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Valency coercion in Italian

An exploratory study*

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The paper investigates valency coercion effects in Italian by means of an acceptability rating task on nine argument structure constructions. The experimental design follows Perek & Hilpert (2014) in presenting three conditions: grammatical, impossible and coercion stimuli. This design allows us to test several factors: the acceptability of creative coerced structures, the role of age and – most importantly – the influence of the construction itself. Results overall confirm our hypotheses: valency coercion is identified as an intermediate level between grammaticality and ungrammaticality, with varying degrees of “coercibility” across constructions. An influence of age is not in evidence for coercion sentences, suggesting that the systematic variation in acceptability is due to the influence of different constructions. We propose that coercion resolution results from the interaction of constructional and lexical semantics.

Keywords: coercion, argument structure constructions, Italian, acceptability ratings, age grading

1. Introduction

This study investigates coercion effects in Italian argument structure, and has a twofold aim: (i) to provide a first insight into how Italian argument structure constructions and verbs interact with one another, and (ii) to contribute to the cross-linguistic debate on the nature of constructions and their interplay with verbal semantics. The phenomenon of coercion has received considerable attention in the literature and has been defined as a semantic mismatch between a construction and a lexical item occurring in it. This resolution of incompatibility

* LB was responsible for data collection, analysis, and drafting of the present paper. AL supervised stimuli choice, experiment design, and contributed to the writing. FP contributed to statistical analyses and writing.

between a lexical and a constructional meaning has been particularly addressed in the theoretical framework of Construction Grammar (Goldberg 1995, 2006; Michaelis 2004).

Generally, three macro-types of coercion phenomena are recognized: nominal, aspectual and valency coercion (Audring & Booij 2016; Michaelis 2004; Pustejovsky 2011).

- (1) a. My beer lasted one hour. (nominal coercion)
 b. I'm believing every word he's saying. (aspectual coercion)
 c. She sneezed the foam off the cappuccino. (valency coercion)

Here, we propose an acceptability rating task which aims to address the grammaticality of coerced sentences in Italian. The paper specifically focuses on *valency coercion*, defined as the mismatch occurring when the deviant element is a verb “coerced” by the general argument structure construction into taking a different number of participants, and thus acquiring a different meaning in line with the generic semantic content of the construction, such as the forced transitive use of the verb “to sneeze” in example (1c) above. Valency coercion phenomena therefore arise when verbs and argument structure constructions combine in novel and flexible ways (Perek 2015: 31).

The paper is structured as follows: Section 1.1 discusses different models of argument realization in the literature; Sections 1.2 and 1.3 zoom in more specifically on the phenomenon under investigation – valency coercion – first in general, then with a specific focus on Italian. Section 2 will outline design, materials, participants and procedure of our acceptability ratings task. In Section 3, we describe the different analyses conducted on the data and discuss preliminary results and future directions of work. Section 4 will conclude the study with a general discussion of the significance of its results.

1.1 Models of argument structure realization

The predominant approach in linguistics since Chomsky (1965) has supported a verb-centered view of argument structure: the main verb of the sentence is claimed to play a pivotal role in the process of interpretation, by specifying (or projecting) the number and types of arguments and the way they relate to one another. This assumption has also been the predominant paradigm in most psycholinguistic and neurolinguistic models of sentence comprehension and production (see for example Friederici et al. 2000; Moro et al. 2001; Yamada & Neville 2007). In fact, substantial experimental evidence has been gathered in support of the critical importance of the main verb in sentence comprehension (see Bencini & Goldberg 2000: 641 for a review of several important works).

Nevertheless, although it is undoubtable that a large amount of lexical information is provided by verbs, it is difficult to account for the fact that all the nuanced knowledge on argument realization patterns comes from single lexical items. In the domain of usage-based models of language, a number of frameworks have suggested that general principles which go beyond individual lexical items are at play in constructing a sentence meaning. The growing consensus surrounding usage-based models in the last 30 years stems from their different approach to the issue of verbal polysemy (Fillmore 1968; Levin 1993; Levin & Rappaport-Hovav 2005).

In particular, the major linguistic framework that adopts a usage-based perspective on language is Construction Grammar (henceforth: CxG). CxG posits autonomous and independent abstract meanings for argument structures, instead of assuming a multitude of verbal meanings corresponding to the variety of different argument structure configurations in which verbs can occur (Boas 2014; Kay & Fillmore 1999; Goldberg 1995, 2002; Jackendoff 1997). In CxG, the basic units of language – called constructions (henceforth: Cxn) – are defined as conventionalized form-meaning pairings (Goldberg 2006; Hilpert 2014). In this view, Cxns provide an autonomous, abstract meaning to the whole expression, which is independent from but unifies with the semantics of the lexical items it combines with. Constructionist approaches, in other words, claim that lexical items and Cxns contribute different aspects of the general meaning of a sentence, in which lexical items typically have a richer and more specific connotation than the semantic content of abstract Cxns. For example, the Ditransitive Cxn is taken to prototypically convey the meaning of “transfer of possession from an agent to the recipient” (Goldberg 1995; Pinker 1989). In the most straightforward cases, the semantic information given by the Cxn is generally redundant with respect to the meaning of the verb. Thus, when this Cxn is used with verbs that encode transfer as well, as in (2a), verb and Cxn both “work together” in the process of interpretation. In other cases, however, conflicts between constructional and lexical meanings arise, as in the case of (2b), in which the main verb is not in line with the overall semantic content of the construction.

- (2) a. Mary gave Bill the ball.
 b. Mary kicked Bill the ball. (from Goldberg 1995: 38)

Such cases involve different interpretative strategies: if the incompatibility is too large to be resolved (unlike sentence 2b above), the sentence is rejected as semantically anomalous; otherwise, the semantic mismatch is resolved into an acceptable meaning. The Cxn forces the deviant lexical item to conform to the general semantics of the structure in which it is embedded. Here, (2b) can be interpreted as “Mary kicked the ball to give it to Bill”. This novel combination of verbs

and Cxns is referred to as *valency coercion*. Not surprisingly, coercion and construction flexibility in the interaction of verbs and argument structure have been among the main supporting arguments in recognizing argument structure Cxns as structural units of language, with abstract and independent semantics that dynamically interact with the semantics of the lexical items that occur in them (Goldberg 2006; Michaelis 2004; Lauwers & Willems 2011; Perek 2015).

In the last 25 years, the increasing support for constructionist approaches in linguistics has also coincided with a growing interest in providing psycholinguistic experimental evidence to back up this perspective. Important results have supported the independent status of argument structure constructions (Landau & Gleitman 1985; Gleitman & Gillette 1995), their importance in sentence processing (Ahrens 1995; Bencini & Goldberg 2000; Goldberg & Bencini 2005; Hare & Goldberg 1999; Johnson & Goldberg 2013; Kako 2006), and language acquisition (Bybee 2010; Ellis 2012 – for a general review, see Perek 2015). This relatively new stream of experimental approaches to CxG has involved coercion phenomena as well. A growing interest in experimental works on coercion has been developing, including psycholinguistics, neurolinguistics, and corpus-based studies (cf. Baggio et al. 2010; Jezek & Lenci 2007; Lukassek et al. 2017; Piñango et al. 2006; Pustejovsky & Jezek 2008; Townsend 2013). However, little work exists on constructional coercion phenomena in languages other than English.

1.2 Coercion phenomena

The unusual combinations of lexical items and general constructions are especially important in constructionist accounts, as was mentioned, but the peculiarities of verbs and argument structure combinations have also been extensively investigated in lexical semantics (Asher 2011; de Swart 1998; Dowty 1991; Jackendoff 1997; Moens & Steedman 1988; Zucchi 1998), and in particular within the Generative Lexicon theory (see Jezek & Lenci 2007; Pustejovsky 1995; Pustejovsky & Jezek 2008).

The interest in the interaction of verbs and their syntactic structure is particularly evident in studies on English, in which creative combinations of verbs and argument structure are common, as shown by the following examples (3a–f), taken from different types of texts: pop songs, natural language corpus, TV-series.

