX (2–3): 243-255.

Tănase-Dogaru, M. 2017. Partitive constructions. In M. Everaert & H. C. van Riemsdijk (eds.), *The Wiley Blackwell Companion to Syntax*, 2nd edition. Hoboken, NJ: Wiley Blackwell.

Tănase-Dogaru, M. 2021. On silent COLOR in Romanian. Paper presented at the *Workshop on Modification*, 27 November 2021, University of Bucharest.

Wyngaerd, G. V. 1994. *Pro-Legomena: Distribution and Reference of Infinitival Subjects.* Berlin: Mouton de Gruyter.

ADJECTIVE ORDERS IN ENGLISH AND ROMANIAN: AN EXPERIMENTAL INVESTIGATION

Daniela-Gabriela Trușcă and Adina Camelia Bleotu*

Abstract: The paper investigates experimentally the order of adjectives in British English and Romanian through Likert acceptability judgments. We focus on three categories of adjectives (Quality, Size, Color) and all their possible combinations in both languages. We show that there is a rigid ordering of adjectives in British English, i.e. the adjectival combinations of Quality-Size (*beautiful big family*), Quality-Color (*special blue flowers*), Size-Color (*tiny blue butterfly*) are natural for native English speakers, but the reverse adjectival orders Size-Quality (*little special girl*), Color-Quality (*blue special flowers*), Color-Size (*blue tiny butterfly*) were judged to be unnatural. In contrast, we found that in Romanian, a language where adjectives typically occur post-nominally, adjectives are more freely ordered, as the orders Size-Quality, Color-Quality, Color-Size were judged by participants as equally natural as the reverse adjective orders Quality-Size, Quality-Color, and Size-Color, e.g. the Color-Size order *fluture albastru mititel*, lit. 'butterfly blue tiny' was judged as equally natural by participants as the reverse Size-Color adjective order *fluture mititel albastru*, lit. 'butterfly tiny blue'.

Keywords: General Adjective Hierarchy, AOR, Roll-up, mirror image, English, Romanian

1. Introduction

The current study investigates the cross-linguistic universality of the hierarchy QUALITY > SIZE > COLOR, which is part of the General Adjective Hierarchy QUALITY > SIZE > SHAPE > COLOR > PROVENANCE (Dixon 1982, Sproat & Shih 1991, Cinque 1994, 2005, 2010, Scontras et al. 2017, Scott 2002). We look at whether adult native British English speakers order adjectives in accordance with the General Adjective Hierarchy, as well as whether adult native Romanian Speakers order adjectives as a mirror of the General Adjective Hierarchy or if they are more prone to a freer usage of adjectives.

Our study is organized as follows: we first present a review of some of the most important theories about the order of adjectives (Dixon 1982, Sproat & Shih 1991, Cinque 1994, Scott 2002, Cinque 2005, 2010, Scontras et al. 2017,). We consider the adjective ordering restrictions in English in syntactic accounts such Roll Up (Cinque 1994, 1995, 2010) and adjunction theories (Kremers 2003, Abels & Neeleman 2010), semantic-pragmatic accounts such as Scontras et al.'s (2017) analysis of subjectivity or Hewings' (2004) analysis of evaluative and non-evaluative adjectives. Regarding adjective ordering restrictions in Romance, we investigate whether they are ordered as a mirror of English from different points of view (Cinque 2010, Leivada & Westergaard 2019, Cornilescu & Nicolae 2016, or Cornilescu & Cosma 2019).

Section 3 presents an experiment we conducted on native speakers of British English and Romanian in order to determine which order of adjectives is favored in both languages and the relationship between them (whether the order in Romanian is identical

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to the order in British English, whether it is a mirror image of the order in British English, or whether it is variable).

The current paper focuses on three categories of adjectives (Quality, Size, Color) and explores all their combinatorial possibilities both in English and in Romanian, see (1) and (2). These categories are commonly used in language to provide detailed descriptions and are considered fundamental in many linguistic frameworks. By exploring the combinatorial possibilities of these specific categories, we can gain insights into the patterns and structures of adjective usage in both English and Romanian.

(1) Examples of combinations of adjectives tested in English:
   a. Quality-Color
      My grandma loves special blue flowers.
   b. Color-Quality
      My grandma loves blue special flowers.
   c. Quality-Size
      This bracelet is for a special little girl.
   d. Size-Quality
      This bracelet is for a little special girl.
   e. Size-Color
      I saw a tiny blue butterfly in the garden this morning.
   f. Color-Size
      I saw a blue tiny butterfly in the garden this morning.

(2) Examples of combinations of adjectives tested in Romanian:
   a. Quality-Color
      Bunica mea iubește florile speciale albastre.
      grandma my loves flowers-the special blue
      'My grandma loves blue special flowers.'
   b. Color-Quality
      Bunica mea iubește florile albastre speciale.
      grandma my loves flowers-the blue special
      'My grandma loves special blue flowers.'
   c. Quality-Size
      Sara are o familie frumoasă mare.
      Sarah has a family beautiful big
      'Sarah has a big beautiful family.'
   d. Size-Quality
      Sara are o familie mare frumoasă
      Sarah has a family big beautiful
      'Sarah has a beautiful big family.'
   e. Size-Color
      Am văzut un fluture albastru mititel în grădină de dimineață
      have seen a butterfly blue little in garden of morning
      'I saw a blue tiny butterfly in the garden this morning.'

f. Color-Size
Am văzut un fluture mititel albastru în grădină de dimineață
have seen a butterfly tiny blue in garden DE morning
'I saw a blue tiny butterfly in the garden this morning.'

2. Background on the order of adjectives

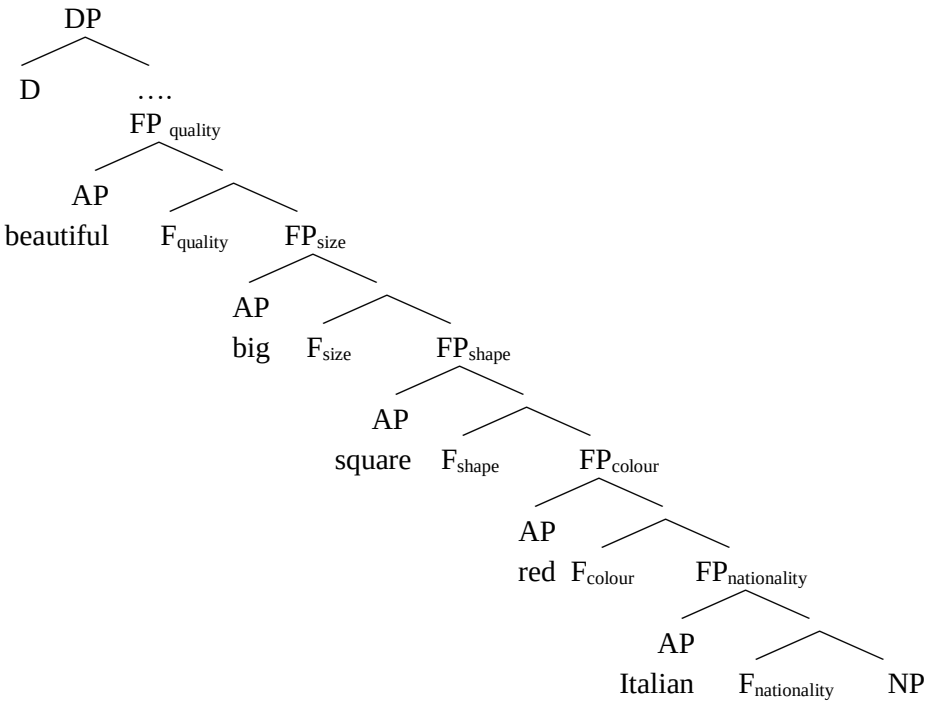
Many studies have investigated adjective ordering restrictions in English (e.g., Dixon 1982, Sproat & Shih 1991, Cinque 1994, Scott 2002, Cinque 2005, 2010, Scontras et al. 2017). The general consensus is that adjectives are ordered depending upon various parameters related to the type of properties they encode. For example, in a structure such as *beautiful big blue eyes*, the adjective *beautiful* specifies QUALITY, the adjective *big* specifies SIZE, and the adjective *blue* specifies COLOR. The QUALITY adjective precedes the SIZE adjective, which precedes the COLOR adjective. The QUALITY > SIZE > COLOR ordering is part of a larger hierarchy of cognitive dimensions, as proposed by multiple authors in the literature on adjectives:

(i) Dixon (1982): VALUE > DIMENSION > PHYSICAL PROPERTY > SPEED > HUMAN PROPENSITY > AGE > COLOR (Bleotu & Roeper 2021)
(ii) Sproat & Shih (1991): QUALITY > SIZE > SHAPE > COLOR > PROVENANCE
(iii) Scott (2002): SUBJECTIVE COMMENT > SIZE > LENGTH > HEIGHT > SPEED > WIDTH > WEIGHT > TEMPERATURE > AGE > SHAPE > COLOR > NATIONALITY/ORIGIN > MATERIAL
(iv) Scontras et al. (2017): SUBJECTIVE > NON-SUBJECTIVE

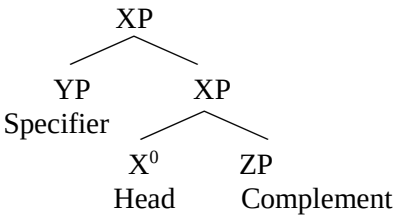
2.1 Adjective ordering restrictions in English

Adjective ordering restrictions have received multiple explanations in the literature. According to syntactic accounts such as the Roll-Up cartographic account (Cinque 1994, 1995, 2010) or the Adjunction account (Kremers 2003, Abels & Neeleman 2010), adjectives occur in a certain fixed syntactic order in English (3). While both the cartographic and the adjunction account assume a particular order of adjectives, the two accounts differ in how they treat this order. The cartographic account assumes that, in the extended nominal projection, the base position of the modifiers is before the noun. This assumption is in consonance with the Linear Correspondence Axiom (Kayne 1994), according to which the universal order is Specifier > Head > Complement (4).

(3)



(4)



In contrast, the adjunction approach assumes that both the adjective-noun order and the noun-adjective order are basic, and that the availability of a certain order depends on how the parameter is set in a certain language. In some languages, adjectives are placed before nouns, while in others, they are placed after nouns.

As most Germanic languages, English generally displays an adjective-noun order. An exception to this order is represented by heavy adjectives, i.e., adjectives with complements/adjuncts, which only occur postnominally (Cinque 1994, see 5).

(5) a. *a man proud
b. the man proud of his son
c. *the proud of his soon man
d. a man bruised and battered
e. a steak just right

Cinque (1994) discusses multiple differences between prenominal and postnominal adjectives in English (see Table 1), which seem to support the idea that all English postnominal adjectives have the status of reduced relative clauses.

Table 1. Prenominal versus Postnominal adjectives

Differences	Prenominal order	Postnominal order
Scope	A prenominal adjective is under the scope of the prenominal adjective to its left: *rotten* in *a fake rotten antique* (the rotten status of the antique may be fake*).*	A postnominal adjective with a complement/ adjunct is no longer under the scope of the prenominal adjective to its left: *a fake antique rotten with age* (the property of being rotten is seen as an asserted property of the fake antique, see Sadler & Douglas 1994)
Speaker commitment to the property	In prenominal position, a non-intersective adjective suspends the speaker's commitment to the most adequate attribution of the term to a specific individual: *alleged* in *The alleged murderer was deported.*	An adjective with a sentential complement in postnominal position becomes intersective (Williams 1994): *The murderer alleged to have killed his own parents was deported.*
Pre-/post-nominal order	Non-predicative adjectives can only appear prenominally.	Even if non-predicative adjectives take a complement/an adjunct, they cannot appear postnominally. Only predicative adjectives can appear postnominally: **What is their reason main in importance?* (What is their main reason?) (Larson & Marusic 2004*)*

One aspect which is relevant for ordering adjectives pre- or postnominally is the semantic class of the adjectives. Even before Cinque, Siegel (1976, 1979) assumed the following classification of adjectives: postnominal or absolute adjectives and prenominal or relative adjectives. Siegel (1976, 1979) labels the postnominal adjective absolute because the meaning of the noun which is modified by the adjective is not bound to the meaning of the adjective itself. Absolute adjectives are derived from a predicative source. An illustrative example is the adjective *asleep*, which, in a context such as (6), can be assumed to be a reduced relative clause (7):

(6) the person asleep
(7) the person that is asleep

Moreover, Siegel (1976, 1979) labels the prenominal adjectives "relative" because their meaning is dependent on the meaning of the noun. In contrast to the first category, "relative" adjectives cannot occur in predicative position. They do not behave like absolute adjectives: they are not predicative but attributive – see the example with *veteran* in (8):

(8) a. this veteran soldier
b. *This soldier is veteran.

In addition to these two main classes, there is another class of ambiguous adjectives, which can be interpreted either as absolute or relative adjectives in different

contexts. An example of an ambiguous adjective would be *beautiful*. In a context such as (9a), where it means 'beautiful as an individual', it is an absolute adjective, while in contexts such (9b), where it means 'beautiful as a dancer', it is a relative adjective. *Beautiful* is similar in this respect to scalar adjectives such as *big* and *tall* (Cinque 2010):

(9) a. beautiful person
b. beautiful dancer

Building on previous research (see Kamp & Partee 1995), Cinque (2010) discusses two classes of adjectives: intersective adjectives and non-intersective adjectives. The term "intersective" refers to the operation of intersection between two different classes: the noun class and the adjective class. For instance, in the sequence *red animals*, we can notice the intersection between the class of *red* entities and the class of *animals*:

(10) [[red animals]] = [[red]] ∩ [[animals]]

The class of non-intersective adjectives denotes properties that depend on the noun they modify. Non-intersective adjectives can be subsective or intensional (Kamp & Partee 1995, Panayidou 2013). Subsective adjectives represent a type of adjective that modify the noun by narrowing down its meaning or specifying a particular subset within the broader category. These adjectives provide additional information about the noun without changing its basic meaning. Subsective adjectives are similar to intersective adjectives, are predicative, while intensional adjectives are not predicative.

(11) Subsective
a. The room is big.
b. [big room] ⊆ [room]
(12) Intensional
a. *The president is former.
b. [former president] = [former] ∩ [president]
[former president] ⊆ [president]

In addition, another dimension that is relevant for the ordering of adjectives is evaluation, which Huston & Thompson (2000) define in terms of feelings, judgments, or viewpoints about something. Evaluative adjectives (such as *good*) involve a subjective (emotional) bias, whereas non-evaluative adjectives (such as *related to*) lack such a bias. Interestingly, most evaluative adjectives tend to be prenominal in English. Huston & Thompson (2000) discuss three functions of evaluation: expressing an opinion, maintaining relationships, and organizing discourse. (Huston & Thompson 2000). On pragmatic grounds, Hewings (2004) argued that evaluative adjectives fall into eight categories: interest (*interesting*, *tedious*), suitability (*good*, *odd*), comprehensibility (*clear*, *confusing*), accuracy (*true*, *wrong*), importance (*useful*, *meaningless*), sufficiency (*sufficient*, *small*), praiseworthiness (impressive, disappointed) and perceptiveness (*sophisticated*, *unaware*). Since evaluation changes the perception of the nominal

referent, an evaluative component sometimes results in a prenominal position of the adjectives even in languages where adjectives are generally postnominal:

(13) frumoasa fată (Romanian)
beautiful girl
'the beautiful girl'

The semantic class of the adjective and the viewpoint they convey may affect adjective orders: evaluative adjectives tend to scope over the noun and other adjectives.

The importance of semantics and pragmatics for ordering adjectives has even led to the idea that such orders can be explained on other grounds than syntax. Scontras et al. (2017) propose that subjectivity is the main factor which predicts adjective ordering preferences. Scontras et al. (2017) conducted an experiment to investigate which adjective order is preferred by English native speakers in adjective-adjective-noun sequences (14).

(14) the small brown chair *vs.* the brown small chair

The authors find that English native speakers have strong ordering preferences: they prefer to place certain adjectives further away from the noun than others. For instance, in (14), participants prefer to place the color adjective *brown* closer to the noun than the size adjective *small* (*the small brown chair*).

Scontras et al. (2017, 2019) further investigate whether subjectivity can predict adjective ordering preferences. As argued by Scontras et al. (2019), subjectivity may encompass a variety of notions such as vagueness (brown by which standard?), evaluativity (wonderful according to whom?), or relativeness/context dependence (small compared to what?). They measured subjectivity by asking participants to answer a question about how subjective a certain adjective was. Additionally, they relied on faultless disagreement (see Kölbel 2004, MacFarlane 2014): they asked participants whether two speakers could both be right while producing conflicting descriptions (one who uttered *That apple is old*, and one who uttered *That apple is not old*). Depending on the adjective class, speakers may disagree upon an ordinary set of things which are picked out by a certain given adjective. Scontras et al. (2017, 2019) concluded that there is a high correlation between the subjectivity scores and the faultless disagreement measure, and that adjective subjectivity predicts adjective ordering preferences: less subjective adjectives are preferred linearly closer to the nouns they modify. Importantly, they also argue that the hierarchical structure of nominal modification is the main reason for subjectivity predicting adjective ordering preferences: adjectives that are linearly closer to the modified noun compose with the noun before adjectives that are farther away (Figure 1).

(15) *the small brown cardboard box→ cardboard* is less subjective than *brown* or *small→ cardboard* is preferred closer to the noun. (Scontras et al. 2017)

They also treat adjectival modification as syntactic adjunction:

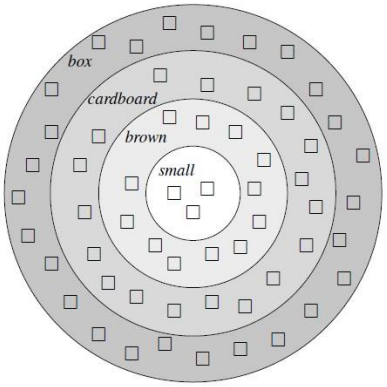


Figure 1. Restrictive modification in *small brown cardboard box*. (Scontras et al. 2019)

Thus, adjective ordering preferences in English have received syntactic explanations (in terms of cartographic accounts or adjunction), as well as semantic-pragmatic explications (in terms of evaluative or subjective properties). Scontras et al. (2019) even propose a mixed approach, arguing that the differences in terms of subjectivity between adjectives have a grammatical source, and derive from how adjectives are merged: adjectives which are first merged to the noun are more objective, while adjectives which are merged later are more subjective.

Additionally, adjective orders preferences in English may also be affected by recursive uses of adjectives, such as *small big mushrooms* (see Foucault et al. 2022), picking a subset of a set. While *small green mushrooms* may refer to mushrooms which are both small and green (either a subset of small mushrooms from a set of green mushrooms, or a subset of green mushrooms from a set of small mushrooms), in a recursive context, *small green mushrooms* can only refer to *small mushrooms* from a set of *green mushrooms.*

2.2. Adjective ordering restrictions in Romanian: The mirror image?

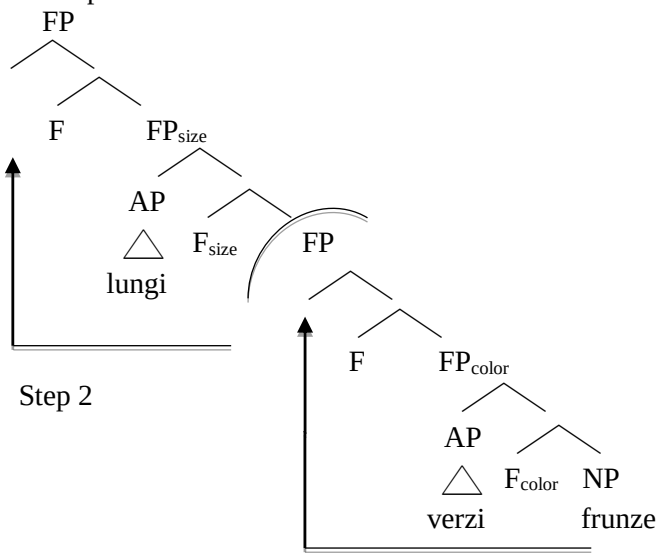
In order to have a complete picture of adjective ordering restrictions, it is important to extend the study and investigate the order of adjectives in Romance languages such as Romanian, a language where the very existence of adjective orders has been under debate. On the one hand, Cinque (2010) argues that there is a fixed order of adjectives cross-linguistically, and that Romance is the mirror order of English. On the other hand, Leivada & Westergaard (2019) and Trainin & Shetreet (2021) argue that some languages have a more flexible order, failing to mirror English. Romanian, which we focus on in the current study, would qualify as such a flexible language, according to Cornilescu & Cosma (2019), Cornilescu & Giurgea (2013) and Cornilescu & Nicolae (2016). We discuss these different perspectives in detail below.