- (3) a. Dance me to the end of love (Leonard Cohen)
 b. Close your eyes and dream me home
 (Queen of the Stone Age, “Villains of circumstance”)
 c. People say I’m lazy dreaming my life away
 (John Lennon, “Watching the wheels”)

- d. I tried singing myself to sleep (and then with an ipod)
(from *EnTenTen* corpus)
- e. He almost danced me right down that garbage chute
(*Friends*, season 4 episode 4)
- f. They can't scare us back in the closet
(*The handmaid's tale*, season 2 episode 1)

However, despite the pivotal role of coercion in Construction Grammar, not many languages apart from English have been investigated with respect to valency coercion phenomena (for notable exceptions, see Fried & Östman 2004 for a crosslinguistic study; González-García 2007 and Boas & González-García 2014 for Romance languages and Spanish; Perek & Hilpert 2014 for German and French). In particular, no attempt has been previously made – to the best of our knowledge – to address the psycholinguistic status of valency coercion in Italian.

1.3 Coercion effects in Italian

There are several motivations behind the work presented here. Primarily, as mentioned above, there is a literature gap in studying coercion phenomena outside English. Additionally, the vast majority of studies on coercion – in English and other languages – has approached it from a purely theoretical standpoint. Experimental accounts of the phenomenon are still quite scarce, even in light of the aforementioned recent development of experimental literature on grammaticality judgments (Perek & Hilpert 2014), processing (Piñango et al. 2006), frequency (Gries 2005, 2013) and contextual effects (Boas 2011) in coercion phenomena. Finally, and most importantly, even though constructionist approaches have been successfully applied to Romance languages, studies on Italian are still considerably scarce (see Masini 2005, 2009, 2012, 2016; Torre 2012). In particular, there has not been – to our knowledge – any attempt to analyze constructional flexibility and valency coercion in Italian.¹ The analysis of constructional coercion in Italian is however of great interest for a more typologically accurate understanding of the boundaries of Cxn flexibility. In fact, a typological distinction has been proposed in the literature between *constructionally tolerant* languages, which allow syntactic Cxns to combine rather freely with lexical items in non-conventional ways, and *valency-driven* languages, which instead tend to impose stricter constraints on the possible novel combinations of constructions and lexical items (Rostila 2014; Perek & Hilpert 2014). Romance languages are categorized as valency-driven, as opposed to Germanic languages, which are considered to be more construction-

1. Pustejovsky and Jezek (2008) investigate predicate-argument semantic coercion in Italian, but within the Generative Lexicon framework.

ally tolerant. Yet, Italian holds a rather special place among the Romance languages (Koch 2001). In particular, it displays a fairly productive and rich system of Verb-Particle Cxns (Masini 2005; Fagard et al. 2017). Consider examples (4a–d) below (Masini 2005: 150).

- (4) a. *Luca ha lavato via la macchia.*
 “Luca washed away the stain.”
 b. *È andato dentro*
 “He went in.”
 c. *Abbiamo messo su il caffè*
 “We put the coffee on.”
 d. *Maria manda avanti l’azienda di famiglia*
 “Maria sends forward (i.e. runs) the family business.”

These structures are very frequent in Germanic and Ugro-Finnic languages (cf. Dehé et al. 2002), but only sporadically appear among major Romance languages. This inconsistency has even led various scholars to re-classify Italian within Talmy’s (1985) distinction between Verb and Satellite-framed languages (see Iacobini & Masini 2007 for one of the first accounts of the problem). Italian has thus been defined as a “mixed” language (Koch 2001: 1170), as a “high-salient path” Verb-framed language (Ibarretxe-Antuñano 2015), or even as a Satellite-framed language *tout court* (Simone 2008: 24). This recognized peculiarity of Italian constructions suggests that an investigation of coercion phenomena in argument structure Cxns can yield interesting results.

Coercion phenomena are indeed found in Italian, although they are neither as frequent nor as ubiquitous as in English. They are typically used for creative and innovative purposes, as in example (5a) below, taken from a literary blog, or (5b), taken from a highway street sign warning not to drink and drive.

- (5) a. (...) *tossì una risata leggera tra i suoi capelli*
 “He coughed a light laugh in her hair.” (from *ItWac* corpus)
 b. *Scegli di vivere, non berti la vita!*
 “Choose living, don’t drink up your life!”

Our hypothesis is that Italian allows for some constructional flexibility, but that such flexibility is constrained. In other words, we assume that Italian displays hybrid characteristics, which place it somewhere in between constructionally tolerant and completely valency-driven languages. We argue that the degree of *semantic compatibility* (Kemmer 2008; Yoon 2016) between main verb and Cxn somewhat limits the flexibility of Cxns, but that valency coercion effects are nonetheless recognized as such by native speakers.

We define semantic compatibility following Yoon (2013, 2016): two linguistic components are semantically compatible if “the prototypical semantic specifications of the two linguistic components (...) [are] conceptually consistent” (Yoon 2016: 244). That is, the semantic properties of the verb occurring in a Cxn should (at least partially) fit those of the construction (see Yoon 2013 for an in-depth discussion). Semantic compatibility is not a binary but rather a gradient notion. For instance, in sentence (a) *I pushed the box into the room* the verb perfectly fits the Cxn both formally and semantically: *push* typically occurs in caused motion argument realizations, and denotes an event of ‘moving an object to another place by means of pushing’. Instead, the verb *remember* in sentence (b) **I remembered the box into the room* is not compatible with the general Cxn: not only the verb is not likely to occur in the syntactic frame of the Cxn, but it does not prototypically entail any motion or direction, and strongly mismatches with constructional meaning (i.e. ‘moving an entity along a path to a direction’). However, there are cases in which the mismatch is less accentuated: in sentences such as (c) *I sneezed the napkin off the table*, the use of the verb *sneeze* is acceptable, even though it does not independently license a Caused Motion frame, nor does it entail a caused motion event. Nevertheless, the semantic specifications of *sneeze* are not as “distant” from a caused motion event as those of *remember*. Hence, the semantic conflict can be resolved more easily, as the conventional meaning of the Cxn successfully provides the caused motion interpretation of the sentence, with the main verb specifying the manner of such movement.

In English, semantic compatibility is often achieved due to an extreme flexibility of Cxns, and one could even imagine a particular context in which (B) might be used felicitously (Yoon 2013: 7). Italian, however, is (at least partially) *valency driven*. Hence, we argue that the semantic compatibility of verb (lexical semantics) and Cxn (constructional semantics) is crucial to coercion resolution.

2. An acceptability rating task on Italian valency coercion

We present the results of a first acceptability rating experiment that is part of a larger empirical study on Italian valency coercion. The experimental design is based on Perek & Hilpert (2014), remodeled and adapted to Italian and to the different goals of the study. The original study aimed to explore possible effects of constructional tolerance on native speakers of English and French, both exposed to stimuli sentences of varying creativity in German, as their common second language. In the following section, we will describe test materials, structure, elicitation protocol and data collection.

2.1 Materials²

The test is structured around nine argument constructions of Italian, selected by the first two authors, who are native speakers. The literature on Italian constructions is still scarce, thus the selection of the constructions was performed either by consulting existing resources³ or by adapting types of constructions already identified for English to Italian syntax and semantics, based on the first two authors' native intuitions.⁴ Since the aim of this work is to provide a preliminary wide-scope investigation of valency coercion in different constructional patterns of Italian, we selected nine Cxns of different degree of schematicity and productivity, following Barðdal (2008) (see Table 1). Since constructional meaning arises from repeated usage events, incorporating Cxns with different degrees of productivity and schematicity allowed us to test valency coercion effects in argument structure Cxns with different distributional behavior. Table 1 outlines the selected constructions, which will be briefly described in terms of their form and meaning in the remainder of this section.

Table 1. Selected constructions

	High productivity	Medium productivity	Low productivity
High schematicity	PASS	VDE, VDI	/
Medium schematicity	IM, DT	CM	PRED
Low schematicity	/	CM _{via}	CO

Caused Motion Cxn (henceforth, CM): consists of an Agent (subject), a verbal predicate, a Theme (the direct object) and a locative phrase introduced by a preposition referring to a Source or Goal. In CM, the Agent directly causes the movement of the Theme from a location A to a location B along a path specified by the locative phrase, as in (6). Caused-motion constructions are quite frequent in Italian (Torre 2011), although they occur with a much more restricted range of verbs than in English.

- (6) *Giulia ha messo i pomodori nell'insalata.*
 "Giulia put the tomatoes in the salad."

2. The dataset is available in pdf format at https://osf.io/6dtmy/?view_only=502b21d31918470094ba8b5d40a471f

3. The bibliographic and online resources that were consulted are LexIt (Lenci et al. 2012), the Italian section of the typological database ValPal (Cennamo & Fabrizio 2013), and Masini (2005, 2009).

4. A more formal and theoretical analysis of the chosen constructions lies outside the scope of this paper and we reserve it for future research.

Caused motion + via Cxn (henceforth, CMvia): profiles the same type of event as the CM construction and is part of the Verb Particle Constructions (VPCs) illustrated above. The CMvia Cxn is characterized by the presence of the particle *via* ('away, off'), which can occur either immediately after the verb or after the direct object (the Theme).⁵ The presence of such a particle favors the locative interpretation. In our study, we will focus only on the [[Verb] [Particle][Object]] form, as in (7).

- (7) *La ragazza ha buttato via le critiche.*
 "Sara threw away (i.e. got rid of) criticisms."

Cognate Object Cxn (henceforth, CO): consists of an Agent (the subject), an intransitive (typically unergative) verbal predicate, which is used transitively with a direct object that is "cognate" to the verb root (see example (8) below). The direct object (the Theme) is often modified to avoid redundancy effects (see Massam 1990; Goldberg & Ackerman 2001). The Cxn has been widely studied cross-linguistically (Pereltsvaig 1999; Real-Puigdollars 2008) and recently also for Italian (De Roberto 2012; Melloni & Masini 2017; Mirto 2011). This Cxn is the least productive of our sample.

- (8) *Sara ha dormito un sonno di piombo.*
 "Sara slept a sleep of lead (lit. a deep sleep)."

Dative Cxn (henceforth, DT): consists of an Agent (the subject), a verbal predicate, a Theme (direct object) and a Recipient. DT conceptualizes a Transfer event – both literal or metaphorical – like the well documented and studied Ditransitive Cxn in English (see inter alia Goldberg 2002). However, Italian only allows for an indirect prepositional object (NPsubj- V- NPobj – PPrecipient), as in (9) below (Malchukov & Siewierska 2011; Zúñiga & Kittilä 2010).

- (9) *Mio fratello ha dato una risposta a Giulia.*
 "My brother gave an answer to Giulia/ gave Giulia an answer."

Intransitive Motion Cxn (henceforth, IM): consists of a Theme (subject) which moves along a Path to a different point in space. In contrast to the CM construction, the external cause of the movement is not part of the conceptualized event, and the main verb is intransitive, as in example (10).

- (10) *Giulia è andata a casa.*
 "Giulia went home."

5. We use here the generic term *particle* to be consistent with the literature on VPC.

Passive Cxn (henceforth, PASS): consists of a Patient (subject), a verbal predicate in the passive voice, and a prepositional phrase specifying the Agent of the action performed on the Patient. This is the most schematic type of Cxn of our sample. In fact, several scholars argue for the English Passive Cxns to be a family of constructions, rather than a single broad Cxn (see for instance Tomasello 2005).

- (11) *La malattia è stata combattuta dal paziente.*
“The illness was fought by the patient.”

Predicative Cxn (henceforth, PRED): consists of a Cognizer⁶ (the subject) which assigns to a Theme (direct object) a characteristic or a category. It is not well documented in the constructionist literature, especially for Italian, but a variety of studies on English and other languages exist (inter alia, Gries 2005; Hilpert 2009, 2014; González-García 2014).

- (12) *Il capo ha reputato Lorenzo il candidato perfetto.*
“The boss considered Lorenzo as the ideal candidate.”

Verba Dicendi Cxn (henceforth, VD): consists of an Agent (subject), a verbal predicate and a subordinate clause. Depending on the complementizer introducing the subordinate clause, we subdivided the general Cxn into two more specific structures: the Explicit VD Cxn (henceforth, VDE) has the particle *che* and a finite form of the verb (NPsubj-V-*{che}*clauseobj), see example (13a). The Implicit VD Cxn (henceforth, VDI), instead, introduces the subordinate clause with the particle *di* plus the infinitive form of the verb (NPsubj-V-*{di}*VPobj), see example (13b). The two are considered separate as VDE explicitly repeats the grammatical subject in the relative pronoun *che*, which is followed by a VPobj in a finite form. VDI instead only specifies the subject in one slot, and the VPobj following the particle *di* is in the infinitive form.

As the name suggests, the VD Cxn is used to encode events of saying, telling, narrating, etc.

- (13) a. *Il bambino ha spiegato che ha fame.*
“The boy explained that he’s hungry.”
b. *Gianni ha detto di amarla.*
“Gianni said of loving her (i.e. (that) he loves her).”

6. This term was taken from the semantic database FrameNet (<https://framenet.icsi.berkeley.edu/fndrupal/>).

2.2 Stimuli selection

For each construction a set of 21 sentences was created, equally subdivided into 3 different experimental conditions (7 sentences per condition), for a total of 189 experimental stimuli: grammatical, creative (coercion), and impossible, as in Perek and Hilpert's (2014) study. The first condition (GRAMM) includes grammatical sentences, the third (IMP) clearly ungrammatical ones, and the middle condition consists of creative coerced structures (COER). In contrast to the original study by Perek and Hilpert, in which completely different sets of stimuli were designed for each condition, sentences in each condition only differed in their main verb, to minimize variation as much as possible. To this purpose, all stimuli were also constructed with the same structure: third person singular subject and the verb in the "passato prossimo" (finite form of *avere* 'have' followed by the past participle form of the verb). Sentences (14a, b, c) belong respectively to the grammatical, creative, and impossible conditions.

- (14) a. *Gianni ha detto che verrà domani.*
 "Gianni said that he will come tomorrow."
 b. *Gianni ha fischiettato che verrà domani.*
 "Gianni whistled that he will come tomorrow."
 c. *Gianni ha cucinato che verrà domani.*
 "Gianni cooked that he will come tomorrow."

For the coercion condition, following Perek and Hilpert (2014), we chose verbs that are not completely semantically extraneous to the overall semantic content of the Cxn, but nevertheless remain anomalous (i.e. verbs with partial semantic compatibility). For instance, for both VDE and VDI Cxns, we constructed creative stimuli using verbs relating to the Sound Emission domain (e.g. chirp, whine, whisper, etc.). Table 2 below provides an overview of the verb types used in constructing the coerced sentences, and their difference from the prototypical verb types occurring in grammatical structures. In contrast, impossible sentences are constructed with verbs fully incompatible with the Cxn, in the sense that they do not make a sensible combination with the constructional meaning.

Table 2. Verb classes and types used for the grammatical (middle column) and creative (right column) conditions

Constructions	Non-coerced verb type	Coerced verb type
CM + CM _{via}	Causative (or force-exertion) movement verbs e.g. <i>mettere</i> 'put'	Intransitive or not-prototypically transitive verbs for which caused motion is a possible implicature ("manner of placing") e.g. <i>tossire</i> (<i>qualcosa</i>) 'cough (sth)'

Table 2. (continued)

Constructions	Non-coerced verb type	Coerced verb type
CO	Intransitive verbs with same meaning or morphological stem of the direct object NP e.g. <i>dormire (un sonno)</i> 'sleep (a sleep)'	Intransitive verbs with similar meaning to the direct object NP e.g. <i>riposare (un sonno)</i> 'rest (a sleep)'
DT	Transitive verbs encoding transfer e.g. <i>dare</i> 'give'	Intransitive or not prototypically transitive verbs for which transfer is a possible implicature. e.g. <i>sorridere</i> 'smile'
IM	Intransitive motion verbs e.g. <i>andare</i> 'go'	Manner of motion verbs e.g. <i>strisciare</i> 'slither'
PASS	Prototypical transitive verbs e.g. <i>sapere</i> 'know'	Pseudo-transitive verbs (intransitive verbs which can in some contexts be used with direct objects) e.g. <i>lottare</i> 'fight for' (intr.)
PRED	Verbs of direct cognition or perception e.g. <i>considerare</i> 'consider'	Verbs of indirect cognition or perception e.g. <i>stimare</i> 'estimate'
VDE & VDI	Verbs of saying / telling e.g. <i>dire</i> 'say'	Sound emission verbs e.g. <i>frignare che</i> 'whine that' <i>cantare di</i> 'sing (that)'

For the coercion condition, a first CQL query on the *ItWac* corpus (Baroni et al. 2009) was performed, to check if examples of recognizable coercion effects were attested (see (15a–i) for instances of coercion from the corpus), and the verb types found in these corpus instances were used to create the coercion stimuli. For grammatical and impossible conditions, both the selection on the verb and the construction of the stimuli were based on native speaker intuitions of the first two authors.