One claim about adjective orders in Romance (Romanian included) has been that they represent a mirror of English. While in English, adjectives occur to the left of the noun, in Romanian, adjectives occur to the right of the noun:

(16) frunze verzi lungi
leaves green long
'long green leaves'

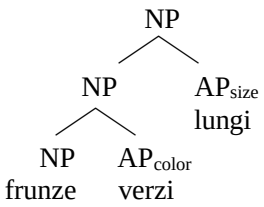
Cinque (1994, 1995, 2002) derives this order via a set of movement operations from the basic order of adjectives, which corresponds to the English order. For instance, in (17), the NP moves to an outer specifier, the Specifier of FP_{color} (Step 1), then the newly formed FP containing FP_{color} moves further moves to the outer specifier of the projection hosting FP_{size} (Step 2).

(17) Roll-Up



An alternative way to capture adjective orders in Romanian is by relying on Adjunction theory (Kremers 2003, Abels & Neeleman 2010). According to this view, adjectives are not heads but XPs adjoined to the left of the noun (in languages with prenominal adjectives like English) or to the right of the noun (in languages with postnominal adjectives like Romanian).

(18)



Interestingly, multiple studies disagree with the idea that adjectives observe a fixed, strict, rigid ordering in Romanian or other languages. This makes the Adjunction

view a more adequate account for Romanian, given the fact that adjuncts can be added freely in any order. Leivada & Westergaard (2019) argue that universal adjectival hierarchies are not innately wired. Their claim is based on experimental research conducted on monolingual Standard Greek native speakers (N = 140) and bidialectal speakers of Standard Greek and Cypriot (N = 30). Leivada & Westergaard (2019) collected two types of responses: (i) acceptability judgments on a 3-point Likert scale with the options "correct", "neither correct nor wrong", and "wrong", and (ii) reaction times. They tested sentences containing congruent/incongruent sequences of two adjectives for combinations of (i) size and nationality adjectives, (ii) color and shape adjectives, and (iii) subjective comment and material adjectives. (19) exemplifies congruent/incongruent orders for combinations of color and shape adjectives.

(19) a. I bought a square black table. (congruent order)
b. I bought a black square table. (incongruent order)

The experimental findings led Leivada & Westergaard (2019) to the following conclusions: firstly, from the participants' point of view, both types of orders (congruent/incongruent) are evaluated as 'correct'; secondly, while, contrary to expectations based on previous literature that there should be difference in processing between unmarked and marked orders, incongruent orders did not take longer to process. Leivada & Westergaard (2019)'s study thus suggests that there may not be a rigid, fixed universal hierarchy for adjective orderings, and that adjectives may occur more freely (in Greek and other languages). Interestingly though, the authors did find a 'distance' effect, namely, the further apart two adjectival classes along the proposed hierarchy (SUBJECTIVE COMMENT > EVIDENTIAL > SIZE > LENGTH > HEIGHT > SPEED > DEPTH > WIDTH > TEMPERATURE > WETNESS > AGE> SHAPE > COLOR > NATIONALITY/ORIGIN > MATERIAL, see Scott 2002), the bigger the difference between incongruent and congruent orders in acceptability terms. This suggests that, while adjectival order may be freer than in English, there may be a sensitivity to certain properties, such as subjectivity, for instance.

According to Cornilescu & Giurgea (2013), Cornilescu & Nicolae (2016), and Cornilescy & Cosma (2019), adjectives are freely ordered in Romanian as well. However, adjectival order is nevertheless sensitive to various factors (Brăescu 2011), such as the semantic class of the adjective and the relative position of the adjective with respect to the head. Regarding the semantic class of the adjective, there is a tendency for taxonomic adjectives to precede qualifying ones in postnominal position. Regarding the position of the adjective relative to the head, we find that adjectives normally follow the head given that Romanian is a head-initial language. Interestingly, prenominal adjectives yield a special interpretation in virtue of their peripheral position.

Recent work by Bleotu & Roeper (2021a, b, 2022a, b) shows that the order of adjectives in Romanian is not necessarily free but it can be constrained by set-subset considerations, just as in English (see Foucault et al. 2022, also Bleotu et al. 2023a, b). While adjectives occur freely by default, in a context where native Romanian speakers (both adults and 4- and 5-year-olds) have to identify a subset of objects within a set of objects by means of adjectives, they will merge the Set adjective first and only afterwards

merge the Subset adjective onto the N Set combination. The tendency to map the closest adjective to a Set interpretation and the adjective further away with a Subset interpretation manifests in comprehension as well:

(20) florile mari mici
flower big small
'the small big flowers'

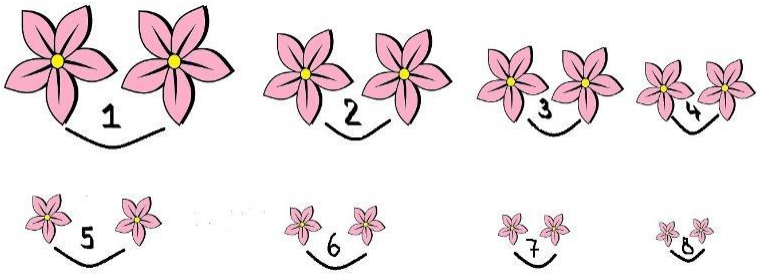
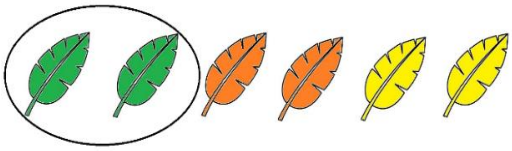


Figure 2. Items used in Bleotu & Roeper (2021a, b)

Interestingly, the Recursive Set-Subset Constraint, as Bleotu & Roeper (2022a, b) refer to it, is stronger than the cognitive preference to place more objective adjectives closer to the noun than more subjective ones: if participants want to identify a subset of green leaves among a set of long leaves, they will prefer an order which places the color adjective closer to the noun than the size adjective:

(21) "Let's look at these leaves! They are all long. Some are green, some are orange, and some are yellow.



The circled leaves are:

frunze verzi lungi	or	frunze lungi verzi
leaves green long		leaves long green
'long green leaves'		'green long leaves'?"

To sum up, adjective ordering restrictions in English have received various accounts: syntactic accounts in terms of Roll-uP (Cinque 2010) and adjunction theories (Kremers 2003, Abels & Neeleman 2010); semantic accounts such as Scontras's (2007) analysis of subjectivity; and pragmatic accounts, differentiating between evaluative and non-evaluative adjectives (Hewings 2004). On the other side, adjective ordering restrictions in Romanian have been argued to be either a mirror order of English (as in

Cinque 2010) or a freer, more flexible order (Cornilescu & Giurgea 2013, Cornilescu & Nicolae 2016, Cornilescu & Cosma 2019).

3. The experiment

We investigate experimentally whether British English native speakers and Romanian native speakers prefer certain adjectival orders over others for adjectives expressing quality, size, and color.

3.1. Assumptions

In our investigation, we rely on the important distinction between linear order, the order in which adjectives surface in a given language, and hierarchical order, the order in which adjectives are merged in the structure (Panayidou 2013). Even if the linear and hierarchical orders may coincide sometimes, they may differ in other situations. The test case we are probing into is the order of adjectives in Romanian versus English. According to Cinque (2010), the Romanian language is the mirror image of English. If we assume this proposal is on the right track, then, although the hierarchy of adjectives stays the same, the linear order of the modifiers will differ, reflecting a mirror order of the English one.

(22) English

a. Shape > Colour > Nationality > N Hierarchical order
a round green Victorian diamond

b. Shape > Colour > Nationality > N Linear order
a round green Victorian diamond

(23) Romanian

a. Shape > Colour > Nationality > N Hierarchical order
*un rotund verde victorian diamant
a round green Victorian diamond
*‘a round green Victorian diamond’

b. N > Nationality > Colour > Shape Linear order
un diamant victorian verde rotund
a diamond Victorian green round
‘a round green Victorian diamond’

3.2. Aim

We investigate whether the order of adjectives QUALITY > SIZE > COLOR is fixed by looking at native speakers of British English and Romanian. The General Adjective Hierarchy has been argued to involve a multitude of different types of adjectives (Quality, Size, Shape, Colour, Provenance, a.o.). Given that it is very hard to expose participants to so many orders involving so many different adjective types, we limit ourselves to testing the order QUALITY > SIZE > COLOR. On the other hand, the

experiment hopes to offer an interesting comparison between English and Romanian regarding Cinque's (2010) Mirror Theory, according to which Romanian adjective order is a mirror image of English.

3.3. Participants

60 adult participants (30 native British English Speakers and 30 native Romanian Speakers) took part in the experiment. Age-wise, participants range between 19 and 57 years old. Gender-wise, the group answering the English version of the test is gender-balanced, showing an equal number of male and female participants, while in the Romanian version of the test, 70% of the participants are female. No participants identified as gender-neutral or other. Language-wise, British English speakers and Romanian speakers master other languages than their native language at different levels: English (for Romanian speakers), Spanish, Italian, German, French. While we are aware that the second or third language may potentially influence the speakers' adjective ordering preferences, depending on the level of mastery, we did not explore this factor, and we choose to leave such an investigation for the future.

3.4. Methodology and materials

The experiment was conducted in two versions: an English and a corresponding Romanian version. Participants had to read sentences such as (24) and (25) and rate them for acceptability on a Likert scale from 1 ("absolutely wrong") to 5 ("absolutely right"):

(24) a. Sarah has a beautiful big family.
b. Susan has a big beautiful family.

(25) a. Sara are o familie frumoasă mare.
Sara has a family beautiful big.
'Sara has a big beautiful/beautiful big family.'
b. Sara are o familie mare frumoasă.
Sara has a family big beautiful.
'Sara has a beautiful big/big beautiful family.'

We investigated 6 possible combinations of two adjectives expressing Quality, Size and Color:

combinations which are considered in line with the General Adjectival Hierarchy Quality > Size > Color (congruent orders)

(i) Quality-Size
(ii) Quality-Color
(iii) Size-Color

combinations which are considered not in line with the General Adjectival Hierarchy Quality > Size > Color (incongruent orders)

(iv) *Size-Quality
(v) *Color-Size
(vi) *Color-Quality

We tested four adjectives per each category (Quality, Size, Color), as detailed in Table 2.

Table 2. Adjective categories and items

Quality	Size	Color
beautiful	big	red
ugly	little	blue
horrible	huge	yellow
special	tiny	green

This led to 16 combinations per adjective order, and, overall, to 96 combinations (see Table 3).

Table 3. Adjectival combinations tested experimentally

Quality-Size	*Size-Quality	Size-Color	*Color-Size	Quality-Color	*Color-Quality
beautiful big	big beautiful	big red	red-big	beautiful red	red beautiful
beautiful little	little beautiful	big blue	blue big	beautiful blue	blue beautiful
beautiful huge	huge beautiful	big yellow	yellow big	beautiful yellow	yellow beautiful
beautiful tiny	yiny beautiful	big green	green big	beautiful green	green beautiful
ugly big	big ugly	little red	red little	ugly red	red ugly
ugly little	little ugly	little blue	blue little	ugly blue	blue ugly
ugly huge	huge ugly	little yellow	yellow little	ugly yellow	yellow ugly
ugly tiny	tiny ugly	little green	green little	ugly green	green ugly
horrible big	big horrible	huge red	red huge	horrible red	red horrible
horrible little	little horrible	huge blue	blue huge	horrible blue	blue horrible
horrible huge	huge horrible	huge yellow	yellow huge	horrible yellow	yellow horrible
horrible tiny	tiny horrible	huge green	green huge	horrible green	green horrible
special big	big special	tiny red	red tiny	special red	red special
special little	little special	tiny blue	blue tiny	special blue	blue special
special huge	huge special	tiny yellow	yellow tiny	special yellow	yellow special
special tiny	tiny special	tiny green	green tiny	special green	green special

We combined these test items with 16 filler sentences of varying degrees of acceptability, such as (26) or (27):

(26) *The boys are comming to the meeting.
(27) *Vroiam să te invit la dans.
wanted SBJV you invite to dance
'I wanted to invite you to dance.'

3.5. Predictions

Given previous findings from the literature (Scontras et al. 2017, 2019), native English speakers are expected to give answers in accordance with the General Adjective Hierarchy Quality > Size > Color (see Table 4):

Table 4. Expected answers for native English speakers

Category	Expected answer
Quality-Size	5
Quality-Color	5
Size-Color	5
Size-Quality	1
Color-Size	1
Color-Quality	1

As far as native Romanian speakers are concerned, given the discussions in the literature (Cinque 1994, 1995, 2002, 2010 vs. Cornilescu & Giurgea 2013), Cornilescu & Nicolae 2016, Cornilescu & Cosma 2019), we may expect one of the two possibilities: the first one would be that Romanian speakers would rate as acceptable the mirror order of English, and the second one would be that they would be more flexible in their rating, and they would find any order natural (see Table 5). Ther rating of naturalness would in this case vary between 3 and 5.

Table 5. Answers expected for native Romanian speakers

Category	Expected answer 1	Expected answer 2
Quality-Size	1	3-5
Quality Color	1	3-5
Size-Color	1	3-5
Size Quality	5	3-5
Color-Size	5	3-5
Color-Quality	5	3-5

3.6 Results

3.6.1 Results for British English

Native British English speakers were expected to observe the General Adjective Hierarchy Quality > Size > Color according to both syntactic and cognitive accounts.

A look at the individual results (see Table 6, Figure 3) reveals that all English speakers rate congruent orders (Quality-Color, Quality-Size, Size-Color) with the maximum rating 5, while they rate incongruent orders (Color-Quality, Color-Size, Size-Quality) mostly with ratings lower than 2.5 (24 out of 30 participants for Color-Quality, 20 out of 30 speakers for Size-Quality, 22 out of 30 speakers for Color-Size).

Table 6. Average across all conditions for native English speakers

Quality-Color	Color-Quality	Quality-Size	Size-Quality	Size-Color	Color-Size
4.05	2.14	4.32	2.22	3.97	2.30

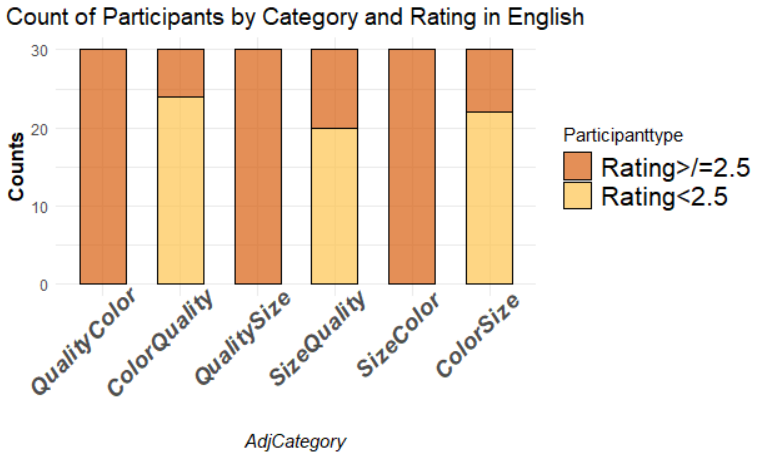


Figure 3. Count of English participants by Category and Rating

As can be seen in Figure 3 and Table 7, when participants evaluate sentences such as those in (28), the answers tend to vary between 3 and 5 on the Likert scale, where 5 means ‘absolutely right’. On the other hand, when participants evaluate sentences such as those in (29), the answers tend to range between 1 and 3 on the Likert scale, where 1 means ‘absolutely wrong’.

(28) a. Quality-Size
Sarah has a beautiful big family.
b. Quality-Color
He offered me a beautiful red rose.
c. Size-Color
Don’t press the big red button!

(29) a. Size-Quality
Sarah has a big beautiful family.
b. Color-Quality
He offered me a red beautiful rose.
c. Color-Size
Don’t press the red big button!

Table 7. Average per condition for each native English Speaker

Participants	Quality-Color	Color-Quality	Quality-Size	Size-Quality	Color-Size	Size-Color
A1	4.38	2.19	4.81	1.56	1.88	4.50
A2	3.38	1.63	4.13	1.31	1.88	3.69
A3	5.00	1.13	5.00	1.38	1.25	4.75
A4	4.00	3.06	4.19	2.31	2.38	3.44
A5	2.75	3.00	2.94	2.56	3.00	2.69
A6	4.06	4.00	4.13	3.88	4.06	4.06
A7	3.56	2.00	3.50	1.94	2.31	3.75
A8	3.75	2.88	4.25	2.81	2.44	3.88
A9	3.88	2.06	4.19	1.94	1.88	4.00
A10	4.69	2.06	4.38	2.81	1.50	3.44
A11	4.00	2.31	4.13	2.13	2.13	3.88
A12	4.06	1.94	4.31	2.13	1.69	3.69
A13	3.19	3.13	3.00	3.31	2.44	3.38
A14	4.00	1.81	4.63	1.81	2.13	3.63
A15	3.63	2.38	3.63	3.00	1.56	3.31
A16	3.19	3.25	3.44	3.19	3.19	3.25
A17	4.38	1.56	4.69	1.81	2.31	4.63
A18	3.38	1.94	4.13	2.31	2.56	3.50
A19	4.38	1.50	4.56	1.75	2.19	3.94
A20	4.69	1.63	5.00	1.81	2.13	4.13
A21	4.31	1.88	4.75	2.06	1.75	4.25
A22	3.44	2.38	4.06	2.69	2.88	3.69
A23	3.88	2.06	4.44	1.81	2.75	4.56
A24	4.44	1.81	4.75	2.13	2.50	4.63
A25	3.81	1.88	5.00	2.13	3.06	4.63
A26	4.69	1.19	5.00	1.56	1.94	4.63
A27	4.88	1.94	4.81	2.31	2.75	4.75
A28	4.31	1.88	4.81	2.06	2.63	4.31
A29	4.88	1.63	4.69	1.69	2.25	4.88
A30	4.56	2.13	4.19	2.25	1.63	3.69

Based on Figure 3, Tables 5, 6 and 7, there seems to be a considerable difference between mean ratings for congruent orders (Quality-Size/Quality-Color/Size-Color) and mean ratings for incongruent orders in English (Size- Quality/Color-Size/Color-Quality).

Out of 30 participants, 80% rated congruent orders higher than 3 and incongruent orders lower than 3. This is in line with our expectations.

3.6.1. Results for Romanian

The answers provided by native Romanian speakers were expected to either reflect a mirror order of English version, or to show a more flexible adjective order. We find that native Romanian speakers tended to consider all orders acceptable (both congruent and incongruent), as shown in Table 8:

Table 8. Average across all conditions for native Romanian speakers

Quality-Color	Color-Quality	Quality-Size	Size-Quality	Size-Color	Color-Size
3.18	3.50	2.98	3.61	3.29	3.55

A look at the individual results (see Figure 4, Table 9) reveals that most of the Romanian speakers rate as acceptable both congruent orders (Quality-Color, Quality-Size, Size-Color) and incongruent orders (Color-Quality, Color-Size, Size-Quality), giving ratings higher than 2.5 (28 out of 30 participants for Color-Quality, 27 out of 30 speakers for Size-Quality, 25 out of 30 speakers for Color-Size).