- (15) a. Tossisco *versi per scoprire un centro di sole radioso*. CM
 "I cough verses to discover a radiant sun center."
- b. *Sembra che Elis sia riuscito (...) a ridere via il male*. CMvia
 "It seems that Elis has succeeded (...) in laughing away the evil."
- c. *Io finalmente riposavo un sonno tranquillo*. CO
 "I finally rested a peaceful sleep."
- d. *Se la immaginava sorridere la risposta*. DT
 "He imagined her smiling the answer."
- e. *Facevano tutti fatica a sbronzarsi abbastanza per strisciare a casa a dormire*. IM
 "They all found it hard to get drunk enough to crawl home to sleep."
- f. *Il risultato è stato lottato fino all'ultima ricezione*. PASS
 "The result was struggled until the very last point."

- g. *Il Sinedrio (..) ha stimato Gesù meritevole di morte.* PRED
 “The Sanhedrin (..) estimated Jesus deserving of death.”
- h. *Il bambino frigna che vuole fare anche lui la caccia al tesoro.* VDE
 “The boy cries that he also wants to hunt for treasure.”
- i. *Il movimento canta di essere la faccia della democrazia.* VDI
 “The movement sings of being the face of democracy.”

Table 3 below presents a summary of the stimuli sentences. For each Cxn, three example sentences, one for each experimental condition, are provided (from the top down: grammatical, coercion and impossible).

In constructing the stimuli, we assumed that the verb types used in the coercion condition are partially compatible with the target Cxn, whereas the impossible verb types are incompatible. To test this assumption, we computed pairwise cosine distance (i.e., $1 - \text{cosine}$) of the verbs in our conditions, using WEISS (Word-Embeddings Italian Semantic Spaces – Marelli 2017) (Figure 1). Statistical significance was checked with a paired-sample t-test. Cosine distances between grammatical and coercion verbs is significantly smaller than the distance between grammatical and impossible verbs ($t = -4.554$, $p\text{-value} < 0.0001$). Smaller cosine distances indicate that coercion verbs are indeed more similar to prototypical verbs for each Cxn than impossible verbs.

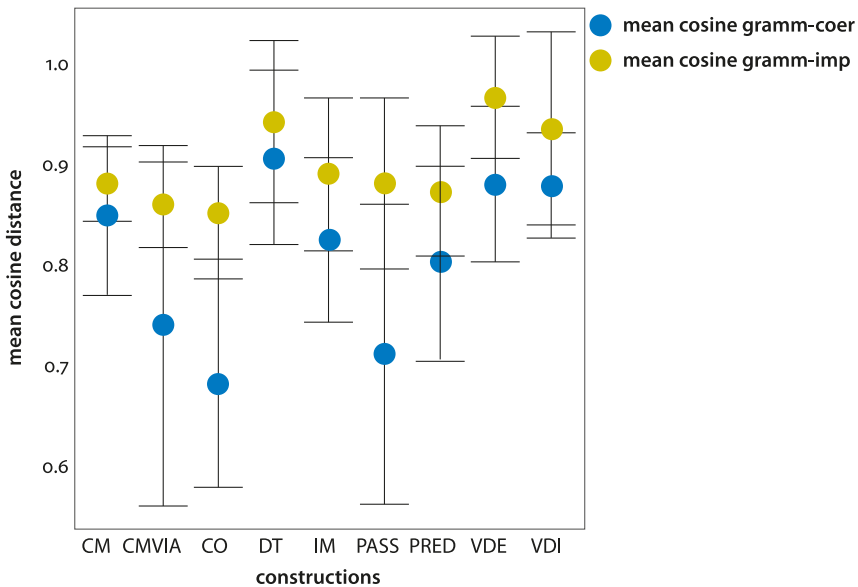


Figure 1. Mean cosine distances per construction

Table 3. Italian argument structure Cxns and example stimuli sentences

Cxn	Stimuli	Translation
CM	Giacomo ha versato birra su tutto il tavolo	Giacomo spilled beer all over the table
	Giacomo ha tossito birra su tutto il tavolo	Giacomo coughed beer all over the table
	Giacomo ha bevuto birra su tutto il tavolo	Giacomo drank beer all over the table
CMvia	Sara ha buttato via le critiche	Sara discarded (lit: threw away) the criticisms
	Sara ha riso via le critiche	Sara laughed away the criticisms
	Sara ha truccato via le critiche	Sara fixed away the criticisms
CO	Sara ha dormito un sonno di piombo	Sara slept a deep sleep (lit: a sleep of lead)
	Sara ha riposato un sonno di piombo	Sara rested a deep sleep (lit: a sleep of lead)
	Sara ha ascoltato un sonno di piombo	Sara listened a deep sleep (lit: a sleep of lead)
DT	Mio fratello ha dato una risposta a Giulia	My brother gave an answer to Giulia
	Mio fratello ha sorriso una risposta a Giulia	My brother smiled an answer to Giulia
	Mio fratello ha pensato una risposta a Giulia	My brother thought an answer to Giulia
IM	Giulia è andata a casa	Giulia went home
	Giulia è strisciata a casa	Giulia crawled home
	Giulia è gironzolata a casa	Giulia loitered home
PASS	La malattia è stata combattuta dal paziente	The illness was fought by the patient
	La malattia è stata lottata dal paziente	The illness was struggled by the patient
	La malattia è stata venduta dal paziente	The illness was sold by the patient
PRED	Sara ha ritenuto Gianni bravissimo	Sara considered Gianni (to be) excellent
	Sara ha stimato Gianni bravissimo	Sara estimated Gianni (to be) excellent
	Sara ha guardato Gianni bravissimo	Sara looked Gianni (to be) excellent
VDE	Il bambino ha spiegato che ha fame	The boy explained that he's hungry
	Il bambino ha frignato che ha fame	The boy whined that he's hungry
	Il bambino ha giocato che ha fame	The boy played that he's hungry
VDI	Gianni ha detto di amarla	Gianni said he loves her
	Gianni ha cantato di amarla	Gianni sang he loves her
	Gianni ha starnutito di amarla	Gianni sneezed he loves her

The experiment was designed to test whether native Italian speakers judge coercion structures to be more similar to grammatical, ungrammatical or as different from both. We expect that deviant sentences will be rated as an intermediate condition: not entirely grammatical, but not impossible altogether.

Furthermore, we expect the degree of naturalness of coercion sentences to vary substantially between Cxn types. The purpose of the test is therefore twofold: not only testing the character of coercion as significantly different from grammatical and ungrammatical sentences, but also verifying whether and to what extent this varies between different constructions.

2.3 Subjects

The acceptability rating test was presented to 120 Italian native speakers, subdivided into three age groups: adolescents (12–14 years old), young adults (18–35 years old), adults (over 40 years old). The first group all belonged to the same school (*Scuola Media L. da Vinci* in Perugia, Italy). The second and third group were recruited via online platforms and social media.

We decided to test subjects of different ages following the sociolinguistic literature. There is in fact longstanding research that has shown that language use changes with age (Eckert 2017; Labov 1994; Wagner 2012) and users' speech patterns are largely set by early adulthood (Labov 1994, 2001). Thus, it could be the case that grammaticality judgments on creative, non-standard sentences are also affected by age. This in turn might reflect the sociolinguistic construct of *apparent-time* hypothesis, which claims that age-influenced linguistic variation may indicate linguistic change in progress. Table 4 summarizes the distribution of participants in the three age groups.