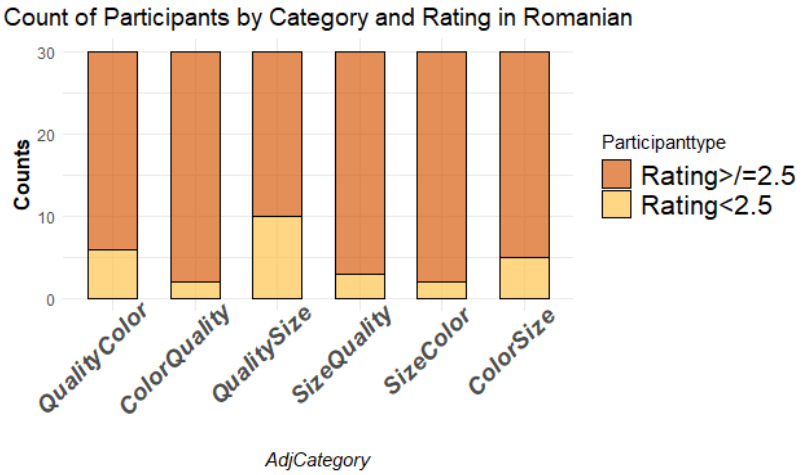


Figure 4. Count of Romanian participants by Category and Rating

Table 9. Average per condition for each native Romanian speaker

Participants	Quality-Size	Colour-Quality	Size-Colour	Size-Quality	Colour-Size	Quality-Colour
B1	2.06	2.81	2.56	3.56	4.00	3.50
B2	3.56	4.06	3.63	4.13	4.50	3.56
B3	1.06	1.06	1.13	1.19	1.06	1.13
B4	2.13	3.56	2.38	4.81	3.94	1.94

Participants	Quality-Size	Colour-Quality	Size-Colour	Size-Quality	Colour-Size	Quality-Colour
B5	3.31	4.31	3.94	3.69	4.38	3.31
B6	2.63	5.00	2.75	3.88	3.69	1.63
B7	1.69	2.75	3.38	4.81	3.38	3.63
B8	3.75	3.88	4.00	3.94	4.13	4.06
B9	1.56	1.31	1.38	1.13	1.31	1.25
B10	4.25	3.69	4.06	3.19	3.63	4.13
B11	2.75	3.56	4.38	4.44	4.00	3.00
B12	5.00	5.00	5.00	5.00	5.00	5.00
B13	2.19	2.56	2.56	2.38	2.50	2.94
B14	2.63	3.19	2.94	3.13	3.75	3.13
B15	4.25	3.88	4.19	3.56	3.75	4.13
B16	1.75	4.44	3.56	4.00	3.31	1.56
B17	5.00	5.00	5.00	4.94	5.00	5.00
B18	2.13	3.63	3.50	3.75	3.94	2.88
B19	3.56	4.00	4.00	4.06	3.88	3.88
B20	2.38	3.94	2.81	3.38	3.44	2.75
B21	2.88	3.00	2.44	3.13	2.63	2.75
B22	3.94	4.13	4.50	4.31	4.56	4.06
B23	1.94	2.50	2.56	4.19	4.50	4.50
B24	2.88	3.00	2.44	3.13	2.63	2.75
B25	4.00	3.81	3.69	3.69	4.00	3.88
B26	3.63	3.56	3.06	3.69	3.19	2.75
B27	2.94	3.69	3.00	2.88	3.19	2.44
B28	3.00	3.63	3.88	3.81	3.75	3.88
B29	3.19	3.13	2.88	3.00	2.63	2.88
B30	3.38	2.94	3.06	3.63	2.94	3.00

It is very hard to determine what the "correct" order of categories is according to participants because there is a lot of variation in their answers, unlike in English. Some of the native Romanian participants rate a certain order as being completely wrong (i.e. Quality-Size receives a rating of 1.06 from one participant), while others rate the same category as being absolutely right (Quality-Size receives a rating of 5.00). Nevertheless, most of the responses range between 3 and 4 for all orders.

When participants evaluate sentences such as those in (30), their answers tend to vary between 2 and 4 on the Likert scale (1 means 'absolutely wrong', 5 means

'absolutely right'). Moreover, the answers are almost equal to those in (31). The general average per each category is around 3.

(30) a. Quality-Size
Sara are o familie frumoasă mare.
Sara has a family beautiful big
'Sarah has a big beautiful family.'

b. Quality-Color
Mi- a oferit un trandafir frumos roșu.
to me has offered a rose beautiful red
'He/she offered me a red beautiful rose.'

c. Size-Color
Nu apăsa butonul mare roșu!
not press button big red
'Don't press the red big button!'

(31) a. Size-Quality:
Sara are o familie mare frumoasă.
Sara has a family big beautiful
'Sarah has a beautiful big family.'

b. Color-Quality:
Mi- a oferit un trandafir roșu frumos.
to me has offered a rose red beautiful
'He/she offered me a beautiful red rose.'

c. Color-Size:
Nu apăsa butonul roșu mare!
not press button-the red big
'Don't press the big red button!'

3.6.2. Comparing the results for British English and Romanian

We find that British English speakers have stronger preferences for the ordering Quality > Size > Color, while Romanian speakers seem to accept all orders of adjectives (see Figure 5), with only a slight preference for the mirror orders Color-Quality, Size-Quality, and Color-Size.

We analyzed the results using R-4.0.5 (2021). We computed a linear regression model to compare the Ratings depending on Order (Color-Size, Size-Color, Quality-Color, Color-Quality, Quality-Size, Size-Quality) and Language Group (British English, Romanian). We found significant effects per Group (ß = 1.345, SE = 0.08, Z = 15.69, $p < .01$), the orders Color-Size (ß = 1.89, SE = 0.08, Z = 22.114, $p < .01$), Quality-Color (ß = 1.89, SE = 0.08, Z = 22.11, $p < .01$), Quality-Size (ß = 2.16, SE = 0.08, Z = 25.226, $p < .01$), Size-Color (ß = 1.81, SE = 0.08, Z = 21.143, $p < .01$), as well as the interaction between Group and the order Quality-Color (ß = −2.22, SE = 0.121, Z = −18.319, p < .01), the interaction between Group and the order Quality-Size (ß = −2.683, SE = 0.121, Z = −22.13, $p < .01$), and the interaction between Group and the order Size-Color

(ß = −2.025, SE = 0.121, Z = −16.703, $p < .01$).We then applied an ANOVA and found a significant effect for Group (F= 26.93, $p < .01$), Order (F= 89.65, p < .01), as well as an interaction between Group and Order (F= 220.78, p <.01). We proceeded to do a post-hoc Tukey analysis, and we found significant effects for the order Size-Color in English vs. Size Color in Romanian ($p < .01$), for the order Color-Size in English vs. Color-Size in Romanian ($p < .01$), for the order Quality-Color in English vs. Quality-Color in Romanian ($p < .01$), for the order Color-Quality in English vs. Color-Quality in Romanian ($p < .01$), for the order Quality-Size in English vs. Quality-Size in Romanian ($p < .01$), and for the order Size-Quality in English vs. Size-Quality in Romanian ($p < .01$).

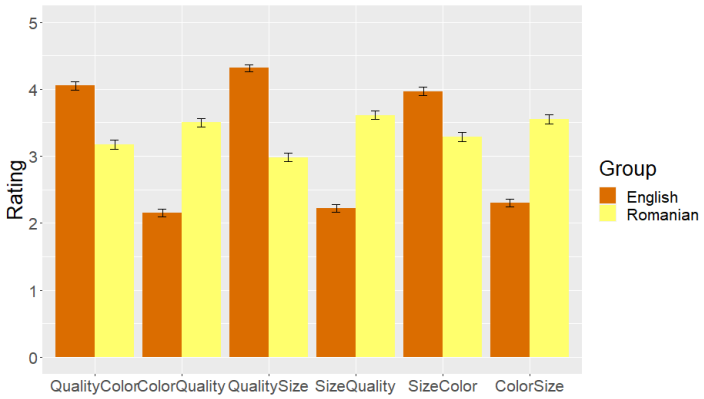


Figure 5. Rating given by participants by adjectival order and language group

We also found significant effects for the orders Size Color vs. Color Size in English ($p < .01$), for Quality Quality-Color vs. Color-Quality in English ($p < .01$), for Quality-Color vs. Color-Quality in Romanian ($p < .01$) and in English ($p < .01$), for the orders Quality-Size vs. Size-Quality in English ($p < .01$), for the orders Quality-Size vs. Size-Quality in Romanian ($p < .01$).

Importantly, we also found significant effects for the order Size-Color in English vs. the mirror order Color-Size in Romanian ($p < .01$), for the order Color-Size in English vs. the mirror Size-Color in Romanian ($p < .01$), for the order Quality-Color in English vs. the mirror Color-Quality in Romanian ($p < .01$), for the order Color-Quality in English vs. the mirror Quality-Color in Romanian ($p < .01$), for the order Quality-Size in English vs. the mirror Size-Quality in Romanian ($p < .01$), and for the order Size-Quality in English vs. the mirror Quality-Size in Romanian ($p < .01$).

4. Discussion

Comparing the results of the two experiments per adjective order, we notice a striking contrast between English and Romanian. Overall, the English results suggest the existence the General Adjective Hierarchy Quality > Size > Color: participants seem to consistently prefer orders where Quality adjectives are placed above/before Size, as well

as Color adjectives, and Size adjectives are placed above/before Color adjectives. The Romanian results suggest more similar ratings for sentences containing N Size Color, N Size Quality, and N Color Quality sequences and sentences containing N Color Size, N Quality Size, and N Quality Color sequences than in English.

The comparison between Quality-Size and Size-Quality shows that the Quality-Size order (the average = 4.32) seems more natural to native English speakers than the Size-Quality order (the average = 2.21). That being said, sentences like (32) are rated by participants as correct, and sentences like (33) are rated as wrong. In comparison to English, the Romanian sentence varies between 3 (Quality-Size) and 3.61 (Size-Quality), indicating a medium rating and, consequently, a freer order. Therefore, sentences like (35) are rated almost the same as sentences like (34):

(32) She is a beautiful little girl.
(33) She is a little beautiful girl.
(34) E o fată micuță frumoasă.
is a girl little beautiful
'She is a beautiful little girl.
(35) E o fată frumoasă micuță
is a girl beautiful little
'She is a little beautiful girl.

The comparison of the Quality-Color/Color-Quality order shows that Quality-Color order (the average = 4.05) sounds more natural to native English people than the Color-Quality order (the average = 2.14). Thus, sentences like (36) are rated by the participants as correct, and sentences like (37) are rated as wrong. The Romanian sentence varies between 3.18 (Quality-Color) and 3.50 (Color-Quality), suggesting a free order. This means that sentences like (38) are rated almost the same as sentences like (39), where the order of adjectives is the reverse of (37):

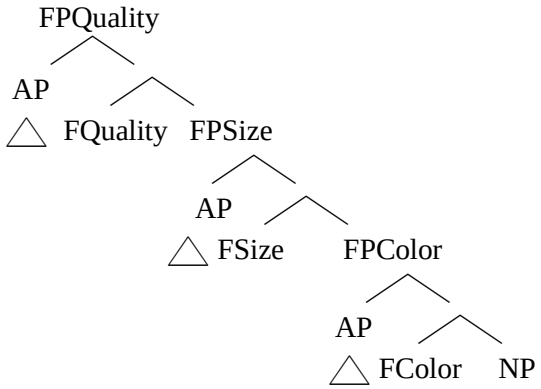
(36) Luis bought a beautiful blue car for his dad.
(37) Luis bought a blue beautiful car for his dad.
(38) Luis i- a cumpărat tatălui său o mașină albastră frumoasă.
Luis to him has bought dad his a car blue beautiful
'Luis bought a beautiful blue car for his dad.'
(39) Luis i- a cumpărat tatălui său o mașină frumoasă albastră.
Luis to him has bought dad his a car beautiful blue
'Luis bought a blue beautiful car for his dad.'

The comparison of the Size-Color/Color-Size category shows that Size-Color order (the average = 3,98) sounds more natural to native English people than the Color-Size order (the average = 2.30). Thus, sentences like (40) are rated by the participants as correct, and sentences like (41) are rated as wrong. In comparison to the English version, the Romanian one varies between 3.29 (Size-Color) and 3.55 (Color-Size indicating a medium answer and a free order. Thus, sentences like (42) are rated almost the same as sentences like (43):

(40) Can you give me the big blue bottle, please?
(41) Can you give me the blue big bottle, please?
(42) Poți să îmi dai sticla albastră mare te rog?
can SBJV to me give bottle-the blue big you beg
'Can you give me the big blue bottle, please?'
(43) Poți să îmi dai sticla mare albastră te rog
Can SBJV to me give bottle-the big blue you beg
'Can you give me the big blue bottle, please?

The hierarchy QUALITY > SIZE > COLOR holds for native English speakers. The experiment shows that the adjectival combinations of Quality-Size/Quality-Color/ Size-Color are natural for native English speakers, who rated them as expected (between 4 and 5). The reverse order (Size-Quality/Color-Quality/Color-Size) of the adjectives was judged wrong by the speakers and it was rated as we expected (between 1 and 2.5). The source of this general hierarchy could be cartographic syntax (Cinque 1994, 2005, 2010) – see (44a), ordered adjunction – see (44b) or subjectivity (Scontras et al. 2017, 2019).

(44) a.



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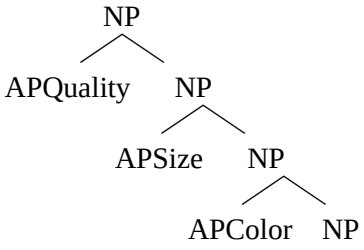
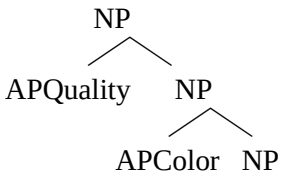
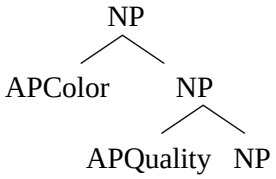


In contrast, there seems to be no General Adjective Hierarchy for native Romanian speakers. In Romanian, the answers (averaging around 3) are neither in accordance with Cinque's mirror order, nor with Scontras et al.'s (2017, 2019) theory of subjectivity, but, instead, they seem to indicate a freer adjective order (see 45):

(45) a.



b.



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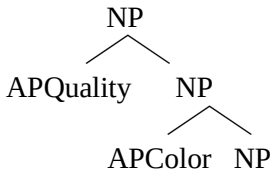

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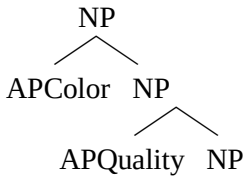

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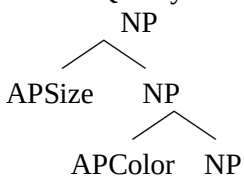

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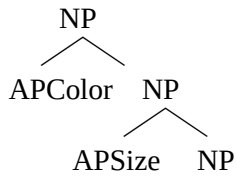

5. Conclusions

In this paper we have provided experimental evidence from native English and Romanian adult speakers that adjectives observe a more fixed ordering English, but not in Romanian. The current findings seem to support the view that adjective orders do not constitute a principle of Universal Grammar but are best treated as a parameter, which may get valued through a rigid ordering in some languages and through a freer order in others.

Data availability

The data and code associated with the paper are available at https://osf.io/rsj3b/.

Ethics and consent

The study has been conducted under approval of the Research Ethics Committee in Bucharest (19/17.02.2022), and consent has been obtained from all participants.

Acknowledgments

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References

Abels, K., Neeleman, A. 2010. Linear asymmetries and the LCA. *Syntax* 12 (1): 25-74.

Bleotu, A. C., Foucault, D., Roeper T. 2023a. The Recursive Set-Subset Ordering Principle orders adjectives and relative clauses in visual context. *Proceedings of the Linguistic Society of America* 8 (1): 5535.

Bleotu, A. C., Foucault, D., Roeper, T. 2023b. *Long short leaves* are 'leaves that are short that are long'. The Recursive Set-Subset Principle orders both adjectives and relative clauses. In L. Fagen, S. G. Quain, S. Reyes & I. Tang (eds.), *Proceedings of the 58th Annual Meeting of the Chicago Linguistic Society*, 13-27. Chicago, IL: Chicago Linguistic Society

Bleotu, A. C., Roeper, T. 2021a. *Small big flowers* or *small and big flowers*? Simple is better and Roll-Up is too complex for Romanian 5-year-olds. In D. Dionne & L. A. Vidal Covas (eds.), *Proceedings of the 45th annual Boston University Conference on Language Development*, vol. 1, 66-79. Somerville, MA: Cascadilla Press.

Bleotu, A. C., Roeper, T. 2021b. Roll-Up is too complex for Romanian 5-year-olds. Evidence from recursive adjectives. In *Proceedings of the Linguistic Society of America* 6 (1): 133-143.

Bleotu, A. C.**,** Roeper, T. 2022a. The recursive set-subset ordering restriction overrides adjective ordering restrictions. Evidence from Romanian 4-year-olds and adults. In Y. Gong & F. Kpogo (eds), *Proceedings of the 46th Annual Boston University Conference on Language Development*, vol. 1: 62-75. Somerville, MA: Cascadilla Press.

Bleotu, A. C., Roeper T. 2022b. Children are more sensitive to the recursive set-subset ordering than to adjective ordering restrictions. In *Proceedings of the Linguistic Society of America* 7 (1): 5267.

Brăescu, R. 2011. *Adjectivul în limba română. Sintaxă şi semantică*. Bucharest: Editura Universităţii din Bucureşti.

Champollion, L. 2006. A game-theoretic account of adjective ordering restrictions. Ms., University of Pennsylvania.

Cinque, G. 1994. On the evidence for partial N-movement in the Romance DP. In G. Cinque, J. Koster, J. Y. Pollock, L. Rizzi & R. Zanuttini (eds.), *Paths Towards Universal Grammar. Studies in Honor of Richard S. Kayne*, 85-110. Washington DC: Georgetown University Press.

Cinque, G. 2005. Deriving Greenberg's universal 20 and its exceptions. *Linguistic Inquiry* 36 (3): 315-332.

Cinque, G. 2010. *The Syntax of Adjectives. A Comparative Study*. Cambridge, MA: MIT Press.

Cornilescu, A. & Cosma, R. 2019. Linearization of attributive adjectives in Romanian. *Revue roumaine de linguistique* LXIV (3): 307-323.

Cornilescu, A. & Giurgea, I. 2013. The adjective. In C. Dobrovie-Sorin & I. Giurgea (eds.), *A Reference Grammar of Romanian*, vol. 1: 355-530. Amsterdam/Philadelphia: John Benjamins.

Cornilescu, A. & Nicolae, A. 2016. Romanian adjectives at the syntax–semantics interface. *Acta Linguistica Hungarica* 63 (2): 197-240.

Dixon, R. M. W. 1982. '*Where Have All the Adjectives Gone?' and other Essays in Semantics and Syntax*. Berlin: Mouton de Gruyter.

Foucault, D., Bleotu, A. C., Lakshmanan, U., Merritt, E., Sybing, R. & Roeper, T. 2022. Relative gradable adjective recursion is more challenging for acquisition than possessive recursion. In *Proceedings of the Linguistic Society of America* 7 (1): 5294.

Hewings, M. 2004. An 'important contribution' or 'tiresome reading'? A study of evaluation in peer reviews of journal article submissions. *Journal of Applied Linguistics and Professional Practice* 1 (3): 247-274.

Huston, S. & Thompson, G. (eds.). 2000. *Evaluation in Text Authorial Stance and the Construction of Discourse*. Oxford: Oxford University Press.

Kamp, H. & Partee, B. 1995. Prototype theory and compositionality. *Cognition* 57: 129-191.

Kölbel, M. 2004. Faultless disagreement. *Proceedings of the Aristotelian Society* 104 (1): 53-73.

Kayne, R. S. 1994. *The Antisymmetry of Syntax*. Cambridge, MA: MIT Press.

Kremers, J. M. 2003. The Arabic Noun Phrase: A Minimalist Perspective. PhD dissertation, Radboud University, Nijmegen.

Larson, R. K., Marusic, F. 2004. On indefinite pronoun structures with APs: Reply to Kishimoto. *Linguistic Inquiry* 35: 268-287.

Leivada, E., Westergaard, M. 2019. Universal linguistic hierarchies are not innately wired. Evidence from multiple adjectives. *Peer J* 7: e7438.

MacFarlane, J. 2014. *Assessment Sensitivity.* Oxford, UK: Clarendon Press.

Panayidou, F. 2013. (In)flexibility in Adjective Ordering. PhD dissertation, Queen Mary University of London.

Sadler, L., Douglas, J. A. 1994. Prenominal adjectives and the phrasal/lexical distinction. *Journal of Linguistics* 30: 221-222.

Scontras, Gr., Degen J., Goodman, N., D. 2017. Subjectivity predicts adjective ordering preferences. *Open Mind: Discoveries in Cognitive Science* 1 (1): 53-65.

Scontras, Gr., Degen, J., Goodman, N. D. 2019. On the grammatical source of adjective ordering preferences. *Semantics and Pragmatics* 12 (7): 1-24.

Scott. G. J. 2002. Stacked adjectival modification and the structure of nominal phrases. In G. Cinque (ed.), *Functional Structure in DP and IP*, vol. 1, *The Cartography of Syntactic Structures*, 91-120. Oxford and New York, NY: Oxford University Press.

Siegel, M. 1976. Capturing the Adjective. PhD dissertation, University of Massachusetts, Amherst.

Siegel, M. 1979. Measure adjectives in Montague Grammar. In S. Davis & M. Mithun (eds.), *Linguistics, Philosophy, and Montague Grammar*, 223-262. Austin, TX: University of Texas Press.

Sproat R. & Shih, C. 1991. The cross-linguistic distribution of Adjective Ordering Restrictions. In C. Georgopoulos & R. Ishihara (eds.), *Interdisciplinary Approaches to Language*, 565-593. Dordrecht: Kluwer.

Trainin, N. & Shetreet, E. 2021. It's a dotted blue big star: On adjective ordering in a post-nominal language. *Language, Cognition and Neuroscience* 36 (3): 320-341.

Williams, E. 1994. *Thematic Structure in Syntax*. Cambridge, MA: MIT Press.

HOW ARE SIZE, AGE, SHAPE, AND COLOR ADJECTIVES ORDERED IN ENGLISH AND ROMANIAN? AN EXPERIMENTAL INVESTIGATION

Adina Camelia Bleotu and Amalia Luciu*

Abstract: The current study investigates experimentally whether the General Adjective Hierarchy Size > Age > Shape > Color holds for British English and Romanian native speakers alike, and whether Romanian exhibits a mirror order of English, as argued in Cinque (1994, 2005, 2010) or whether Romanian exhibits a more flexible ordering than English (Cornilescu & Nicolae 2016, Cornilescu & Cosma 2019, Leivada & Westergaard 2019). The results from a forced choice task conducted both in British English and Romanian support the idea that English observes the fixed hierarchy Size > Age > Shape > Color overall, while Romanian is more flexible in its ordering. These results go against Cinque's (1994) cartographic theory that Romance is a mirror of English, as well as against Scontras et al.'s (2017) theory of subjectivity; instead, the results may be captured by free adjunction. Our findings for English and Romanian support the idea that certain languages (like English) observe general hierarchies for adjectives, while other languages (like Romanian) do not.

Keywords: English, Romanian, adjectives, adjective hierarchy, adjectival orders, adjunction, experimental linguistics

1. Introduction

The aim of this paper is to investigate experimentally how Size, Age, Shape, and Color adjectives are ordered in British English and Romanian. More specifically, we test whether participants order adjectives in line with the General Adjective Hierarchy Size > Age > Shape > Color (Hetzron 1978, Dixon 1982, Cinque 1994, Scott 2002, Cinque 2005, 2010, Scontras et al. 2017, 2019) or not. Previewing the results, we find that British English native speakers abide by adjective ordering restrictions (AORs), while Romanian native speakers employ a more flexible ordering of adjectives.

The roadmap for the paper is as follows: after presenting the aim of the paper in Section 1, in Section 2, we present some general background on adjective orders in English and Romanian. In Section 3, we present the current experiments investigating adjectival orders in English and Romanian. In Section 4, we discuss the experimental results, while in Section 5, we draw the conclusions of our experimental research.

2. Overview

2.1 Overview of studies on adjective orders in English

Over the years, the idea that there is a strict adjective order in English has proved popular in the linguistic community. Many, if not all English speakers (including L2

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speakers) would agree that (1a) is a more natural sentence when compared to (1b), and the same can be said about (1c) when compared to (1d):

(1) a. She has a big old table.
b. She has an old big table.
c. I want the little red book.
d. I want the red little book.

Adjective Ordering Restrictions (AOR) can sometimes be overridden in exceptional cases such as adjectives that are homophonous with reduced relatives, comma intonation, adjectives that bear focus (see 2), operator adjectives (ex: *formerly, alleged*), non-definite superlatives, a.o. (see Teodorescu 2006).

(2) a. She wants an OLD big table.
b. I want the RED little book.

Nonetheless, while we acknowledge that there are certain exceptions to AOR, preferences are still found in most cases as argued by a wide array of linguistic studies (Hetzron 1978, Dixon 1982, Cinque 1994, Scott 2002, Cinque 1010, Scontras et al. 2017, 2019, a.o.). Various generalizations about adjective orderings have been proposed, for example:

(3) a. EVALUATING > SIZE > COLOR (Hetzron 1978)
b. VALUE > DIMENSION > PHYSICAL PROPERTY > SPEED > HUMAN PROPENSITY > AGE > COLOR (Dixon 1982)
c. SUBJECTIVE COMMENT > SIZE > LENGTH > HEIGHT > SPEED > WIDTH > WEIGHT > TEMPERATURE > AGE > SHAPE > COLOR > NATIONALITY/ORIGIN > MATERIAL (Scott 2002)
d. DIMENSION > VALUE> AGE > PHYSICAL SHAPE > COLOR > MATERIAL, i.e. MORE SUBJECTIVE ADJECTIVES > LESS SUBJECTIVE ADJECTIVES (Scontras et al. 2017)

There are many theories about why AORs arise, and what factors may influence them: syntactic theories, as well as cognitive-semantic, frequency-based or informational gain/loss theories. We start by discussing the syntactic theories (cartographic account, adjunction account). According to Cinque (1994), AORs have a syntactic source, with adjective phrases being generated in the [Spec, XP] of multiple projections rather than adjoined. Cinque (1994) thus proposes a cartographic approach to AORs, claiming that adjectives are base generated to the left of the nominal head (as in English) and ordered syntactically in a fixed order. Nevertheless, while claiming AORs are rigid, he acknowledges that they may be violated when adjective phrases are asyndetically coordinated, and when a marked interpretation is needed. Importantly, Romance and Germanic languages are closer than it may seem at first sight: AORs are essentially the same in consistently NA and AN languages, with Romance languages representing a mirror order of AN languages (see subsection 2.2 for a more elaborate discussion of this claim).

An alternative syntactic account to the cartographic approach is the adjunction account (Kremers 2003, Abels & Neeleman 2010), according to which adjectives are XPs adjoined to nouns: in languages such as English, where adjectives precede nouns, adjunction is to the left of the noun, whereas in languages such as Romanian, where nouns (typically) precede adjectives, adjunction is to the right of the noun. In Cinque's view, adjunction cannot explain the fixed adjectival order in English, as adjunction of XPs may occur in any order. Such an account may, however, work if one assumes a more rigid sequence of adjunction. While the (free) adjunction account may be problematic for English, where most of the literature seems to agree on the AOR being fixed, it may explain the more flexible adjectival order in languages such as Romanian (Cornilescu & Cosma 2019, Cornilescu & Giurgea 2013, Cornilescu & Nicolae 2016), Greek (Leivada & Westergaard 2019), or Hebrew (Trainin & Sheetreet 2021).

Another theory claims that AORs are cognitive-semantic. According to Scontras et al. (2017), they are derived from general properties of cognition, in particular subjectivity. The adjectival order listed in (3d) is based on corpus analysis, as well as results from an experiment combining adjectives from seven different semantic classes in two-by-two pairs. Importantly, subjectivity was found to matter for AOR. The authors measured subjectivity by means of two tasks: in the first task they asked participants to judge the subjectivity of an adjective on a Likert scale, in the second task, they asked participants if two opposite views can be correct at the same time with respect to an object (faultless disagreement). They found that, overall, subjectivity accounts for over 70% of the variance, while frequency and length also play a small part (e.g. the fact that *entrepreneurial* tends to appear closer to the noun may be explained in terms of its bigger length compared to other adjectives). Importantly, adjectives that are further away from each other on the subjectivity scale in (3d) (such as dimension and color adjectives) seem to be arranged in a very clear order, while adjectives that are closer to each other on the subjectivity scale (such as shape and color adjectives) may be arranged flexibly (see Grohe & Schulz 2022). The existence of AOR shows that linguistic universals derive from cognitive universals. Scontras et al. (2019) criticize Cinque's approach, pointing out to the fact that a syntax that allows only one ordering for any string of adjectives is too rigid. According to the authors, a fixed structural hierarchy would predict categorical ordering preferences. However, they found graded judgments that track differential subjectivity. Moreover, according to the authors, a syntactic approach fails to explain the ultimate reason why the nodes arrange in the order of subjectivity. In contrast, their approach relates AORs to an increase in the probability of communicative success (Franke et al. 2019): ordering with respect to subjectivity minimizes the probability of misclassifications for multi-adjectival strings and increases the accuracy in referent identification.

A similar proposal to Scontras et al. (2017, 2019) has been made for German by Kotowski & Härtl (2019), who argue on the basis of a German corpus that the only hard constraint is between object- and kind- modification, while other factors such as notional class, weight, frequency simply represent norm-based preferences rather than imposing rigid rules.

A third possible account of AORs is frequency-based (Champollion 2006). According to Champollion (2006), all adjective orderings are possible (there are no strict

rules), but some are disfavored due to higher cost. He argues that semantics plays an important role in AORs, and that there is a correlation between adjective orders and frequency.

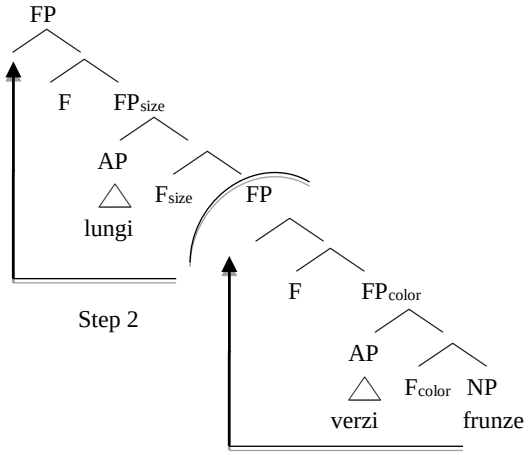
A fourth possible account of AORs could involve memory limitations (Hahn et al. 2018). According to Hahn et al. (2018), the first adjective is more likely to be lost in a noun phrase. This means that putting the objective adjective closer to the head will result in lower levels of uncertainty about the state of the world.

While researchers may disagree over the exact source of AORs in English, there is wide consensus over the rather fixed nature of a general hierarchy for adjectives in English.

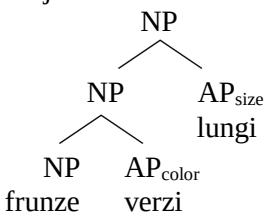
2.1. Overview of studies on adjective orders in Romanian

As far as Romanian is concerned, a Romance language where most adjectives are postnominal, there are two existing views in the literature on AORs – see (4):

(4) a. Roll-Up



b. Adjunction



According to Cinque (1994, 2005, 2010), in post-nominal adjective order, Romance languages mirror the Germanic adjective order (Cinque 2010). In order to capture the mirror effect, he proposes a Roll-Up-of-N account, deriving the mirror order by means of a set of movement operations starting from the basic English order. For instance, in (4a), the NP moves out of its position to an outer specifier (Step 1) of FP_{color}, then the newly formed FP containing FP_{color} moves out of its position to the outer specifier of the projection hosting FP_{size} (Step 2).

This view is partly supported by Rizzi et al. (2013), who investigate adjective order preferences (prenominal/postnominal) in bilingual children who either speak German and a Romance language or two Romance languages. They assume that in a bilingual child's brain, the two languages influence each other, and there may be a preference for the less complex grammatical phenomenon. Their results show that children prefer prenominal over postnominal adjectives when they produce target-deviant word orders. These findings support the idea that prenominal adjectives are derivationally less complex while the process that results in postnominal adjectives involves more steps, possibly Roll-Up.

Cinque's account (1994, 2005, 2010) is also supported by recent research by Bleotu & Roeper (2021a, b, 2022a, b) showing that adults are able to correctly interpret and produce recursive adjectives, i.e. adjectives that are merged by means of embedding/indirect recursion (Roeper 2011), and which help identify a Subset out of a Set (e.g. *flori mari mici* 'flowers big small', corresponding to *the small big flowers*). Additionally, Bleotu & Roeper (2022a, b) show that both Romanian adults and children seem to order recursive adjectives specifying different properties as a mirror image of English. In both languages, speakers tend to observe a Recursive Set Subset Ordering Constraint, i.e. they tend to place the adjective specifying a Set closer to the noun than the adjective specifying a Subset (see Bleotu et al. 2023). They would, for instance, use (5) to describe the circled leaves in Figure 1, and (6) to describe the circled leaves in Figure 2.

(5) frunze verzi lungi
leaves green l ong
'long green leaves'

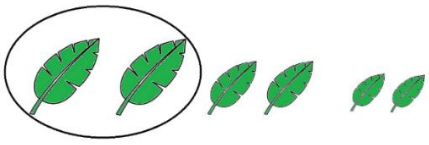


Figure 1. Example item for recursive adjectives in harmony with AOR

(6) frunze lungi verzi
leaves long green
'green long leaves'

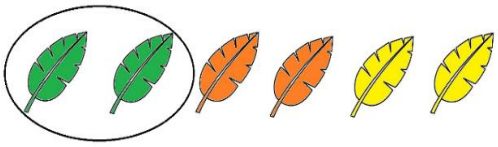


Figure 2. Example item for recursive adjectives in conflict with AOR

The Recursive Set Subset Ordering Constraint override AORs. Moreover, it also holds for recursive adjectives specifying the same dimension: size (Bleotu & Roeper 2021a, b). Here, however, Romanian adults differ from children: while almost all Romanian adults

consistently interpret (7b), a mirror order of English (7a), as referring to a subset of small flowers among a set of big flowers (flowers 3 and 4 in Figure 3), Romanian children tend to struggle with this interpretation more, often defaulting to coordination ('big and small flowers') or a simpler interpretation, deleting an adjective.

(7) a. small big flowers

b. flori(le) mari mici
flowers(-the) big small
'(the) small big flowers'

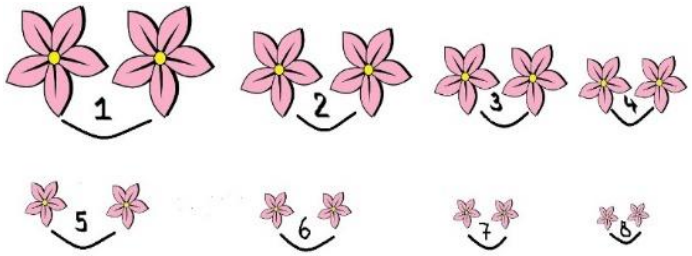


Figure 3. Example item for recursive adjectives specifying the Size dimension

Interestingly, English children seem to be able to handle such adjectives (Foucault et al. 2022). Bleotu & Roeper (2021a, b) have argued that Romanian children's difficulty with recursive adjectives specifying the Size dimension may have to do with the complexity of the syntactic operations involved in Roll-Up. Based on recursive uses of adjectives, i.e., uses which help identify a Subset out of Set, Bleotu & Roeper (2021a, b, 2022a, b) argued in favour of the cartographic approach. It is important to note that their account does not necessarily extend to coordinative uses of adjectives, i.e. uses which do not necessarily identify a Subset out of a Set.

In contrast to the cartographic approach, according to Cornilescu & Cosma (2019), adjectives are ordered more freely in Romanian than in English. Note, however, that in making this claim the authors often focus on non-recursive/possibly coordinative uses of adjectives. On the basis of a corpus study, the authors conclude that, in postnominal order, taxonomic adjectives tend to stay closer to the head than qualifying adjectives (which do not have a taxonomic reading) but, apart from this general tendency, adjectives are rather free in their ordering. The authors' findings are more in line with Scontras et al. (2017) than with Cinque (2010). Importantly, an adjunction account would seem better able to explain the data in Romanian.

A similar claim has recently been made by Pérez-Leroux et al. (2020): there is variability in AORs, but not for all adjective types. Pérez-Leroux et al. (2020) investigated Spanish adjectives and concluded that certain adjectives seem to observe a fixed order: color seems to precede other physical properties, and there is a tendency for value adjectives to occur closer to the periphery than the ones related to physical properties. This latter finding would be consistent with the theory that more subjective adjectives are closer to the noun than the more objective ones. It would also be

compatible with Dyer et al. (2020)'s information gain theory, arguing that modifiers/ adjectives which maximize information gain tend to be placed first in a variety of languages (AAN, NAA, ANA) – see also Smirnova et al. (2019) for similar findings for binomials.

An even more radical idea of a completely variable adjective ordering has been proposed for other languages (for instance, Greek, Hebrew). Leivada & Westergaard (2019), for instance, showed experimentally that speakers of Standard Greek and bidialectal speakers of Standard Greek and Cypriot Greek judged both hierarchy-non-compliant orders and hierarchy-compliant-orders as correct, as well as processed non-compliant orders similarly to hierarchy-compliant orders. They conclude that there is no universal hierarchy for adjective ordering imposing a hard constraint which results into a rigid, unmarked order. Trainin & Sheetreet (2020) investigated AORs in Hebrew in comparison to English by means of three different tasks (production, naturalness rating, and forced choice). They found that, while English speakers showed a strong preference for fixed AORs, Hebrew speakers seemed to be more variable in their preferences. Importantly, for multiple adjective strings, the orders in Hebrew did not represent a mirror image of English.

Thus, various accounts make different predictions about AORs in Romanian and other Romance languages: the cartographic account predicts that Romanian speakers should be more rigid in their ordering, showing a mirror of the English order, while the previous literature on AORs in Romanian and other languages suggests that Romanian adult speakers may be more flexible in their ordering of adjectives.

3. Current experiments

We experimentally investigated English and Romanian AORs for the following categories of adjectives: Size, Age, Shape, and Color in order to determine whether or not, as suggested by Cinque (1994, 2005, 2010) and Scontras et al. (2017, 2019), these adjectives observe a similarly fixed order in the two languages: Size > Age > Shape > Color Noun (for English), and the mirror image Noun Color > Shape > Age > Size (for Romanian).

3.1. Experiment in British English

3.1.1. Predictions

Based on previous claims and findings from the literature, we expected British speakers to order adjectives in accordance with the AOR Size > Age > Shape > Color Noun.

3.1.2. Participants

The experiment involved 32 native speakers of British English (Age range: 18–22). They answered voluntarily and were contacted online through Facebook groups.

3.1.3. Methodology and materials

We employed a forced choice task where participants were asked to choose one single option, the one which sounds more natural to them, out of two options given. The task had 76 items: 24 critical items and 52 fillers.

The critical items involved pairs of sentences containing indefinite nouns modified by two adjectives belonging to two of several categories (Size, Age, Shape, and Color): in one sentence, the order of the two adjectives matched the established AOR, whereas in another sentence, it did not. There were 4 Size Color vs. Color Size pairs (see 8), 4 Age Color vs. Color Age pairs (see 9), 4 Size Shape vs. Shape Size pairs (see 10), 4 Shape Color vs. Color-Shape pairs (see 11), 4 Age-Size vs. Size-Age pairs (see 12), and 4 Age-Shape vs. Shape-Age pairs (see 13). Out of these, the orders Size-Color, Age-Color, Size-Shape, Shape-Color, Size-Age, and Age-Shape observe the General Adjectival Hierarchy, while the orders Color-Size, Color-Age, Shape-Size, Color-Shape, and Age-Size do not.