Table 4. Participants in each age group

Age group	Age	Gender	Tot subjects
Adolescents	12–14 (mean 12,9)	24 m (61,5%) 15 f (38,4%)	39
Young adults	18–39 (mean 27,3)	15 m (37,5%) 25 f (62,5%)	40
Adults	Over 40 (mean 56,7)	18 m (43,9%) 23 f (56,1%)	41

Another important factor to consider in grammaticality judgment tasks is the level of education of subjects (Dąbrowska 1997). To control for this variable we only considered adult subjects that were either enrolled in a university course or already had at least a bachelor's degree.

2.4 Procedure

We adopted a within-subject design, in which all subjects were presented with the same set of stimuli in randomized order. The task consisted in providing grammaticality judgments for every sentence on a 7-point Likert scale, ranging from

“completely unnatural” to “perfectly natural”. The choice of seeing grammaticality judgments as gradable rather than binary (Schütze 1995 in the references: 62; Perek & Hilpert 2014: 270–74) is self-explanatory for the purpose of our study, since we expect to measure intermediate levels of acceptability (cf. Section 2.1).

In order to test a reasonable number of participants across the whole age range, the modality of data collection varied among the three age groups. The adolescent subjects were given the test directly in their class: they were provided with a paper test which included all the stimuli. Each student saw a different randomized order of the stimuli. Unrelated but explicative examples were also given to the students. The task was explained both orally by the first author and in written form. The test took about 40 minutes, with a 5-minute break to prevent fatigue. The total number of tested subjects was 45, but 6 speakers (4 m, 2 f) were subsequently excluded from the analysis because they suffered from cognitive disabilities or dyslexia. Young adults’ judgments were collected using the internal interface provided by the online platform Figure Eight (via CrowdFlower). The participants were provided with an explanation of the grammaticality task they should perform. Unrelated but explicative examples were also given. The automatically randomized stimuli were presented 5 at a time. Judgments of 41 speakers were gathered, but the data from one participant was later excluded from the analysis due to low level of schooling.

Older adults, on the other hand, were presented with a spreadsheet or Microsoft Word document; in this case as well, stimuli were previously randomized for each participant. Unrelated but explicative examples were also provided. This method of data collection was chosen to include older participants who do not have familiarity with online data gathering. Data from 40 speakers was collected. We did not control for geographical provenance of participants, due to the preliminary nature of this study, but reserve to do so in future works.

3. Analyses and results

Since our main research question concerns the recognition of coercion sentences as a middle ground between grammaticality and ungrammaticality, we first tested for statistically significant differences between the coercion condition and each of the other two experimental conditions.

The distribution of acceptability judgments for each experimental condition is shown in the boxplot in Figure 2. Table 5 provides a summary of the descriptive statistics of the data.

From a first inspection of the data (Figure 2, Table 5), it appears that speakers distinguished the three experimental conditions quite well, with most ratings

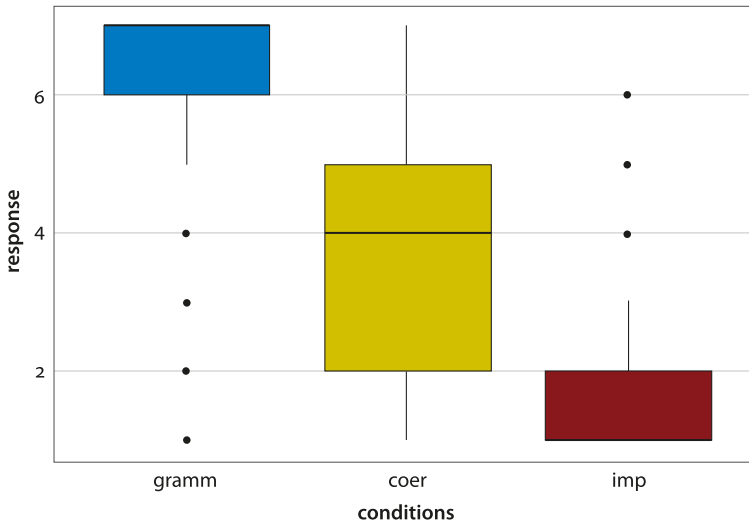


Figure 2. Boxplot showing the distribution of responses in the 3 experimental conditions. Blue corresponds to grammatical condition, yellow to the coercion condition and red to the impossible condition

Table 5. Descriptive statistics of the whole dataset

Condition	Mean	Stdev	Variance	Median
GRAMM	6.30	1.3	1.7	7
COER	3.65	2.1	4.23	4
IMP	1.96	1.5	2.29	1

being assigned to intermediate values. We tested for statistical significance using linear mixed effect modelling with the R package *lmerTest* (Bates et al. 2015; Kuznetsova et al. 2017). Visual inspection of residual plots did not reveal any obvious deviations from homoscedasticity or normality. As random item structure, we grouped stimuli across conditions: i.e., a single item is composed by three sentences, one for each condition; sentences (14a–c) thus constitute a single item in the models.

3.1 First model

First, we tested for the influence of different experimental conditions on the data, assuming that grammatical, coercion and impossible stimuli would have received significantly different ratings (see Figure 1). For model selection, we followed

an automatic stepwise procedure via LRT (likelihood-ratio test – Baayen 2008; Perex & Goldberg 2017) as implemented by the function *mixed* in the R package *afex* (Singmann et al. 2015). The resulting model includes experimental condition as predictor, and both subjects and experimental items as random effects ($\chi^2_{sq} = 20707.6$, $p\text{-value} < 0.0001$).

$$\text{response} \sim \text{condition} + (1|\text{subject}) + (1|\text{item})$$

Marginal (R^2_m) and conditional (R^2_c) R^2 values were calculated following Nakagawa and Schielzeth's (2013) method, using the R package *MuMIn* (Bartoń 2018). The R^2_m of the model – i.e. proportion of variance explained by the fixed effects – is 0.56, and the R^2_c – i.e. proportion of variance explained by adding the effect of the random factors – is 0.62. Fixed effects are reported in Table 6 below.

Table 6. Results for the predictors of the mixed effect model

	Estimate	Std. Error	t value	Pr (> t)
COER	3.64***	0.07	49.23	< 0.0001
GRAMM	2.66***	0.02	109.4	< 0.0001
IMP	-1.79***	0.02	-73.85	< 0.0001

Default R treatment contrast coding was used in this model; as reference level – i.e. the level of the predictor which every other level is compared to – we used the coercion condition. Values of the coercion condition are therefore coded as the intercept.

The judgments for the coercion condition are about 2.7 scale points lower than the grammatical condition, and 1.8 higher than the impossible one. The difference among conditions is significant, i.e. coercion was indeed perceived as an intermediate condition, different from both grammatical and ungrammatical sentences. The interpretation of this result is twofold. First, the fact that creative structures were rated as significantly less natural than grammatical sentences suggests that verb semantics appears to play a crucial role in sentence interpretation, as the literature on valency-driven languages indicates (see Perex & Hilpert 2014).

Nevertheless, coercion sentences received significantly higher ratings than impossible sentences, and therefore were considered to some extent more natural. This means that, although the main verb has a strong influence in the process of interpretation, there is a feature of coercion sentences that had a positive effect on their perceived naturalness. In our interpretation, this feature is

the general constructional meaning, which overrides lexical verb semantics to yield a coerced interpretation of novel structures. Thus, at least in a first analysis, our initial assumption on the hybrid status of coercion in Italian is verified by the data.

However, an examination of the by-subject and by-item variation in the data somewhat nuances this conclusion. Figure 3 represents variation in the data averaged across participants (by-subject) and experimental items (by-item). The by-item variation in the coercion condition – i.e. variation in the creative condition across items – is by far the greatest source of variance. This fact is in line with our assumption that different Cxn types behave differently.

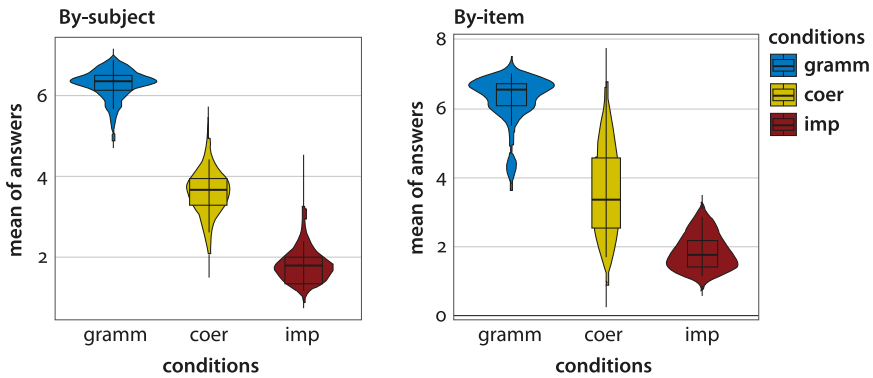


Figure 3. Violin plots of by-subject and by-item variation in the data

In the next section, we turn to testing for the influence – if any – of different constructions. We hypothesize that the degree of naturalness of creative structures is strongly dependent on the type of argument structure construction.