(8) a. SizeAdj ColorAdj Noun
I have a tiny red house.
b. ColorAdj SizeAdj Noun
I have a red tiny house.

(9) a. AgeAdj ColorAdj Noun
I have an old blue book.
b. ColorAdj AgeAdj Noun
I have a blue old book.

(10) a. SizeAdj ShapeAdj Noun
He has a small round pillow.
b. ShapeAdj SizeAdj Noun
He has a round small pillow.

(11) a. ShapeAdj ColorAdj Noun
I want a triangular brown bag.
b. ColorAdj ShapeAdj Noun
I want a brown triangular bag.

(12) a. SizeAdj AgeAdj Noun
Mary has a big old bed.
b. AgeAdj SizeAdj Noun
Mary has an old big bed.

(13) a. AgeAdj ShapeAdj Noun
He is carrying a timeworn rectangular backpack.
b. ShapeAdj AgeAdj Noun
He is carrying a rectangular timeworn backpack.

We employed one attention check question and 3 types of fillers: (i) 12 (lack of) agreement fillers, where participants were exposed to a singular variant and a plural variant, only one of which was grammatical (see 14); (ii) 15 semantic fillers, where participants were exposed to an atypical adjective-noun combination and a typical adjective-noun combination, one of which was to be preferred on semantic grounds (15);

(iii) 24 ambiguous agreement fillers, where participants saw two variants, both available in the language: one where the verb agreed with a collective noun, and one where the verb agreed with the head noun (see 16).

(14) a. The children are in a good mood.
b. The children is in a good mood.
(15) a. The violent doll belongs to the girl.
b. The blonde doll belongs to the girl.
(16) a. The majority of people have a job.
b. The majority of people has a job.

Since it is not clear whether AORs are grammatical, semantic or pragmatic in nature, we opted to expose participants to fillers which exemplify violations of various types: syntactic – as in (14), semantic – as in (15), as well as fillers which simply exemplify two different preferences, but which do not represent a violation – see 16. This was done in order to prevent the set of fillers from biasing participants.

3.1.4. Results

At the group level, participants' answers were mostly in line with the AOR Size > Age > Shape > Color Noun. The clearest hierarchy-compliant answers were obtained for the orders Size > Color Noun, Size > Shape Noun, and Size > Age Noun (see the raw scores in Table 1). There were 127 answers out of 128 indicating a preference for the Size > Color Noun order as the more natural one, 121 answers out of 128 indicating a preference for the Size > Shape Noun order, and 121 answers out of 128 indicating a preference for the Size > Shape Noun order.

Participants' answers were a little less compliant with the General AOR for the orders Age > Color Noun and Age > Shape Noun (see Table 1). There were 80 answers out of 128 indicating a preference for the Age > Color Noun order as the more natural one, and 78 answers out of 128 indicating a preference for the Age > Shape Noun order.

For Shape Color Noun vs. Color Shape Noun sequences, participants preferred the order Color > Shape Noun over the expected Shape > Color Noun (see Table 1).

Table 1. Number and proportion of expected answers in British English

Adjectival categories	Counts	Expected answers
Age-Color vs. Color-Age	80/128	62.5%
Age-Shape vs. Shape-Age	78/128	60.93%
Shape-Color vs. Color-Shape	57/128	44.53%
Size-Age vs. Age-Size	121/128	94.53%
Size-Shape vs. Shape-Size	121/128	94.53
Size-Color vs. Color-Size	127/128	99.21%
Overall score	584/768	76.06%

We also looked at the data individually (per participant). For each adjectival category combination (Age-Color, Age-Shape, Shape-Color, Size-Age, Size-Color, Size-Shape), 4 items were tested. Consequently, the highest score a participant could obtain for each combination of adjectives was 4. We classified participants into three types: (i) (hierarchy)-compliant, if their score for a category combination was equal to or higher than 3 out of 4, i.e., they gave 3 or 4 answers in line with the expected General AOR, (ii) mixed, if their score was equal to 2 out of 4 (, i.e. 50%), and (iii) non-compliant, if their score was lower than 2 out of 4 (0 or 1). In line with the previous group results, we found that participants seemed to observe the General AOR the most for the combinations Size-Color, Size-Age and Size-Shape, and the least for Shape-Color (see Table 2 for specific numbers, and Figure 4 for a visual representation of proportions of participant types).

Table 2. Counts of participant types per adjectival category combinations in British English

Adjectival categories	Participant types		
	Compliant	Mixed	Non-compliant
Age-Color	16	10	6
Age-Shape	14	12	6
Shape-Color	7	14	11
Size-Age	31	0	1
Size-Color	32	0	0
Size-Shape	31	1	0

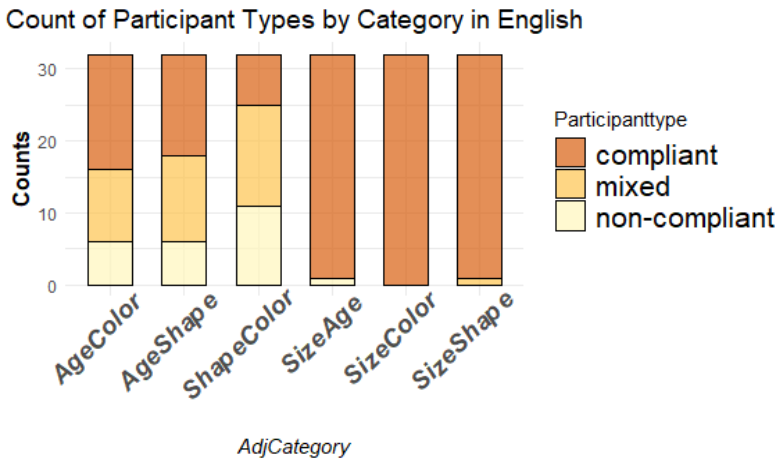


Figure 4. Proportion of participant types by adjectival category in British English

Overall, looking at a participant's mean score over all category combinations, 31 participants out of 32 gave answers in accordance with the general AOR at a rate higher than 50%, and 18 participants of these did so at a rate higher than 75%.

3.2. Experiment in Romanian

3.2.1. Predictions

If Cinque (1994, 2005, 2010) is correct in his claim that Romanian orders adjectives as a mirror of English, then Romanian native speakers should order adjectives according to the mirror hierarchy: Noun Color > Shape> Age > Size. If, on the other hand, Romanian does not employ a hierarchical ordering of adjective categories, as suggested by Cornilescu & Cosma (2019), then participants should allow more flexible orders of adjectives.

3.2.2. Participants

The experiment involved 27 native speakers of Romanian (Age range: 18–22). They answered voluntarily and were contacted online.

3.2.3. Methodology and materials

The design was identical to Experiment 1. The materials for English were translated into Romanian:

(17) a. Noun ColorAdj SizeAdj
Eu am o casă roşie mica.
I have a house red tiny
'I have a tiny red house.'

b. Noun SizeAdj Color Adj
Eu am o casă mica roşie.
I have a house tiny red
'I have a red tiny house.'

(18) a. Noun ColorAdj AgeAdj
Eu am o carte albastră veche.
I have a book blue old
'I have an old blue book.'

b. Noun AgeAdj ColorAdj
Eu am o carte veche albastră.
I have a book old blue
'I have a blue old book.'

(19) a. Noun ShapeAdj SizeAdj
El are o pernă rotunda mică.
he has a pillow round small
'He has a small round pillow.'

b. Noun SizeAdj ShapeAdj
El are o pernă mică rotundă.
he has a pillow small round
'He has a round small pillow.'

(20) a. Noun ColorAdj ShapeAdj
Eu vreau o geantă maro triunghiulară.
I want a bag brown triangular
'I want a triangular brown bag.'

b. Noun ShapeAdj ColorAdj
Eu vreau o geantă triunghiulară maro.
I want a bag triangular brown
'I want a brown triangular bag.'

(21) a. Noun AgeAdj SizeAdj
Maria are un pat vechi mare.
Maria has a bed old big
'Maria has a big old bed.'

b. Noun SizeAdj AgeAdj
Maria are un pat mare vechi
Maria has a bed big old
'Maria has an old big bed.'

(22) a. Noun ShapeAdj AgeAdj
El cară un ghiozdan dreptunghiular învechit.
he carries a backpack rectangular timeworn
'He is carrying a timeworn rectangular backpack.'

b. Noun AgeAdj ShapeAdj
El cară un ghiozdan învechit dreptunghiular.
he carries a backpack timeworn rectangular
'He is carrying a rectangular timeworn backpack.'

3.2.4. Results

For the most part, Romanian speakers' answers were not in line with the mirror AOR Noun Color > Shape > Age > Size (see Table 3). However, participants did give expected answers more than 50% of the time for combinations of Age and Size adjectives and for combinations of Shape and Color adjectives. Nevertheless, these rates were still lower than 75%. For the other adjectival category combinations, the rates of expected answers range between 40–60%. In contrast, in English, the rates are generally higher.

Table 3. Number and proportion of expected answers in Romanian

Adjectival categories	Counts	Expected answers
Age-Color vs. Color-Age	65/120	54.16%
Age-Shape vs. Shape-Age	61/120	50.83%
Shape-Color vs. Color-Shape	76/120	63.33%
Size-Age vs. Age-Size	84/120	70.00%
Size-Shape vs. Shape-Size	54/120	45.00%
Size-Color vs. Color-Size	50/120	41.66%
Overall score	390/720	54.16%

We also looked at the data individually (per participant). We adopted the same classification of participants detailed in 3.1.4: compliant, mixed, and non-compliant participants. As one can see in Table 4 and Figure 5, in Romanian, the number of non-compliant and mixed participants exceeds the number of compliant participants for each adjectival category combination, except for Shape Color. For a clearer comparison with the previous results from British English, the proportion of answers compliant with the General Adjectival Hierarchy have been plotted in the same graph for both British English and Romanian (see Figure 6). The answers in the Romanian experiment reveal more variation in the answers than in the British English experiment.

Overall, looking at individual participants' mean scores over all category combinations, we find that 15 participants out of 27 gave answers in accordance with the general AOR at a rate between 50% and 75%, while 12 consistently gave non-compliant answers at a rate higher than 50%. This provides a clear contrast with the data from British English speakers, where every participant gave compliant answers at a rate equal to or higher than 50% of the time.

Table 4. Counts of participant types per adjectival category combinations in Romanian

Adjectival categories	Participant types		
	Compliant	Mixed	Non-compliant
Age-Color	7	9	11
Age-Shape	9	11	7
Shape-Color	14	9	4
Size-Age	11	10	6
Size-Color	6	9	12
Size-Shape	7	10	10

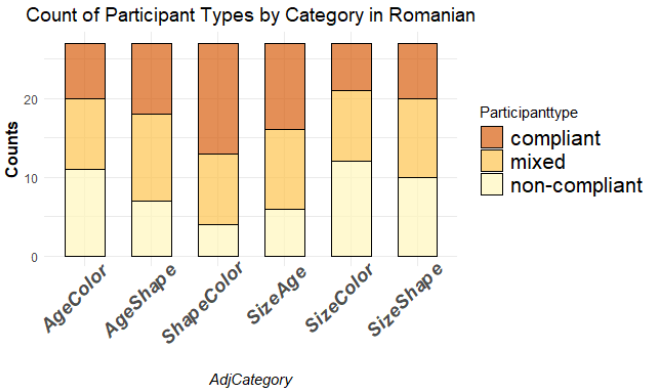


Figure 5. Proportion of participant types by adjectival category in British English

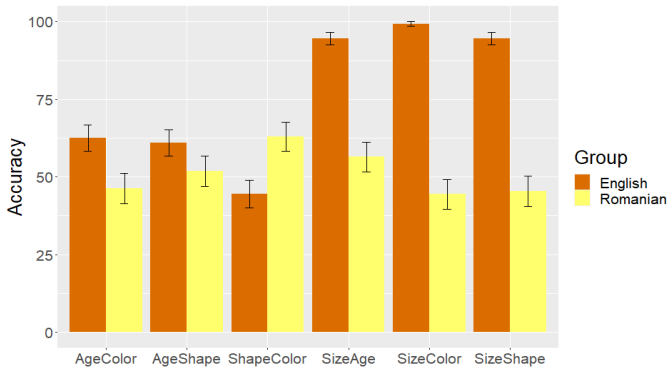


Figure 6. Proportion of answers compliant with the General Adjectival Hierarchy per adjectival category in British English and Romanian

3.2.5 Statistical analysis

We analyzed the results using logit mixed−effects models in R-4.0.5 (2021). We computed a mixed effects model with Answer (coded as 1 if expected, i.e. hierarchy-compliant, and 0 if unexpected, i.e. hierarchy-non-compliant) as a dependent variable (DV), Adjectival category (Age-Color, Age-Shape, Shape-Color, Size-Age, Size-Color, Size-Shape), Language Group (British English, Romanian), and their interaction as fixed effects, and with random slopes per Item and Participant. We found a significant effect for Group (ß = −0.743, SE = 0.303, Z = −2.448, $p < .05$), for the combination Size Age (ß = 2.769, SE = 0.641, Z = 4.320, $p < .01$), Size Color (ß = 4.456, SE = 1.115, Z = 3.996, $p < .01$), Size Shape (ß = 2.491, SE = 0.622, Z = 4.005, $p < .01$), as well as for the interaction between Group and the Size Age combination (ß = −2.281, SE = 0.553, Z = −4.121, $p < .01$), the interaction between Group and the Size Color combination (ß = −4.534, SE = 1.0666, Z = −4.251, $p < .01$), the interaction between Group and the Size Shape combination (ß = −2.532, SE = 0.531, Z = −4.769, $p < .01$), and the interaction between Group and the Shape Color combination (ß = 1.563, SE = 0.397, Z = 3.929, $p < .01$). Overall, our statistical analysis supports the idea of a more flexible, variable ordering of adjectives in Romanian compared to British English, except for the Shape Color combination, where, surprisingly, Romanian speakers seem to be more hierarchy-compliant than British English speakers. In particular, for the combinations Size Age, Size Color and Size Shape, British English speakers are significantly more hierarchy-compliant than Romanian speakers.

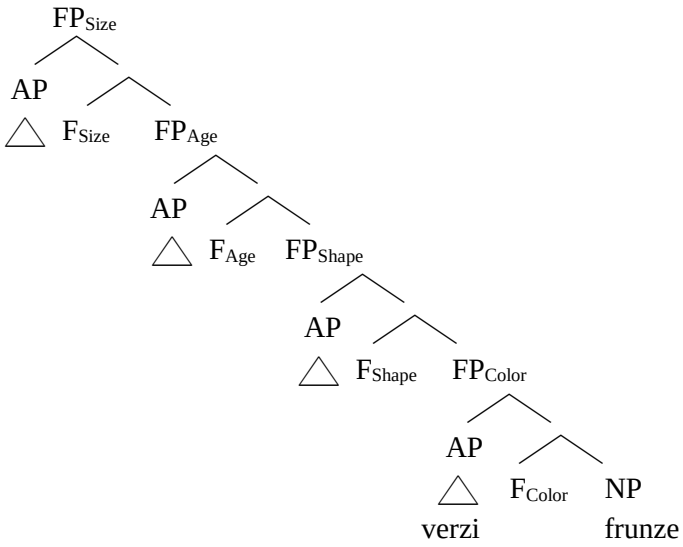
4. Discussion

Our experimental findings suggest that English and Romanian differ in how they order adjectives. English seems to be rule-based in its ordering of adjectives, while in Romanian the ordering is much more variable.

The results from British English are indicative of a hierarchy among adjectival categories, given that participants mostly gave answers in line with the expected order Size > Age > Shape > Color (Dixon 1982, Scott, 2002, Cinque 1994, 2005, 2010, a.o.). Nevertheless, while cartography predicts a fixed order among adjective categories, we found that participants ordered Size > Age, Size > Color, and Size > Shape in compliance with the general AOR to a larger extent than they ordered Age > Color, Age > Shape, and Shape > Color.

These findings could be accounted for by assuming that the adjectives specifying the properties Size, Age, Shape, and Color are syntactically ordered in a cartographic fashion (23), but other factors may have interfered with the participants' answers when these did not observe general hierarchy: length, for instance, or information structure/meaning. Some Shape adjectives (like *triangular* or *rectangular*) tend to be rather long/heavy, which may explain why British English speakers tend to place them at the end of the adjectival sequence (*I want a brown triangular bag*). Some Age adjectives (like *new* or *old*) may be taken to encode additional information about an object, helping to define its kind. If this is the case, then this would explain why British speakers may sometimes place them closer to the noun than expected. The Shape-Color variability may be explained by the closeness of the two categories in the hierarchy, which may lead to less certainty in participants' orders.

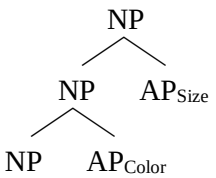
(23)



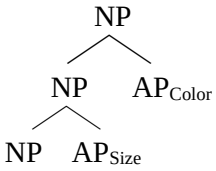
While the results from British English indicate the existence of a hierarchy (with some exceptions), the results from Romanian suggest instead that participants are quite variable in their ordering of adjectives specifying different dimensions. The highest score for expected answers (70%) is much lower than the highest score for expected answers in the English group (99.21%). Interestingly, some speakers seem to observe general AORs more than others, but, despite this, there is still a lot of variability. The percentages in Romanian revolve around the 50% mark, indicating that multiple orders are acceptable:

for instance, Noun > Color > Size, as well as Noun > Size > Color (see 24). These results seem to suggest that there are no strong preferences in Romanian, similarly to Greek (Leivada & Westegaard 2019), where no order was judged as correct or preferable. Furthermore, they are in line with Cornilescu & Cosma (2019)'s corpus analysis, indicating a freer order of adjectives in production.

(24) a.



b.



Overall, our findings undermine the idea of a universal crosslinguistic hierarchy of adjectives. On the one hand, since the ordering of adjectives is more flexible in Romanian and does not represent a mirror order of English, it is more likely that adjectives in Romanian are merged by adjoining rather than Roll-Up. A cartographic order would be too rigid to explain the variance found in the data. On the other hand, our findings represent a challenge for Scontras's theory that subjectivity is important in predicting adjective ordering. Scontras et al. (2017, 2019) argue that, by placing objective adjectives closer to the head, we are more likely to avoid disagreement and transmit useful information. However, if that were the case, adjective order would be universal since these needs are universal. This conclusion is not supported by our data: adjective ordering preferences seem to exist in English, but not in Romanian. A pending question remains: why do some languages have adjective ordering preferences and others do not? A possible answer to this may be related to the existence of an adjective ordering parameter which gets valued differently in different languages: in some languages (like English), adjectives observe a (rather) fixed hierarchy, while in others (like Romanian), they do not, and they occur rather freely. This matter remains to be explored further by means of corpus and experimental methods applied to a variety of languages.

5. Conclusions

To conclude, the paper has provided experimental evidence for a contrast between British English speakers and Romanian speakers in terms of how they order Size, Age, Shape and Color adjectives: while British speakers seem to observe the hierarchy N > Size > Age > Shape > Color overall, Romanian speakers are more variable in their ordering preferences. This casts doubt on the idea of a fixed universal hierarchy of adjectives, as well as on the explanatory power of subjectivity.

Data availability

The data and code associated with the paper are available at https://osf.io/fq5ty.

Ethics and consent

The study has been conducted under approval of the Research Ethics Committee of the University of Bucharest (19/17.02.2022), and consent has been obtained from all participants.

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References

Abels, K. & Neeleman, A. 2010. Linear asymmetries and the LCA. *Syntax* 12 (1): 25-74.

Bleotu, A. C., Foucault, D. & Roeper, T. 2023. The Recursive Set-Subset Ordering Principle orders adjectives and relative clauses in visual context. *Proceedings of the Linguistic Society of America* 8 (1): 5535.