3.2 Cxn type variation

We expect different Cxns to play a role in the perceived naturalness of coercion sentences, and that some creative structures could be perceived as more natural than others depending on the type of Cxns in which they occur. When incorporating Cxns into the analysis, in fact, visual inspection of the data confirms that Cxn type seems to have a noticeable effect on the data distribution. Figure 4 graphically represent the relation between experimental condition and different Cxn type.

To test for the statistical influence of the different constructions on our model, a second linear mixed effect model was constructed. The same structure as the first one was maintained, adding “construction” as second predictor, and an inter-

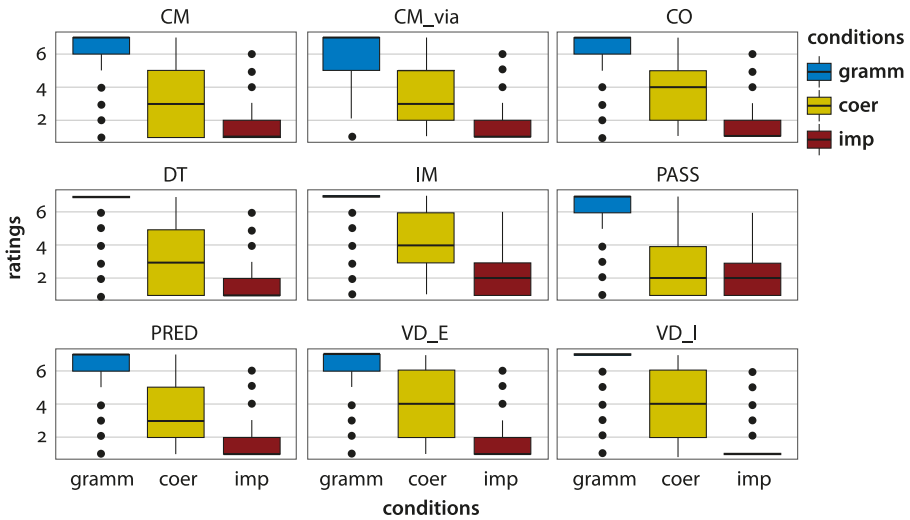


Figure 4. Boxplots of the distribution of the three experimental conditions for each construction

action term between construction and experimental condition. Contrasts of the predictor “construction” were sum coded, so that “each coefficient compares the corresponding level of the factor to the average of the other levels” (Fox & Weisberg 2011: 130).

In fact, we do not have any theoretical reason to use a specific Cxn as an intercept against which to compare all other constructions; hence, sum coding the variable returns an intercept which is not a level of the predictor but the mean of the values of the predictor. For the predictor “condition”, instead, we left the default R *treatment contrasts*, to compare all levels to the one of interest, i.e. the creative condition. The R2m of the model is 0.71, and the R2c is 0.76. The higher R2 values for this model, compared to the previous one, indicate that adding construction as a predictor does capture some previously unexplained variance in the data. Estimates of the predictors of the second model are reported in Table 7.

Table 7. Fixed effects of the second mixed effect model

	Estimate	SE	t value	Pr (> t)
COER	3,64	0,10	37,45	< 0.0001
GRAMM	2,66	0,02	110,87	< 0.0001
IMP	-1,79	0,02	-74,84	< 0.0001
COER x CM	-0,14	0,16	-0,91	0,36
COER x CMVIA	-0,24	0,16	-1,53	0,13

Table 7. (continued)

	Estimate	SE	t value	Pr (> t)
COER x CO	-0,26.	0,13	-1,95	0,05
COER x DT	-1,34***	0,17	-7,98	< 0.0001
COER x IM	1,02***	0,16	6,40	< 0.0001
COER x PASS	-0,73**	0,26	-2,75	0,009
COER x PRED	-0,07	0,26	-0,27	0,79
COER x VDE	1,06***	0,16	6,67	< 0.0001
COER x VDI	0,70***	0,15	4,57	< 0.0001
GRAMM x CM	0,05	0,07	0,75	0,45
IMP x CM	0,35***	0,07	5,18	< 0.0001
GRAMM x CMVIA	-0,36***	0,07	-5,41	< 0.0001
IMP x CMVIA	0,01	0,07	0,15	0,87
GRAMM x CO	-0,14*	0,07	-2,11	0,03
IMP x CO	-0,15*	0,07	-2,13	0,03
GRAMM x DT	0,56***	0,07	8,16	< 0.0001
IMP x DT	0,23***	0,07	3,49	< 0.0001
GRAMM x IM	-0,10	0,07	-1,51	0,13
IMP x IM	-0,16*	0,07	-2,39	0,01
GRAMM x PASS	0,72***	0,07	10,62	< 0.0001
IMP x PASS	1,18***	0,07	17,39	< 0.0001
GRAMM x PRED	-0,16*	0,07	-2,38	0,018
IMP x PRED	0,11.	0,07	1,66	0,10
GRAMM x VDE	-0,33***	0,07	-4,88	< 0.0001
IMP x VDE	-0,56***	0,07	-8,37	< 0.0001
GRAMM x VDI	-0,22***	0,07	-3,29	< 0.0001
IMP x VDI	-1,01***	0,07	-14,86	< 0.0001

Estimates show that Cxn type has indeed a significant impact on the acceptability of the coercion stimuli sentences, with some Cxns receiving ratings significantly higher than the intercept. In other words, IM, VDE and VDI Cxns appear to be highly coercible, i.e. highly flexible in incorporating novel and creative verbs into the general constructional meaning. Conversely, CO, DT and PASS Cxns show significantly lower values, which we interpret as evidence of their lesser flexibility: deviant lexical elements are less easily incorporated into the general constructional meaning, and therefore the creative sentences are perceived as less natural. CMvia, CM and PRED have slightly lower estimates than the mean, but do not reach statistical significance. Hence, Motion and Saying events – as realized in

IM, CM, CMvia and VD – appear to be highly flexible: the two VD Cxns and the IM are the ones that were more easily coerced, while transitive Motion constructions (CM and CMvia) do not differ significantly from the intercept.

We interpret this finding as confirming our hypothesis that coercion resolution – at least in Italian – should be understood not exclusively as a top-down phenomenon (with the Cxn overriding lexical semantics), but rather as a dynamic interaction of lexical and constructional semantics, as recent research has already suggested (Yoon 2013, 2016; Yong 2014). Higher compatibility between coerced verbs and CM, CMvia, IM, VDE, and VDI Cxns is likely not to require great cognitive effort in interpreting the sentence. Coercion verbs for these Cxns include, in fact, all types of manner verbs (Sound Emission, Manner of Motion, Manner of Placing, see Tables 2 and 3):⁷ as we mentioned in Section 1.3, Italian displays various features of Satellite-framed languages, such as the encoding of Manner in (some) verbs.

By contrast, DT, PASS, and CO were judged the least flexible Cxns. That is, these Cxns are much more constrained by the semantics of the verbs that regularly occur in them, causing deviant uses to be perceived as particularly ungrammatical. For instance, the CO Cxn not only occurs with a very limited set of verbs but is also neither productive nor frequent in language use (Barðdal 2013). Therefore, it is highly entrenched and collocation-like, in that its constituents are fixed and always co-occur together. Moreover, the Cxn constrains the direct object to be morphologically related to the verb. When this constraint is not respected, comprehension fails.