Bleotu, A. C. & Roeper, T. 2021a. *Small big flowers* or *small and big flowers*? Simple is better and Roll-Up is too complex for Romanian 5-year-olds. In D. Dionne & L. A. Vidal Covas, *Proceedings of the 45th annual Boston University Conference on Language Development*, vol. 1, 66-79. Somerville, MA: Cascadilla Press.

Bleotu, A. C. & Roeper, T. 2021b. Roll-Up is too complex for Romanian 5-year-olds. Evidence from recursive adjectives. In *Proceedings of the Linguistic Society of America* 6 (1): 133-143.

Bleotu, A. C. & Roeper, T. 2022a. The Recursive Set-Subset Ordering Restriction overrides Adjective Ordering Restrictions. Evidence from Romanian 4-year-olds and adults. In Y. Gong F. Kpogo (eds), *Proceedings of the 46th Annual Boston University Conference on Language Development*, vol. 1, 62-75. Somerville, MA: Cascadilla Press.

Bleotu, A. C. & Roeper, T. 2022b. Children are more sensitive to the Recursive Set-Subset Ordering than to adjective ordering restrictions. In *Proceedings of the Linguistic Society of America* 7 (1): 5267.

Champollion, L. 2006. A game-theoretic account of adjective ordering restrictions. https://www.lingv.upenn.edu/~champoll/adjective-ordering.pdf.

Cinque, G. 1994. On the evidence for partial N-movement in the Romance DP. In G. Cinque, J. Koster, J.-Y. Pollock, L. Rizzi & R. Zanuttini (eds.), *Paths Towards Universal Grammar. Studies in Honor of Richard S. Kayne*, 85-110. Washington DC: Georgetown University Press.

Cinque, G. 2005. Deriving Greenberg's Universal 20 and its exceptions. *Linguistic Inquiry* 36 (3): 315-332.

Cinque, G. 2010. *The Syntax of Adjectives. A Comparative Study*. Cambridge, MA: MIT Press.

Cornilescu, A. & Cosma, R. 2019. Linearization of attributive adjectives in Romanian. *Revue roumaine de linguistique*, LXIV (3): 307-323.

Cornilescu, A. & Giurgea, I. 2013. The Adjective. In C. Dobrovie-Sorin & I. Giurgea (eds.), *A Reference Grammar of Romanian*, vol. 1, 355-530. Amsterdam/Philadelphia: John Benjamins.

Cornilescu, A. & Nicolae, A. 2016. Romanian adjectives at the syntax–semantics interface. *Acta Linguistica Hungarica* 63 (2): 197-240.

Dixon, R. M. W. 1982. '*Where Have All the Adjectives Gone?' and other Essays in Semantics and Syntax*. Berlin: Mouton de Gruyter.

Dyer, W., Futrell, R., Liu, Z., & Scontras, G. 2020. Predicting cross-linguistic adjective order with information gain. arXiv.org. https://arxiv.org/abs/2012.15263.

Foucault, D., Bleotu, A. C., Lakshmanan, U., Merritt, E., Sybing, R. & Roeper, T. 2022. Relative gradable adjective recursion is more challenging for acquisition than possessive recursion. In *Proceedings of the Linguistic Society of America* 7 (1): 5294.

Franke, M., Scontras, G. & Simonic, M. 2019. Subjectivity-based adjective ordering maximizes communicative success. *Proceedings of the 41st Annual Meeting of the Cognitive Science Society (CogSci 2019). Creativity + Cognition + Computation*, 344-350.

Grohe, L. & Schulz, P. 2022. *Big round clocks* and *blue square tables*: Adjective ordering preferences in elicited child and adult Production. In Y. Gong & F. Kpogo (eds.), *Proceedings of the 46th Annual Boston University Conference on Language Development*, vol. 1, 242-255. Somerville, MA: Cascadilla Press.

Hahn, M., Degen, J., Goodman, N., Jurafsky, D. & Futrell, R. 2018. An information-theoretic explanation of adjective ordering preferences. In *Proceedings of the Fortieth Annual Conference of the Cognitive Science Society. Changing/Minds*, 1776-1771.

Hetzron, R. 1978. On the relative order of adjectives. In H. Seller (ed.), *Language Universals*, 165-184. Tübingen: Narr.

Kotowski, S. & Härtl, H. 2019. How real are adjective order constraints? Multiple pronominal adjectives at the grammatical interfaces. *Linguistics* 57 (2): 395-427.

Kremers, J. M. 2003. *The Arabic Noun Phrase: A Minimalist Perspective*. PhD dissertation, Radboud University, Nijmegen.

Leivada, E. & Westergaard, M. 2019. Universal linguistic hierarchies are not innately wired. Evidence from multiple adjectives. *PeerJ* 7: e7438.

Pérez-Leroux A., Tough, A., Pettibone, E. & Chen, C. 2020. Restrictions on ordering of adjectives in Spanish. *Borealis–An International Journal of Hispanic Linguistics* 9 (1): 181-208.

Rizzi, S., Arnaus Gil, L., Repetto, V., Geveler, J. & Müller, N. 2013. Adjective placement in bilingual Romance-German and Romance-Romance. *Studia Linguistica* 67 (1): 123-147.

Roeper, T. 2011. The acquisition of recursion: How formalism articulates the child's path. *Biolinguistics* 5 (1-2): 57-86.

Scontras, G., Degen, J. & Goodman, N. D. 2017. Subjectivity predicts adjective ordering preferences. *Open Mind* 1 (1): 53-65.

Scontras, G., Degen, J. & Goodman, N. D. 2019. On the grammatical source of adjective ordering preferences. *Semantics and Pragmatics* 12 (7): 1-21.

Scott, G.-J. 2002. Stacked adjectival modification and the structure of nominal phrases. In G. Cinque (ed.), *Functional Structure in the DP and IP*, vol. 1, *The Cartography of Syntactic Structures*, 91-120. Oxford and New York, NY: Oxford University Press.

Smirnova, A., Sanchez, R. R., & Lenarsky, A. 2019. Contextual Determinants of Adjective Order: Beyond Itsy Bitsy Teeny Weeny Yellow Polka Dot Bikini. *Proceedings of the 41st Annual Meeting of the Cognitive Science Society (CogSci 2019). Creativity + Cognition + Computation*, 2825-2831.

Sproat R. & Shih, C. 1991. The cross-linguistic distribution of adjective ordering restrictions. In C. Georgopoulos & R. Ishihara (eds.), *Interdisciplinary Approaches to Language*, 565-593. Dordrecht: Kluwer.

Teodorescu, A. 2006. Adjectives ordering restrictions revised. In D. Baumer, D. Montero, D. & M. Scanlon (eds.), *Proceedings of the 25th West Coast Conference on Formal Linguistics*, 399-407. Somerville, MA: Cascadilla Proceedings Project.

Trainin, N. & Shetreet, E. 2021. *It's a dotted blue big star*: On adjective ordering in a post-nominal language. *Language, Cognition and Neuroscience* 36 (3): 320-341.

ROMANIAN FREE CHOICE FREE RELATIVES: A COMPARISON WITH SUBTRIGGED FREE CHOICE SENTENCES

Mara Panaitescu*

Abstract: The present study focuses on the semantic and pragmatic properties of Romanian free choice free relatives (FC-FRs), with the following conclusions: the quantificational force of FC-FRs in Romanian is definite; the apparent universal force is the outcome of an evaluation constraint of the free choice particle: the syntax of FC-FRs in Romanian is the same as that of English *-ever* FRs; Romanian FC-FRs most closely resemble the semantics and pragmatics of subtrigged free choice determiners. The distribution and interpretation of Romanian FC-FRs is assumed to be of three main kinds: auto-licensing, on a par with subtrigging; licensing by a modal operator in a non-generic/non-habitual context on a par with FCI determiners licensed in the same environments; licensing by a generic or habitual operator (also on a par with determiner FCIs). As shown in Panaitescu (2022), the three types of contexts differ in the type of universality they display: serial universality, parallel universality (the apparent existential reading) and atemporal universality.

Keywords: free choice free relative, subtrigging, definiteness, universality effect, presumptive mood

1. Introduction

English free choice free relatives (FC-FRs) are represented by clauses introduced by *wh*-pronouns with the suffix *ever*, as illustrated in (1a) below. Romanian FC-FRs are clauses introduced by the free choice particle *ori-* plus a relative pronoun such as *what* in (1b) below:

(1) a. John grabbed whatever (dish) was on the breakfast table.
b. Orice scrie are un nucleu emoţional extraordinar,
FC-what writes has a nucleus emotional extraordinary
dialogurile lui au umor, haos, violenţă, isteţime.
dialogues-the his have humor chaos violence wit
'Whatever he writes has an extraordinary emotional core, his dialogues contain humor, chaos, violence, wit.'

The theoretical questions addressed by an examination of the distributional pattern of these constructions in these two languages are mainly:
(i) what is the quantificational force of these clauses (definite or universal)?
(ii) what is the semantic contribution of the free choice particle in this syntactic environment as opposed to, e.g. free choice determiners such as English *any* or Romanian *orice*?

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The two questions are closely linked, since there has been a debate in the literature on free choice determiners regarding their status as either universal or indefinite (LeGrand 1975, Dayal 1998, 2013, Horn 2005, Chierchia 2013). Even though the general direction in the current research seems to be going towards the indefinite side, it is still of interest to answer the question how the universality effects intrinsically associated with free choice arise. On the other hand, with respect to the status of free relatives, it has been argued that they are definite (Jacobson 1995, Caponigro 2003, Tredinnick 2005 a.o.), but also possibly universal, especially those of the FC variety (Bresnan & Grimshaw 1978, Larson 1987, Iatridou & Varlokosta 1998 among others). It seems that free choice in general is what tends to be associated with universality.

Among the tests used for the universal status in the literature previous studies have proposed: paraphrase with a universal quantifier, NPI licensing and *almost* modification. The following sentences are an application of these tests to Romanian:

(2) a. Universal paraphrase for (1b)
Tot ce scrie are un nucleu emoţional extraordinary.
all what writes has a nucleus emotional extraordinary
'All that he writes has an extraordinary emotional core.'

b. NPI licensing
E multă violență în orice a scris vreodată.
is much violence in FC-what has written ever
'There is a lot of violence in whatever he has ever written.'

c. *Almost* modification
E multă violență în aproape orice scrie.
is much violence in almost FC-what writes
'There is a lot of violence in almost whatever he writes.'

For the purpose of answering the two questions, it is useful to look at the pattern of free choice phenomena in Romanian[1], since Romanian FCI *orice* has two syntactic manifestations, as a determiner and as a relative pronoun introducing free relatives.

(3) FCI determiner + restrictive relative clause
Orice roman pe care îl scrie acest autor conţine multă violenţă.
FC-what novel ACC which it writes this author contains much violence
'Any novel that this author writes contains a lot of violence.'

(4) Relative pronoun:

a. Simple *wh*-phrase (without NP):
Orice scrie acest autor conţine multă violenţă.
FC-what writes this author contains much violence
'Whatever this author writes contains a lot of violence.'

b. Complex *wh*-phrase (with NP in FC-FR):
Orice roman scrie acest autor conţine multă violenţă.
FC-what novel writes this author contains much violence
'Whatever novel this author writes contains a lot of violence.'

[1] Among the studies which have focused on Romanian FC-FRs see Grosu (2013) and Caponigro & Fălăuș (2018).

As can be seen in the translation of (4) above, English employs *wh-ever* relative pronouns in order to produce FC-FR structures.

The claim supported here is that, in apparently episodic contexts such as (5) and (6) below, where no licensing operator is present, FCIs require the presence of an event/ situation variable in their restriction.

(5) Maria a citit orice carte pe care i- a recomandat- o
Maria has read FC-what book ACC which to her has recommended it
profesorul
teacher-the
'Mary read any book which the teacher recommended.'

(6) Candidatul a dat un răspuns la orice i s- a reproşat.
candidate-the has given an answer to FC-what to him REFL has reproached.
'The candidate gave an answer to whatever was reproached to him.'

The situations and individuals introduced by the FC description (be it a free choice DP headed by determiner *orice* as in (5) or a free choice free relative as in (6)) satisfy an evaluation constraint of the free choice morpheme, namely domain shift (see Jayez & Tovena 2005). In the case of determiner FCIs, the condition is met by subtrigging (LeGrand 1975). Subtrigging is a saving mechanism observed for free choice *any* in episodic contexts. The addition of a relative clause turns the sentence from unacceptable to perfectly acceptable (as in *The professor talked to any student *(who approached him)*). In the case of free relative uses, the requirement is met by default as long as the event is construed as dynamic, meaning that the event/ situation variable introduced by the relative clause enables the distribution of free choice alternatives.

The flavor of universality particular to subtrigged sentences containing a free choice determiner such as *orice* has been dubbed "serial universality" in Panaitescu (2019, 2022). Taking a sentence such as (5), the semantic contribution of the FC indefinite can be paraphrased as follows: during the past reference interval, in all events of a professor making a recommendation in which there was some instantiation of a book being recommended, Mary read that book. The interaction between reading and recommending events is manifested in two ways (following the terminology in Hinterwimmer 2008): temporal dependence (the recommendations precede the reading) and non-accidentality (there is a non-contingent relation between the pairs of events).

In the same vein, a sentence containing a FC-FR (6) is interpreted in a similar way (following Tredinnick 2005 and Hinterwimmer 2008). There was a past situation made up of possibly multiple subsituations which contain a unique reproach, and this reproach was followed by a response by the candidate. The difference between the indefinite status of the DP containing the head noun *book* in (5) as opposed to the definite status of the head of the free relative in (6) is therefore almost completely neutralized by the universality effect, which is obtained via quantification over situations/ events. As for environments such as (1b) and (4) above, the universality effect arises from two sources, one similar to the mechanism described above, and the second from a covert generic operator on the main verb (*writes*).

2. Previous accounts

2.1 Von Fintel (2000)

Von Fintel discusses three types of examples, (7a), (8a) and (9a), corresponding to three interpretations. The paraphrases in (b) and (c) are meant to capture the definite vs. universal observable quantificational force: ignorance and indifference FC-FRs[2].

(7) Ignorance
  a. There's a lot of garlic in whatever (it is that) Arlo is cooking.
  b. There's a lot of garlic in what Arlo is cooking.
  c. There's a lot of garlic in the dish Arlo is cooking.

(8) Indifference
  a. Zack simply voted for whoever was at the top of the ballot.
  b. Zack simply voted for who was at the top of the ballot.
  c. Zack simply voted for the candidate who was at the top of the ballot.

(9) Universal
  a. There's a lot of violence in whatever Parker writes.
  b. There's a lot of violence in everything Parker writes.

The following analysis is proposed for ignorance interpretations, which is a modification of Dayal (1997) and assumes that FC-FRs are definite expressions whose presuppositional content is richer than that of a regular definite description. The presupposition is assumed to carry the FC semantic constraint of domain shift[3].

(10) Analysis of ignorance
whatever (w) (F) (P)
  a. presupposes: $\exists w', w'' \in F$: $\iota x.\ P(w')(x) \neq \iota x.\ P(w'')(x)$
  b. denotes: $\iota x.\ P(w)(x)$

Above, w is the world of evaluation, F is the modal base (here, epistemic, anchored to the speaker), and P is the expression obtained by abstracting over *whatever* in the free relative (*Arlo is cooking_*). Basically, an FC-FR has the same assertive content as a definite description (e.g. *the dish Arlo is cooking*) but presupposes fluctuation across epistemic worlds, which amounts to the speaker not being sure about the identity of the dish. The property P is required to remain constant.

The analysis of indifference *ever-* free relatives is the following:

(11) Analysis of indifference – conditional
whatever (w) (F) (P) (Q)

[2] The label "universal" in (9) is used for convenience even though von Fintel 2000 does not provide a label for this type of sentence; in later stages of the present article, I will argue in favor of Tredinnick's (2005) label of internal (8) and external (9) indifference.
[3] See also Abenina-Adar (2019) for a presupppositional account of ever-FRs.

a. presupposes: $\forall w' \in \min_w [F \cap \lambda w'.\ \iota x.\ P(w')(x) \neq \iota x.\ (P)(w)(x)]$:
$Q(w')(\iota x.\ P(w')(x)) = Q(w)(\iota x.\ P(w)(x))$
b. asserts: $Q(w)(\iota x.\ P(w)(x))$

Here, *w* is again the world of evaluation, *F* is the modal base (this time circumstantial[4]), *P* is the expression obtained by abstracting over whatever in the free relative (*_was at the top of the ballo*t), and *Q* is the expression obtained by abstracting over the entire free relative in the matrix clause (i.e. *Zack voted for* _). Von Fintel offers the following informal explanation (p.9): "all of the worlds in the modal base F that are minimally different from w but where the referent of the FR is different from that in w are such that the truth of the whole sentence that *whatever* operates on is still the same as in w". Therefore, in this case the matrix property is also present in the presupposition.

Taking (8) as an illustration[5]:

(8') $\lambda w.$ (whoever (w) ((f) (w) (s)) ($\lambda w'.\ \lambda x.$ x is at the top of the ballot in w')
($\lambda w'.\ \lambda x.$ Zack votes for x in w')
a. Assertion: In w, Zack votes for the person at the top of the ballot in w.
b. Presupposition: In all worlds w' minimally different from w in which someone different is at the top of the ballot, Zack votes for that person iff in w he votes for the person at the top of the ballot in w.

The interpretation is counterfactual: if somebody else had been on top of the ballot, Zack would still have voted with them.

As for so-called universal FC-FRs, von Fintel does not provide an analysis, but only mentions Dayal's (1997) solution:

(12) a. People usually honor whoever is elected.
b. $\lambda w.$ usually ($\lambda o.$ o is contextually relevant in w)
($\lambda o.$ people honor whoever (w) (f (o)) (s)) ($\lambda o.\ \lambda x.$ x is elected in o)

2.2 Tredinnick (2005)

In her doctoral dissertation, Tredinnick builds on von Fintel's (2000) analysis. One of the important underlying assumptions in this work is that the so-called "indifference" and "universal" interpretations in (8) and (9) are actually both indifference, the distinction being made by the locus of indifference: internal (the subject, namely Zack in (8)) or external in (9). In the latter, there is no identifiable locus of indifference, and the interpretation is counterfactual. As Tredinnick explains, what is constant across "indifference" FRs is not an indifferent agent, but the counterfactual entailment, as in von Fintel's formal analysis. The modal flavor is the unifying factor.

[4] It is not explicitly stated, but presumably, in the case of indifference, F is a circumstantial modal base.
[5] See Tredinnick (2005), chapter 1, section 1.2.1, for a detailed breakdown of the semantic composition of such examples.

A further observation is that the counterfactual interpretation of both types of indifference imply a causal link[6] between the matrix condition and the FC-FR description: Zack votes for x because he is on top of the ballot, the novels are violent because they were written by Parker. Any context that supplies multiple instantiations of the object described by the FR is considered a generic context (as in *John will read whatever Bill assigns*, which is most naturally interpreted as John reading all of the things Bill assigns)[7].

The ingredients required for the universal interpretation to surface are: indifference (i.e. counterfactual interpretation) and co-variation of situations and individuals due to a covert GEN operator.

2.3 Caponigro & Fălăuș (2018)

The authors assume that FC-FRs in Romanian and Italian have the same syntax as English *ever*- FRs but display semantic and pragmatic properties that more closely resemble headed relative clauses introduced by the free choice determiner *any* in English. Therefore, it is expected that FC-*any* headed relatives (HRs) are acceptable whenever FC-FRs are and are subject to the same kinds of semantic restrictions[8].

A central claim related to the pragmatics is that in episodic contexts, they are felicitous only if they obey the following constraint:

(13) Constraint on acquaintance in episodic sentences
Speakers cannot use a FC-FR (or a FC-any HR) in an episodic sentence if they are "acquainted" with the set that is associated with the FC-FR in the world of evaluation i.e. speakers have had a salient perceptual relationship with all the members of that set knowing that they and only they are members of that set.

Caponigro & Fălăuş (2018) assume that, like English *ever*-FRs, Italian and Romanian FC-FRs also display ignorance and indifference readings. The difference is to be seen in episodic contexts, where the latter are infelicitous if the constraint above is not met. Taking a scenario that elicits an ignorance meaning, Caponigro & Fălăuș (2018) present the following two contexts:

(14) Context: The speaker can see that Bianca is cooking three dishes now. She doesn't know what they are, but saw Bianca pouring tons of garlic powder in each and can smell waves of garlic coming from the kitchen:
(Nu știu ce gătește Bianca, dar după cum miroase...)
not know what cooks Bianca but after how smells
*E usturoi în orice mâncare gătește Bianca acum.
is garlic in FC-what dish cooks Bianca now

[6] More precisely causal explanation as in Kratzer (1997).
[7] In my analysis in section 3.4, I will mention an exception. There are episodic iterated events readings, i.e. sentences containing expressions such as *yesterday, from 3 to 4 o'clock* and perfective aspect. Free choice expressions are allowed as long as the interpretation involves a time-bound regularity.
[8] This is an assumption I subscribe to: the parallel between the distribution of determiner and relative pronoun orice will be presented in more detail in section 3.1.

(15) Context: Luca knows that Bianca always uses garlic for whatever she cooks. Luca is now upstairs and cannot see what Bianca is doing downstairs. Elena comes from downstairs and tells Luca that Bianca is cooking. Luca knows Elena hates garlic, so he warns her:
E usturoi în orice mâncare gătește Bianca acum.
is garlic in FC-what dish cooks Bianca now
'There's garlic in any dish/dishes Bianca is cooking now.'

The difference in acceptability is claimed to stem from the direct acquaintance in (14) vs. the lack of direct acquaintance in (15). A second example is the following:

(16) Poliția a arestat pe oricine a protestat aici în clădirea
police-the has arrested ACC FC-who has protested here in building-the
asta ieri.
this yesterday
'The police arrested anybody who protested here in this building yesterday.'

According to the authors, the sentence is acceptable out of the blue, but adding a context as below renders it unacceptable:

(17) Context: Yesterday, Luca saw four people he did not know protest in the building where he is now. He just heard that those people were all arrested. He says to Bianca. . .

The issue supposedly lies with the fact that the epistemic agent is directly acquainted with the individuals.

The following example is provided by Caponigro & Fălăuș (2017) to show that the constraint on acquaintance is a necessary but not sufficient condition for the felicity of FC-FRs:

(18) Context: The speaker is aware that someone broke into the company last night but doesn't know who:
*A fost oricine avea codul de acces al clădirii (deși nu
has been FC-who had code-the of access of building-the though not
știu cine a fost.
know who has been

The degraded status of (18) stems from a clash between the FC-FR and the QUD (presumably *Who broke in last night?*), which requires identification.

2.4 Šimík (2018)

Šimík (2018) proposes the following classification of English FC-FR interpretations. There are two types of modalized FC-FRs: ignorance (with a subtype

irrelevance) and indifference. Following Lauer (2009) and Condoravdi (2015), Šimík assumes there are also non-modalized FC-FRs.

In the following, the two types of modalized FC-FRs according to Šimík's classification are discussed in more detail. Firstly, the ignorance reading comes with the inference that the Speaker has no settled belief about the identity of the referent of the FC-FR (in this case, the movie):

(19) Whatever movie is now playing at the Avon is making a lot of money.

The sentence is assumed to involve covert modality, and has been interpreted in the literature as involving a doxastic modal base, i.e. the identity of the movie differs across doxastic worlds anchored to the speaker (Dayal 1997, von Fintel 2000). Crucially, many languages (for instance Greek, in Giannakidou & Cheng 2006) have been reported to lack this interpretation altogether.

The second type of interpretation is indifference, of the same kind as discussed in von Fintel (2000):

(20) Zack simply voted for whoever was at the top of the ballot (namely Clinton).

As for third kind, Šimík takes the interpretations dubbed "universal" or "external indifference" to be unmodalized:

(21) In those days, whatever Parker wrote was (always) violent.

This view is in agreement with Lauer (2009). Šimík (2018: 3) explains the reasoning as follows:

> "Lauer (2009) argues that this type of FR carries no conventional modal inference (whether ignorance or indifference) and that it is sufficient if (i) Parker wrote at least two different things in those days […] and (ii) that all the things that he wrote in those days were violent."

An important empirical result worth mentioning is the result of a cross-linguistic survey testing the availability of ignorance vs. indifference and of one instantiation vs. multiple instantiation FC-FRs across languages (where one instantiation involves a unique object referred to by the FC-FR, while multiple instantiations involve co-variation).

Romanian was included among the languages in the survey. Below are three examples of sentences tested for acceptability, with the "*" indicating a low score on a scale of 1 to 5.

(22) *Ieri la ora 8, David s- a uitat la orice era pe HBO.
yesterday at hour 8 D. REFL has watched at FC-what was on HBO
'Yesterday at 8, David was watching whatever they were showing on HBO.'

(23) Diseară la 8, David se va uita la orice va fi pe HBO.
tonight at 8 D. REFL will watch at FC-what will be on HBO
'Tonight at 8, David will be watching whatever (≈ the thing) they will be showing on HBO.'

(24) La cină, David mănâncă întotdeauna ce îi gătește prietena lui.
at dinner D. eats always what to him cooks girlfriend his
'For dinner, David (always) eats whatever his girlfriend cooks for him.'

The punctual past interpretation is excluded (on both ignorance and indifference interpretations), which was also reported for Romanian and Italian in Caponigro & Fălăuș (2018). The results are summarized in the following table (where eFRs are FC-FRs):

Table 1. Median ratings of eFRs per context and language (from Šimik 2018)

Context	Serbian n = 4	Polish n = 5	Hebrew n = 4	Greek n = 6	Russian n = 5	Czech n = 4	Romanian n = 4
habitual present	5.0	5.0	5.0	5.0	4.0	5.0	5.0
simple past	5.0	5.0	5.0	4.0	4.0	4.5	4.5
punctual future	5.0	5.0	4.5	4.5	4.0	4.0	5.0
punctual past	4.5	4.0	3.5	2.0	2.0	2.0	1.0

3. Proposal: How many interpretations?

I propose the following classification of interpretations for Romanian FC-FRs:

(i) Auto-licensed: external indifference
(ii) Licensed by a modal operator (including ignorance)
(iii) Generic atemporal universal

Regarding the first kind of FC-FR, it is taken here to be equivalent to subtrigged sentences such as the one below, employing FC determiner *orice*:

(25) Maria a citit orice carte pe care i- a recomandat -o
Mary has read FC-what book ACC which to her has recommende it
profesorul.
teacher-the
'Mary read any book which the teacher recommended.'

The parallel with determiner free choice expression has been hard to miss in the literature on FC-FRs (e.g. Dayal 1997, Giannakidou 1998, Tredinnick 2005, Caponigro & Fălăuș 2018 among others). This parallel is taken here more seriously than before: there is a wider variety of interpretations available to FC-FRs, which is the result of the semantic contribution of the modal operator which licenses them. The possibility of auto-licensing,

which is available for determiner FCIs only in (dynamic) eventive DPs (subtrigging) is satisfied in the case of FC-FRs almost for free: the only requirement is that the verb in the FC-FR should be eventive.

As for the examples of the second type (licensed by non-generic modal operators), the expectations are that the same modals that license FCI determiners also license the FC-FR. In the example provided below, the licensor is the possibility modal *may*:

(26) Poți citi orice carte dorești.
may read FC-what book wish
'You may read any book you like.'

Notice that the sentence is perfectly acceptable in a scenario in which the speaker requires the addressee to read only one book.

A point of departure from the parallel with determiner FCI *orice* is represented by the Romanian counterpart of ignorance interpretations. Crucially, as has been reported in Caponigro & Fălăuș (2018) and Šimík, R. (2018), the ignorance reading is not available if one simply tries to translate English *ever*-FR equivalents. Take for instance example (47c) in Caponigro & Fălăuş (2018):

(27) *Este usturoi în orice mâncare gătește Bianca acum.
is garlic in FC-what dish cooks Bianca now
Intended: 'There is garlic in whatever dish Bianca is cooking now.'

Nevertheless, changing the mood from indicative to presumptive in the free relative proves to be a saving mechanism.

(28) Orice (mâncare) o fi gătind Mircea conține mult usturoi.
FC-what dish aux be cooking Mircea contains much garlic
'Whatever Mircea may be cooking contains a lot of garlic.'

This strategy is only available for FC-FRs, not for the minimally different FC determiner constructions:

(29) *Orice mâncare pe care o fi gătind -o Mircea conţine mult usturoi.
FC-what dish ACC which AUX be cooking it Mircea contains much garlic.

The examples in (28), with or without a nominal head, are perfectly acceptable, while the example in (29) involving determiner *orice* introducing a DP which contains a relative clause in the presumptive mood (see Fălăuș 2014 on the Romanian presumptive).

3.1 Free choice as an evaluation constraint: A parallel between determiner and relative pronoun uses of Romanian *orice*

In semantics, free choice is a term which targets a very specific linguistic procedure: the step of determining a referent for a DP (see Farkas 2002, 2006, Chierchia 2013). The term "free choice" is not to be understood as a component of the asserted content, but as a component of the evaluation level (more particularly, determining a referent for the DP). Take a free choice item (FCI) such as *any*:

(30) Karen may pick any present.

Here, the contribution of the determiner *any* is to preclude the assignment of a particular referent across the possible worlds introduced by the deontic modal *may* i.e. all presents in the domain are a possible referent for the DP, none is excluded. Compare with *Karen may pick a present, namely the one on the right*. Looking at (30), it also seems that "free choice" is taken literally, at the level of assertion, in this case as Karen's freedom to pick a present. But this is merely an effect of the semantics of the modal of permission *may*. Looking at (31), involving an epistemic modal, and (32), involving an ability modal, the paraphrase involving free choice is lost:

(31) They may have talked to any of the students.
(32) Any third-grader can solve this problem.

What is left is the evaluation constraint to cast all of the entities in the domain which satisfy the nominal properties (the students and the third-graders respectively) as referents of the free choice DPs in some possible world.

Unlike English, Spanish, Italian, etc. and as in Greek, the Romanian FC morpheme *ori-wh* has a double function: as a relative determiner and pronoun introducing free choice free relatives. English employs two different morphemes for the two uses: *any* as FC determiner and *wh-ever* relative pronouns for FC-FR uses. Italian, Spanish and Catalan only retain FC determiners formed with FC + *wh* morphology and simply lack a specialized relative pronoun with FC-FR uses.

The advantage of further looking into the behavior of the Romanian FC elements is that it invites a unified treatment of FC phenomena, one which describes FCIs as both determiners and relative pronouns. The line of reasoning followed here is that the basic observations made in the literature for determiner *orice* should be extendable to the field of FC-FRs. More specifically, the two types of universality proposed for FC determiners are expected to be present in FC-FRs in the same environments. The following sections are dedicated to further exploring this hypothesis.

3.2 Licensing FCIs and subtrigging

FCIs like *any* require to be in the scope of a licensing operator – *may* in (30) and (31), *can* in (32) or GEN in (33).

(33) Any owl hunts mice.

An apparent exception is the episodic environment called *subtrigging*, a DP which contains an FCI and a relative clause:

(34) a. ?? Yesterday we spoke to any customer.
b. Yesterday we spoke to any customer who required assistance.

As already mentioned, Romanian[9] has a lexeme which doubles as an FC determiner and an FC relative pronoun introducing free choice free relatives. Both constructions allow for an interpretation in which: (i) there are two event descriptions; (ii) the events-individual pairs denoted by the FC constructions involve multiple instantiations; (iii) the connection between the two events is perceived as being non-accidental. In one word, both constructions display "subtrigging".

(35) a. Orice persoană care a trișat a fost eliminată din concurs.
FC-what person which has cheated has been eliminated from contest
'Any person who cheated was eliminated from the contest.'
b. Oricine a trișat a fost eliminat din concurs.
FC-who has cheated has been eliminated from contest
'Whoever cheated was eliminated from the contest.'

These types of sentences are exclusively interpreted as universals, even though they are here not assumed to be in any sense generic:

(36) Ne- a pus la dispozitie orice am cerut.
to us has put at disposal FC-what have asked
'He/she placed at our disposal almost anything we asked for.'

One test to prove this is modification by *almost*: Jacobson's (1995) example (37a) is perfectly acceptable in Romanian (37b):

(37) a. *For years, I did almost/ nearly whatever you told me to do.
b. Ani de zile, am facut aproape orice mi- ai spus să fac
years of days have done almost FC-what to me have told SBJV do
'For years, I have done almost anything you told me to do.'
(38) Ne-a pus la dispoziție aproape orice am cerut.
to us has put at disposal almost FC-what have asked
'He/she placed at our disposal almost anything we asked for.'

[9] On a par with Spanish, Catalan, French, Greek a.o. (see Chierchia 2013, etc.).

Another test is paraphrasing by using a universal quantifier. This is possible for the sentence above: *S/he provided all of the things we asked* (and if we had asked for other things, s/he would have provided those as well). Example (38) is an apparently unmodalized episodic context, associated with a short time span (this can be enforced by adding *for the duration of our visit*). According to Tredinnick (2005), such cases do involve some sort of genericity, with the generic operator quantifying over subparts of the episode:

(39) Yesterday morning, John grabbed whatever dish was on the breakfast table.
  a. 'Yesterday morning, John grabbed **the dish** that was on the breakfast table.'
  b. 'Yesterday morning, John grabbed **every dish** that was on the breakfast table.'

The paraphrase in (39b) involves one layer of genericity:

(40) λs_0. $\exists$s[s is past with respect to s_0 & GENs'$\leq$s [C(j, s')] [grab (j, [whatever dish was on the breakfast table in s'], s')]]

In words, (40) says that there is a situation *s* in the past and every one of its subsituations of the appropriate type containing John (introduced by the contextual parameter C) is a situation in which John grabs whatever dish is on the table.

(41) In those days, every morning, John grabbed whatever dish was on the breakfast table.
  a. 'In those days, every morning, John grabbed **the dish** that was on the breakfast table.'
  b. 'In those days, every morning, John grabbed **every dish** that was on the breakfast table.'

Reading (41b) involves two layers of genericity, one habitual, introduced by *in those days*, and another one operating on partitions of the habitual situations (subsituations of mornings). The question which remains to be answered is why for Romanian *ori-* FRs do not display the reading in (39a) and seem to accommodate a reading such as (39b) only under certain conditions, while (40b) is easily available. In section 3.4 I will extend the analysis in Panaitescu (2022) and propose that subtrigged cases such as (39b) are actually non-generic and rather involve an (iterated/ co-varying) interpretation against a metaphysical modal base. Informally, these sentences express a time-bound regularity.

3.3 Free choice free relatives (FC-FRs) in English and Romanian: Distribution and properties

As mentioned in the introduction to section 3 above, FC-FRs in Romanian are assumed in the present paper to come in three guises as far as their interpretation is

concerned: they may be auto-licensed, in which case they express a time-bound regularity, or they may be licensed by some compatible (non-)generic modal operator.

The second case displays a nice parallel to the behavior of determiner FCI *orice*. The determiner *orice* + relative clause and the FC-FR produce the same interpretations. I only mention a few examples, but the same contexts that were listed for the determiner FCI in Panaitescu (2022) are available here too.

(42) Permission modal
a. O poţi lua pe oricare doreşti.
it may take ACC FC-which wish
'You may take whichever you like.'
b. Oricine vine la petrecere poate dansa.
FC-who comes to party may dance
'Whoever comes to the party may dance.'

In (42a), the D-linked FC-FR induces an interpretation in which one thing is taken, while (42b) most naturally means that one or more people can dance. The same ambiguity that exists for determiner uses is present.

(43) Ability
Oricine a fost la curs poate rezolva problema.
FC-who has been at lecture may solve problem-the
'Whoever attended the lecture can solve this problem.'

(44) Generic
Orice rău faci se întoarce împotriva ta.
FC-who harm do REFL turns against you
'Whatever harm you do turns against you.'

Here, just as in the case of determiner uses, the type of universality is atemporal.

A very intriguing case of non-generic licensing mechanism is represented by ignorance interpretations licensed by the presumptive mood. The construction is interesting for two reasons. Firstly, the licensor in this case is not to be found in the matrix clause but in the relative clause. Secondly, this kind of construction is possibly the best testing ground for definiteness. On a par with regular free relatives (*What Arlo is cooking contains a lot of garlic*), FC-FRs have been argued to be definites which can be paraphrased as *the thing/person/place that*. This carries over to the Romanian examples. The interpretation obligatorily involves a unique event of cooking.

(45) a. English
Whatever Arlo is cooking contains a lot of garlic.
b. Romanian
Orice (mâncare) o fi/ va fi gătind Arlo acum conţine
FC-what dish AUX be/AUX be cooking Arlo now contains
mult usturoi.
much garlic
'Whatever (dish) Arlo is cooking now contains a lot of garlic.'

Taking a context in which I do not know what he is cooking, but I can smell the garlic, the interpretation involves epistemic uncertainty on the part of the speaker. The FC-FR is definite and carries a presupposition of existence (it is presupposed that there exists something that Arlo is cooking). The FC-FR is interpreted against an epistemic modal base at the level of presupposition (von Fintel 2000). The relevant set of worlds contains epistemic variants of the actual world, from the point of view of an epistemic agent.

These worlds are minimally different from each other, varying only with respect to the identity of the individual satisfying the FR condition (the thing Arlo is cooking). The assertion is that, in each world, the unique thing Arlo is cooking satisfies the main clause condition, namely it contains a lot of garlic. Therefore, putting the assertion and presupposition together, the ignorance effect becomes evident: Arlo is cooking something (I do not know what) and, whether it is stew, tomato soup, etc., it contains a lot of garlic. Romanian FC-FRs are felicitous on this reading only if the verb in the FC-FR is in the presumptive mood, which is arguably responsible for the epistemic flavor.

3.4 A possible account

The fact that the same interpretation as (39b), but not (39a) arises for free choice determiners *orice* and *any* in subtrigged sentences suggests the existence of certain common factors in the semantics of these FC pronouns and determiners, while still maintaining the distinction which emerges from their syntax. An example of a subtrigged sentence containing an FC determiner is (46):

(46) Maria a citit orice carte pe care i- a recomandat -o
Mary has read FC-what book ACC which to her has recommended it
profesorul.
teacher-the
'Mary read any book which the teacher recommended.'

Subtrigged sentences were analyzed in Panaitescu (2022) as involving what was called "serial universality". Serial universality involves a form of covert modality that is distinct from genericity. What (46) conveys is that during the reference interval, there was a regular pattern in the sense that whenever some book or other was recommended, it necessarily was also read by Mary. There is variation of individuals based on the entity variable introduced by the DP, but also times and worlds. This kind of variation was modeled following the time-world framework of Thomason (1984). The modal base is circumstantial (metaphysical). Serial universality is a type of universality effect in apparently episodic sentences that do not actually involve genericity. Genericity is **not** sensitive to the temporal ordering of situations, as assumed by Tredinnick (2005).

On the contrary, I have tried to show that both subtrigged *orice* and indifference FC-FRs obey certain temporal and aspectual constraints and will opt for the presence of an underlying conditional structure in these apparently episodic environments, in the spirit of Iatridou & Varlokosta (1998) and Baker (1995).

The following informal interpretation of FCI *orice* displaying a time-bound regularity was offered in Panaitescu (2022) for example (47). Notice that the free choice

determiner does not require a relative clause as long as the nominal it introduces is eventive, and the relation to the matrix clause event is not accidental.