DT and PASS are more schematic (see Table 1). For PASS sentences, as we saw above (Table 2), we used intransitive verbs to be coerced as transitive, or pseudo-transitive verbs. However, the semantics of PASS imposes rigid constraints on the lexical elements it allows. These constraints limit both the verbs and the argument roles of the Cxn, and strongly influence the grammaticality of the sentences that violate them. It has been widely suggested in the literature that semantic roles allowed to take the subject slot in the Transitive Cxn follow a hierarchy: *Agent* > *Instrument/Experiencer* > *Patient* > *Source/ Goal* (Dowty 1991: 578). The further to the right a given role is in this hierarchy, the less likely it is to occur as subject in an active clause. The hierarchy applies also to the PASS Cxn, which reverses the perspective by most typically selecting an affected entity (a Patient) as subject. Additionally, the types of verbs that the Cxn allows are subject to strict semantic constraints, as it has been claimed that transitivity too is gradient. The degree of transitivity is determined by the effectiveness with which “an activity is ‘carried over’ or ‘transferred’ from an agent to a patient” (Hopper & Thompson 1980: 251).

7. We thank one anonymous reviewer for pointing this out.

Only prototypical transitives – expressing events of physical or psychological causation – easily passivize (Fried & Östman 2004; Rice 1987; Vazquez-Rozas 2007). In other words, the more transitive a verb – and thus the more asymmetric the argument structure, with a highly agentive Actor that affects a Patient – the more easily it fits into the passive Cxn.

The creative verbs can be somewhat conceptualized as “manner of transfer” verbs. For instance, the sentence *Mio fratello ha sorriso una risposta a Giulia* ‘My brother smiled an answer to Giulia’ can be paraphrased as ‘give an answer by smiling’. These structures are sometimes encountered in literary language, but very seldom in colloquial discourse. Hence, subjects consistently rated DT coercion sentences as significantly less acceptable, probably perceiving them as artificial or poetic, and thus discarding them as non-natural.

Further interesting evidence emerges from the inspection of the grammatical and impossible conditions. In particular, these conditions as well display some internal inter-Cxn variability, as plotted in Figure 6 above. DT and PASS show a significant difference between the grammatical and the other two conditions, which further suggests that coercion was perceived as particularly non-natural. In IM, VDE and VDI – on the contrary – the distance between coercion and grammatical condition is smaller and coercion was rated as drastically opposed to the impossible condition. CM also shows significantly low values for the impossible condition (see Table 5), and coercion sentences closer to the grammatical condition. CMvia and PRED, instead, both show grammatical and coercion (creative) conditions which are closer together, which we interpret as a sign that participants had a harder time discriminating between completely grammatical and deviant structures, rating them with intermediate values. Finally, CO displays values significantly lower than the reference level for all three experimental conditions (see Table 5). The already outlined constraints strongly influenced participants’ ratings – especially in the younger age groups – who did not recognize the Cxn as an existing pattern of Italian.

3.3 Variation between age groups

The sociolinguistic literature has extensively explored the impact of age groups (*cohorts*) on shaping language use (*inter alia* Buchstaller 2006; Cheshire 2005; Moore 2004). There is a general agreement on the fact that younger speakers tend to use language in a more “fluid” manner, and therefore incorporate vernacular forms, diatopically and diastratically marked features,⁸ and generally more

8. Diatopic and diastratic are sociolinguistic terms, used to indicate dimensions of language variation (Cosieriu 1980). Diatopic variation refers to linguistic variation on a geographical

non-standard structures. By early adulthood language becomes “fixed”, and older speakers tend to make use of a more crystallized version of the standard language. Our initial hypothesis, therefore, was that valency coercion phenomena could be affected also by the age variable. A first visual exploration of the data reveals that the distribution of ratings appears to be quite different in each group (see Figure 5); in the adults plot, in fact, we can immediately see that ratings in the coercion condition follow a spread distribution, and a clear polarization in the two other conditions, although with several outliers. That is, it seems older speakers were able to unambiguously discriminate between grammatical and ungrammatical sentences but displayed more variability in judging creative structures. The coercion boxplot, in fact, covers the entire spectrum of the scale, with a tendency towards the lower end. In the other two age groups, the distribution of coercion structures is more “condensed” around the median line. Furthermore, it is clearly visible how the distribution of ratings of the impossible condition in the adolescent group is wider than in the other two groups, overlapping with the coercion condition. This might indicate that the younger group has still not fully perfected their grammatical competence.

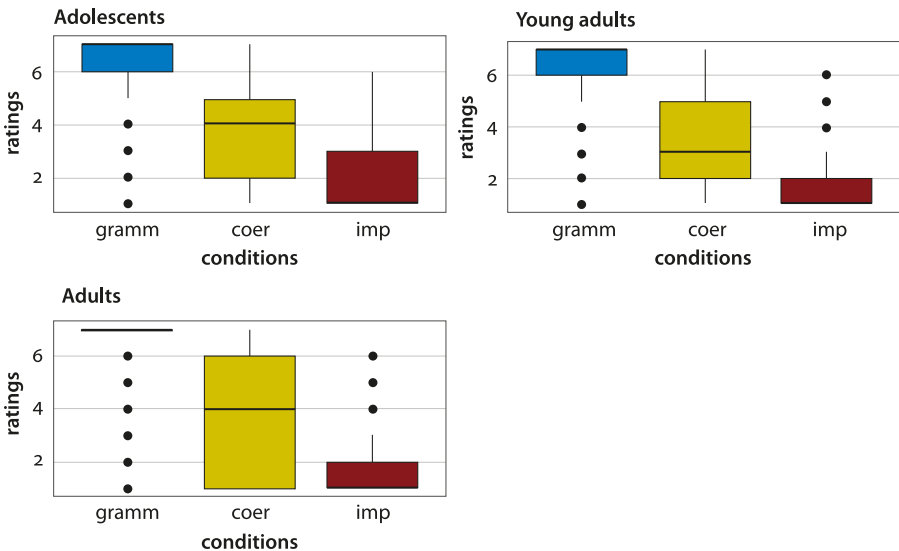


Figure 5. Boxplots of the distribution of ratings in the three conditions in the three age groups

level (e.g. Venetian dialect vs Sicilian dialect); diastatic variation refers to linguistic variation according to the social class or the group the speaker belongs to (e.g. youth language).

To test for statistical significance, we performed a third linear mixed model to compare the effect of age group and experimental condition on participants' responses.⁹ Contrasts were sum coded for the predictor of age group.

$$\text{responses} \sim \text{age group} * \text{condition} + (1 | \text{subject}) + (1 | \text{item})$$

Results show that – contrary to what we expected – the interaction of the two predictors only reaches significance in the grammatical and impossible condition, but that age did not significantly affect coercion recognition (see Table 8).

Table 8. Fixed effect for the model

	Estimate	Std. Error	t value	Pr (> t)
COER	3.64***	0.07	49.2	< 0.0001
GRAMM	2.66***	0.02	109.6	< 0.0001
IMP	-1.78***	0.0	-73.9	< 0.0001
Adolescents	0.02	0.04	0.56	0.57
Young adults	-0.05	0.04	-1.11	0.27
Adults	0.02	0.04	0.55	0.58
GRAMM x Adolescents	-0.26***	0.03	-7.6	< 0.0001
IMP x Adolescents	0.15***	0.03	4.45	< 0.0001
GRAMM x Young adults	0.09**	0.03	2.66	< 0.005
IMP x Young adults	-0.03	0.06	-1.06	0.29
GRAMM x Adults	0.17***	0.03	5.03	< 0.0001
IMP x Adults	-0.12***	0.03	-3.44	0.0001

To understand the effect of Age more fully, we performed pairwise comparisons of each level in the age-group factor within each experimental condition (Length 2019). In Table 9 below, for clarity only relevant interactions for the present analysis, i.e. between age groups within the same experimental condition, are reported. The more fine-grained comparisons suggest that the significant difference across age groups resides in the grammatical and impossible conditions, in particular between adults and adolescents. We interpret these findings as evidence of increased competence in standard language in older speakers, therefore increasing subjects' ability to discern grammatical from ungrammatical. The absence of significant differences between age groups for coercion sentences indicates that

9. $R_{2m} = 0.57$, $R_{2c} = 0.63$

the only systematic source of significant variability in the coercion condition is due to different Cxn type.