(47) După prezentare, Ion a răspuns bucuros la orice întrebare.
after presentation Ion has answered gladly to FC-what question
'After the talk, John gladly answered any question.'

a. After the talk, John gladly answered any question.
b. Serial universality:
w_1: question *a* asked & answered; question *c* asked & answered; no other question asked;
w_2: question *a* asked & answered; no other question asked;
w_3: question *a* asked & answered; question *b* asked & answered; no other question asked;
w_4: question *b* asked & answered; ; no other question asked

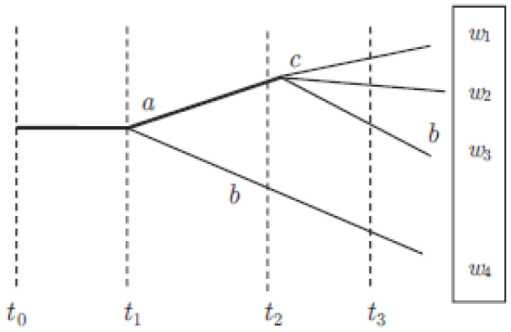

Figure 1: Serial universality in example (47)

Non-accidentality here is understood as a relation of causal explanation between the events in the free choice DP (the questions) and the matrix events (the answers). The visual representation in Figure 1 above expresses the fact that, in the relevant time interval (here, $[t_0,t_3]$) a regularity was instantiated in the form of questions leading to answers. The toy model presented here contains four worlds, out of which one turned out to be the actual world. The other three are unactualizaed ways the world might have evolved (branched) out of t_0. Crucially, the questions asked must differ on these branches (with overlaps allowed; for instance, question a was asked in w_1, w_2 and w_3). It is important to point out that expressing epistemic possibility is compatible with such scenarios. It is possible to find examples of subtrigged sentences where the epistemic agent is not aware of the individuals actually involved in the causal relation between the FC and the matrix events. But it is also possible that there is no epistemic uncertainty about the actual turn of events whatsoever. For instance, if we take w_3 to be the way the actual world developed, then (47) is perfectly acceptable in a setting in which everybody is aware that questions a and b were asked (and answered), i.e. there is no epistemic

uncertainty. Of course, uttering (47) also conveys something about unrealized potentials (e.g. the asking of question c).

The same reasoning arguably applies to all FC-FRs without an obvious overt or covert (e.g. GEN or HAB) licensor, such as (48) below:

(48) După prezentare, Ion a răspuns bucuros la orice întrebare i
after presentation Ion has answered gladly to FC-what question to him
s- a pus.
REFL has put
'After the talk, John gladly answered whatever question he was asked.'

These cases were subsumed to cases of subtrigged determiner FCIs *any* and *orice* in Panaitescu (2022). The following section discusses certain examples presented in the literature of FC-FRs from the perspective of the account presented here.

3.5 Application to examples

Extending work on English *-ever* FRs to other languages, many authors have discovered that ignorance and indifference are unavailable in many cases. Looking at the results provided by the survey in Šimík (2018) in Table 1, one can notice that sentences containing FC-FRs and punctual past (i.e. forcing a unique event interpretation) have very low scores in Greek, Russian, Czech and Romanian. These judgments apply irrespective of the ignorance/indifference interpretation prompted by the context. Based on the judgments provided in Caponigro & Fălăuș (2018), Italian can also be added to the list. The authors also stress that this observation holds only for past/present episodic sentences with a punctual interpretation. This pattern is indeed to be observed for determiner FCIs as well: only in the absence of a licensor is domain shift (co-variation of event-individual pairs) a requirement. If a modal licensor is present, the restriction against punctual interpretations is lost:

(49) Poate fi în orice cameră a fost deja curățată.
may be in FC-what room has been already cleaned
'S/he may be in whichever room has already been cleaned.'

In (49) above, the epistemic possibility modal counts as a licensor for the FC-FR and corresponds to an interpretation of parallel universality (Panaitescu 2019, 2022). The subject is in one room, but the identity of this room varies across the worlds in the epistemic modal base.

Going back to cases that have been called auto-licensing here, it has been argued throughout the paper that epistemic uncertainty is in no way a necessary ingredient in their acceptability. If one were to accept the Constraint on Acquaintance formulated in Caponigro & Fălăuș (2018), it would also be left unexplained why there is a ban against punctual interpretations.

Still, two kinds of examples provided in Caponigro & Fălăuș (2018) seem to go against these observations. I will discuss them in turn. Firstly, it is claimed that if the

speaker does not have any direct acquaintance with the dish(es) in question, a sentence containing an FC-FR and a presumably punctual ignorance interpretation becomes available (see the contrast between the contexts in (15) and (16) above):

(50) E usturoi în orice mâncare gătește Bianca acum.
is garlic in FC-what dish cooks Bianca now
'There's garlic in any dish/dishes Bianca is cooking now.'

A first observation is that the translation provided by the authors (with determiner any plus a restrictive relative clause) does not seem to be perfectly acceptable. Following my own judgments, the Romanian counterpart does not fare much better, no matter whether one chooses a context with or without direct acquaintance:

(51) ??E usturoi în orice mâncare pe care o gătește Bianca acum.
is garlic in FC-what dish ACC which it cooks Bianca now
'There's garlic in any dish/dishes Bianca is cooking now.'

As for (50), the presumptive is I believe equally required no matter the context (an option that the determiner version of *orice* does not have). In any case, it would remain to be explained why there is a contrast between determiner and relative pronoun *orice*, assuming that the Constraint on Acquaintance operates on both constructions equally.

A second example discussed by the authors and presented in section 2.3, is repeated below:

(52) Poliția a arestat pe oricine a protestat aici în clădirea asta
police-the has arrested ACC FC-who has protested here in building-the this
ieri.
yesterday
'The police arrested anybody who protested here in this building yesterday.'

According to the authors, the sentence becomes infelicitous in a scenario where the speaker has seen the people in question. From the perspective of the account presented here, the interpretation aimed for here is an auto-licensing one. The intended meaning is: in the relevant past interval, the police operated under the rule that, if someone protested, they would arrest them. A number of people happened to fall victim to this rule, but if other people had protested, they would also have got arrested. This meaning can be conveyed irrespective of what the epistemic agent has witnessed. Forcing the context (16) does not alter the felicity of the sentence but merely creates the impression that it is somehow inappropriate to discuss time-bound regularities when the question under discussion is *Who protested?*.

4. Conclusions

DPs headed by *orice* are indefinite and FC-FRs containing *orice* are definite. Both guises of *orice* come with an evaluation constraint which translates as a causal link

between two events. Romanian free choice item *orice* in its guise as a determiner (in which case the DP it is part of is an indefinite) and as a relative pronoun introducing FC-FRs (in which case it is definite) has been shown to display three sources of licensing: generic modal licensors, non-generic modal licensors and auto-licensing. The three types of licensors correspond to three types of universality effects: atemporal, parallel and serial respectively (as defined in Panaitescu 2019, 2022). Due to these universality effects, the definiteness of the relative pronoun is most of the times disguised by Quantificational Variability Effects patterns.

Thus, in the absence of FC licensing operators, (apparently) non-modalized episodic sentences with determiner and FR uses involve serial universality. The modal flavor of these contexts is counterfactual, and the FC and matrix events are temporally ordered. In order to best describe the phenomenon, I claimed in Panaitescu (2022) that the time-worlds branching universe account assumed for determiner *orice* applies to Romanian FC-FRs as well.

The account sketched so far might create the impression that determiner and relative pronoun *orice* are identical in distribution and interpretation. That is definitely not the case, a case in point being the availability of the presumptive mood acting as a licensor from inside the FC-FR, but not from inside a restrictive relative clause. Another point of divergence could be the definite vs. indefinite status of FC-FRs and free choice DPs containing determiner *orice* respectively. Yet another possible distinction in the semantics of the two constructions is the possible analysis of FC-FRs as unconditionals, a route which was taken in Šimík (2018) and Szabolcsi (2019) building on Rawlins (2013). This avenue is left open for further research.

References

Abenina-Adar, M. 2019. Know whether and -ever free relative clauses. *Semantics and Pragmatics* 12: 19-65.

Baker, C.L. 1995. *English Syntax*. 2nd edition. Cambridge, MA: MIT Press.

Balusu, R. 2017. Free Choice Relatives in Telugu. In V. Hohaus & W. Rothe (eds.), *Proceedings of TripleA 3: Fieldwork Perspectives on the Semantics of African, Asian and Austronesian Languages*, 70-84. https://publikationen.uni-tuebingen.de/xmlui/handle/10900/73437.

Bresnan, J. & Grimshaw, J. 1978. The syntax of free relatives in English. *Linguistic Inquiry* 9: 331-391.

Caponigro, I. 2003. Free not to Ask: On the Semantics of Free Relatives and *Wh*-Words Cross-Linguistically. PhD dissertation, University of California.

Caponigro, I. & Fălăuş, A. 2018. Free choice free relative clauses in Italian and Romanian. *Natural Language and Linguistic Theory* 36 (2): 323-363.

Caponigro, I., Torrence, H., & Cisneros, C. 2013. Free relative clauses in two Mixtec Languages. *International Journal of American Linguistics* 79 (1): 61-96.

Chierchia, G. 2013. Free Choice Nominals and Free Choice Disjunction: The Identity Thesis. In A. Fălăuş (ed.), *Alternatives in Semantics*, 5-87. London: Palgrave Macmillan.

Citko, B. 2010. On the Distribution of *-kolwiek* 'ever' in Polish free relatives. *Journal of Slavic Linguistics* 18 (2): 221-258.

Condoravdi, C. 2002. Temporal interpretation of modals: Modals for the present and for the past. In D. I. Beaver, L. D. C. Martınez, B. Z. Clark & S. Kaufmann (eds.), *The Construction of Meaning*, 59-88. Stanford, CA: CSLI Publications.

Condoravdi, C. 2015). Ignorance, indifference, and individuation with wh-ever. In L. Alonso-Ovalle & P. Menéndez-Benito (eds.), Epistemic Indefinites: Exploring Modality Beyond the Verbal Domain, 212-243. Oxford: Oxford University Press.

Dayal, V. 1997. Free relatives and "ever": Identity and free choice readings. In A. Lawson (ed.), *Proceedings of the 7th Semantics and Linguistic Theory Conference, held March 21-23, 1997, at Stanford University*, 99-116. Ithaca, NY: Cornell University, CLC Publications

Farkas, D. 2002. Varieties of indefinites. In B. Jackson (ed.), *Proceedings of the 12th Semantics and Linguistic Theory Conference, held March 8-10, 2002 at the University of California, San Diego, and San Diego State University*, 59-83. Ithaca, NY: Cornell University, CLC Publications.

Farkas, D. 2006 Free choice in Romanian. In B. J. Birner & G. Ward (eds.), *Drawing the Boundaries of Meaning, Neo-Gricean Studies in Pragmatics and Semantics in Honor of Laurence R. Horn*, 71-94. Amsterdam/Philadelphia: John Benjamins. 71-94.

Farkas, D. 2015. Dependent indefinites revisited. Workshop on Distributivity, 26–27 February 2015, Laboratoire Structures Formelles du Langage, Paris.

Fălăuș, A. 2014.. *Borealis: An International Journal of Hispanic Linguistics* 3 (2): 105-124.

von Fintel, K. 2000. Whatever. In B. Jackson & T. Matthews (eds.), *Proceedings of the 10th Semantics and Linguistic Theory Conference, held June 2-4, 2000 at Cornell University*, 27-40. Ithaca, NY: Cornell University, CLC Publications.

Giannakidou, A. 1998. *Polarity Sensitivity as (Non-)Veridical Dependency*. Amsterdam/Philadelphia: John Benjamins.

Giannakidou, A. & Lisa L.S. Cheng. 2006. (In)Definiteness, polarity, and the role of *wh*-morphology in free choice. *Journal of Semantics* 23: 135-183.

Grosu, A. 2013. Relative clause constructions and unbounded dependencies. In C. Dobrovie-Sorin & I. Giurgea (eds.), *A Reference Grammar of Romanian*, 597-662. Amsterdam/Philadelphiua: John Benjamins.

Grosu, A. & Landman, F. 1998. Strange relatives of the third kind. *Natural Language Semantics* 6 (2): 125-170.

Hacquard, V. 2010. On the event relativity of modal auxiliaries. *Natural Language Semantics* 18 (1): 79-114.

Hinterwimmer, S. 2008. *Q-Adverbs as Selective Binders: The Quantificational Variability of Free Relatives and Definite DPs*. Berlin/New York: Mouton de Gruyter.

Horn, L. 2000. *any* and (-)*ever:* Free choice and free relatives. In A. Z. Wyner (ed.), *Proceedings of the Fifteenth Annual Conference of the Israeli Association for Theoretical Linguistics*, 71-111. Haifa: University of Haifa.

Iatridou, S. & Varlokosta, S. 1998. Pseudoclefts cross-linguistically. *Natural Language Semantics* 6 (1): 3-28.

Jacobson, P. 1995. On the quantificational force of English free relatives. In E. Bach, E. Jelinek, A. Kratzer & B. Partee (eds.), *Quantification in Natural Languages*, 451-486. Dordrecht: Springer.

Jayez, J. & Tovena, L. 2005. Free-choiceness and Non Individuation. *Linguistics and Philosophy* 28 (1): 1-71.

Kratzer, A. 1997. Scope or pseudo-scope? Are there wide scope indefinites?. https://www.semanticsarchive.net/Archive/DFjNjM5M/Scope.or.Pseudoscope.pdf

von Kutschera, F. 1993. Causation. *Journal of Philosophical Logic* 22 (6): 563-588.

Larson, R. 1987. 'Missing prepositions' and the analysis of English relative clauses. *Linguistic Inquiry* 18 (2): 239-266.

Lauer, S. 2009. Free relatives with *-ever*: Meaning and use. Qualifying paper, Stanford University.

LeGrand, J. E. 1975. 'Or' and 'any': The Syntax and Semantics of Two Logical Operators. PhD dissertation, University of Chicago.

Panaitescu, M. 2019. Two types of free choice universality across languages. *Acta Linguistica Academica* 65 (4): 669-701.

Panaitescu, M. 2022. *The Semantics of Romanian Universal Free Choice Item Orice*. Bucharest: Editura Universităţii din Bucureşti.

Rawlins, K. 2013. (Un)conditionals. *Natural Language Semantics* 21 (2): 111-178.

Šimík, R. 2018. Ever free relatives crosslinguistically. In U. Sauerland & S. Solt (eds.), *Sinn und Bedeutung 22*. https://semanticsarchive.net/sub2018/Simik.pdf.

Szabolcsi, A. 2019. Unconditionals and free choice unified. In K. Blake, F. Davis, K. Lamp & J. Rhyne (eds.), *Proceedings of the 29th Semantics and Linguistic Theory Conference, held at the University of California, Los Angeles May 17-19, 2019*, 320-340: Ithaca, NY: Cornell University, CLC Publications.

Thomason, R. 1984. Combinations of tense and modality. In D. M. Gabbay & F. Guenthner (eds.), *Handbook of Philosophical Logic: Extensions of Classical Logic*, vol. II, 136-165. Dordrecht: Reidel

Tredinnick, V. A. 2005. On the Semantics of Free Relatives with *-ever.* PhD dissertation, University of Pennsylvania.

Guglielmo Cinque. 2020. *The Syntax of Relative Clauses: A Unified Approach*. Cambridge: Cambridge University Press. 414 pp.

Reviewed by Deborah Foucault*

Guglielmo Cinque's monograph, *The Syntax of Relative Clauses: A Unified Analysis*, is a comprehensive examination of the structures of relative clause (RC) across languages, with the goal of elucidating the underlying foundation of all RCs through a unified analysis. His main proposal is that double-headed structures with an external head in the main clause and an internal head in the RC is the base structure for all RCs.

Cinque's detailed book is a valuable resource for both graduate linguists and experts in the field. He achieves this difficult undertaking by strategically weaving both cross-linguistic experimental and theoretical research to form the basis of the manuscript. That is, his strategic methodology is to demonstrate the applicability of his unified analysis through a multitude of RC structure examples. This is the meat of the text rather than solely focusing on detailed theoretical underpinnings that would leave many readers behind. None the less, Cinque does lay out some of the core theoretical issues in the beginning of the book (Introduction, Chapters 1-2) and the appendix to frame his argument, which may help novice linguists form a general understanding of the rationale behind his analysis. Additionally, seasoned linguists who are more familiar with the nuanced theoretical presuppositions can consider these as they ponder on the numerous examples. Both ends of the spectrum will have plenty to think about and can decide for themselves which area they may want to further research. Importantly, while Cinque's book focuses on uncovering the underlying base structure for all RCs, it is an excellent example at considering universal linguistic principles cross-linguistically that will provide linguistics with a deeper understanding of syntactic methods. Even those less familiar with research on relative clauses will benefit from the numerous examples as well as the rich appendix at the end that can be used to quickly reference RC types, various languages, and the many syntactic elements.

Throughout, various syntactic operations are employed skillfully for a unified analysis by Cinque: movement, deletion, pro-forms, matching, and raising in particular are all used to derive the different RC types that serve the intended semantics and the specific language properties / linear expression. Adding to the book's strength is the inclusion of diverse languages from fellow researchers. A key thread throughout the book's tapestry is Cinque's use of the Uniformity Principle that he uses to challenge Chomsky's copy theory of movement.

While a reviewer could note possible overgeneralizations, Cinque's work is inspiring in its ability to stimulate further research and debate within the linguistic community. Researchers interested in relative clauses, syntactic theory, and cross-linguistic typology should engage with Cinque's analysis, either to refine it further or to apply similar approaches to other syntactic phenomena. The book is a touchstone for discussions on universals and variation in syntax, and it will surely influence subsequent research in the field.

The book is organized as follows.

In Chapter 1, "Basis of the analysis" (pp. 4-19), Cinque challenges Kayne's claim that modifiers on the right of a head in head-initial languages always originate elsewhere. The chapter establishes the groundwork for postnominal base generation of RCs, challenging more conventional analyses.

Chapter 2, "Restrictive and maximalizing RCs" (pp. 20-142), focuses on different RC types, proposing that these structures derive from a single double-headed structure through

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operations like movement, deletion, and pro-form replacement. Raising and matching are introduced as distinct operations, with examples from various languages illustrating their differences.

Chapter 3, "Representation of various RC types" (pp. 143-241), expands the unified analysis to cover finite non-restrictive, infinitival, and participial RCs in languages like Italian, English, Bulgarian, German, and French. The chapter explores word and RC order variations in different languages, linking them to the proposed unified structure.

Chapter 4, "Realization of the Internal Head Parameter" (pp. 242-255), discusses the ways the internal head is realized, including the use of relativizers, relative pronouns, or adjectives. Cinque examines the techniques based on the size of external and internal heads, emphasizing the connection to the unified analysis.

Chapter 5, "Puzzling structures" (pp. 256-280), addresses peculiar structures by integrating insights from the unified analysis developed in the previous chapters. Here Cinque examines specific linguistic phenomena from various languages, offering a coherent explanation within the proposed framework.

In conclusion, Guglielmo Cinque's *The Syntax of Relative Clauses: A Unified Analysis* stands as an important contribution to the study of generative syntax. He builds on his previous research on Germanic and Romance languages by reviewing a comprehensive amount of cross-linguistic data gathered by other researchers. To be an expert in every language is not possible, and as such his methodology for relying on linguistic research by other researchers to explore a unified foundation for RCs is admirable and a fine example of the scientific enterprise. The examples utilized throughout the book, however, are mainly from Cinque's Germanic and Romance language research. As such, his methodology for weaving together cross-linguistic experimental and theoretical elements could be bolstered by extending the examples to RCs in many other languages. But perhaps this is too much to ask for such a great undertaking, which alone marks the work as a landmark in the field. Novice linguists should remember that many of the deeper theoretical assumptions are not discussed in the book and read the text with this in mind to avoid oversimplifications and to think carefully about presuppositions behind the analyses. This is more of a helpful reminder since readers may easily be swept up in Cinque's unified analysis that makes derivation of RCs look easy. However, Cinque is the linguistic ballerina who makes syntactic pirouettes look effortless.

The analysis's success lies in its ability to accommodate a broad range of RC structures, making it a valuable resource for researchers interested in Cartographic Generative approaches to syntax. Furthermore, the book's methodology includes an extensive literature review and cross-linguistic analysis. The manuscript provides linguists with material to explore and expand upon for many years to come, not only on the study of relative clauses but of syntactic universals. The book's enduring contributions lie in its analysis and in paving the way for future research and refinement of the proposed unified structure. This work will continue to shape and inspire research in generative syntax for many years to come.

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