Table 9. Emmeans contrasts

	Contrast	estimate	se	z-ratio	p-value
COER	Adults-Adolescents	-0.0006	0.008	-0.07	1.00
COER	Adults- Young adults	0.0075	0.078	0.966	0.98
COER	Adolescents- Young adults	0.08	0.08	0.96	0.98
GRAMM	Adults-Adolescents	0.43***	0.08	5.5	< 0.0001
GRAMM	Adults- Young adults	0.15	0.08	2	0.54
GRAMM	Adolescents- Young adults	-0.26*	0.08	-3.53	0.01
IMP	Adults-Adolescents	-0.27*	0.08	-3.46	0.01
IMP	Adults- Young adults	-0.005	0.08	-0.07	1.00
IMP	Adolescents- Young adults	0.027*	0.08	3.36	0.02

Figure 6 below plots the effects of the model. As it can be seen, grammatical competence increases with age: ratings in the grammatical conditions grow steadily across age groups, and impossible sentences decrease. This tendency accounts for the fact that linguistic competence in standard Italian grows exponentially during later stages of adolescence, hence the significant difference between adolescents and young adults, and the practically non-existent one between younger and older adults.

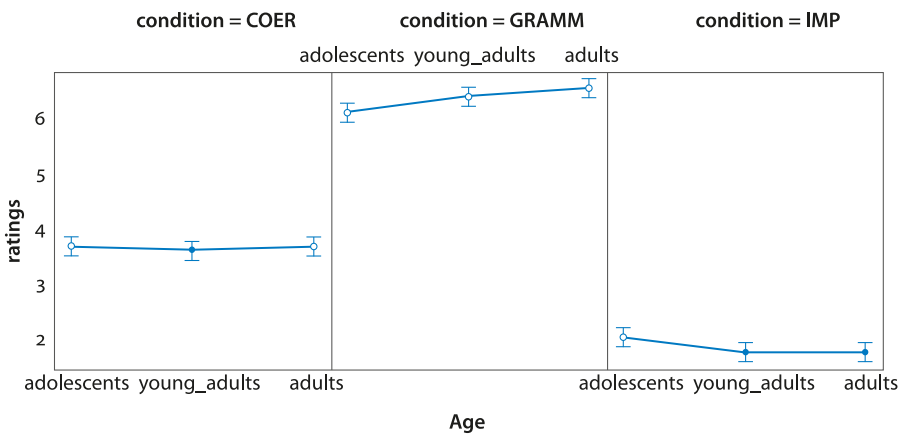


Figure 6. Effect plots of the model

Creative sentences, however, do not show a linear trend, but rather a slightly u- or v-shaped curve, which is more apparent in Figure 7, which plots raw data in the coercion experimental condition. The curve is interestingly comparable to the one shown by phenomena subject to an age-grading pattern, i.e. a pattern of age-specific differences that characterize language considered distinctive of different stages in the life span (Wagner 2012). The age-grading pattern is mainly typical of vernacular and stigmatized linguistic features, and it implies a relationship between age and use of a particular linguistic variety with a high degree of social awareness. Non-prestigious age-graded linguistic features tend to peak during adolescence “when peer group pressure not to conform to society’s norms is greatest” (Holmes 1992: 184), and to decrease during adulthood in favor of more standard varieties (“sociolectal retrenchment”; Tagliamonte 2012). Non-standard varieties may again resurface later in life when work-related social pressures are reduced. Figure 8 represents an idealized distribution of age-grading phenomena in different age groups.

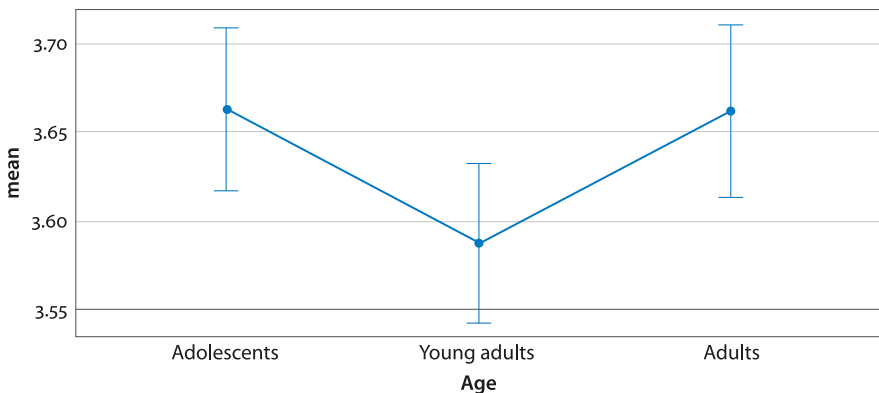


Figure 7. Mean score by age groups in the coercion condition

Although coercion phenomena cannot be characterized as vernacular forms, the similarity between the two patterns is indeed interesting. Accordingly, Italian valency coercion may be influenced by sociolinguistic and dialectological variables.

Standard Italian coexists with more than fifteen primary Italo-Romance dialects (Cerruti & Regis 2014). In many cases, the dialect influences the variety of regional Italian which is locally spoken (Loporcaro 2013). Accordingly, geographical origin and native dialect (and/or regional Italian) could bias speakers towards processing valency coercion structures as if they were vernacular varieties. The similarity of age-grading and valency coercion trends is indeed a thought-provoking parallelism, which should be investigated with more targeted

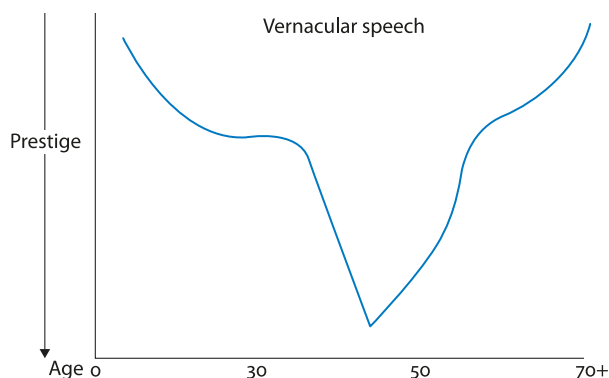


Figure 8. The relationship between frequency of non-prestige varieties and different ages (reproduced from Downes 1984: 191)

experimental designs, so as to place Italian valency coercion phenomena within a sociolinguistic and dialectological context.

4. Conclusions

A significant amount of work in CxG has employed coercion phenomena and constructional flexibility to demonstrate the independent status of Cxns. However, few languages have been investigated outside of English, and no experimental research has been carried out on valency coercion phenomena in Italian yet. We addressed this gap by conducting an experimental study on creative structures in Italian, in the form of an acceptability rating task on nine different Italian Cxns, that we tested on native speakers of different age groups. This design allowed us to test several factors that we assumed were important to get a preliminary idea of the phenomenon: The acceptability of creative coerced structures, the role of age and – most importantly – the influence of the Cxn itself. Results confirmed our research hypotheses: valency coercion was identified as an intermediate level between grammaticality and ungrammaticality, and the degree of coercibility of creative stimuli varied according to Cxn. The role of age, however, was not in evidence for coercion sentences but only for the other two conditions, confirming sociolinguistic findings; at the same time it suggests that the systematic variation in the perceived naturalness of valency coercion phenomena is not due to sociolinguistic causes but to the influence of different Cxns.

The diatopic and sociolinguistic aspect of valency coercion phenomena, as well, was suggested to be relevant – especially in the particular sociolinguistic situation of Italian. In fact, the complex and diversified Italian linguistic landscape

consists of many primary dialects, whose influence on the standard language could affect the processing and the perceived naturalness of (valency) coercion phenomena. Much additional work is needed at the intersection of CxG and sociolinguistics, and many open questions remain on the sociolinguistic status of Italian constructions and coercion. Nonetheless, the evidence presented here indicates that a sociolinguistic perspective could be a valuable approach to adopt in investigating coercion effects in Italian (and possibly in other languages). In this paper we have suggested that the resolution of coercion effects results from the interaction of both top-down and bottom-up processes (i.e. constructional and lexical semantics). In other words, the varying degrees of constructional flexibility may relate both to differences in schematicity and productivity (Barðdal 2013; Zeschel 2012), and to the semantic compatibility between verbs and Cxns (Yoon 2013, 2016). Hence, ongoing research on this topic is considering both types of processes to further investigate Italian valency coercion: both computational modelling of constructions with distributional semantics (Lebani & Lenci 2017; Busso et al. 2018) and psycholinguistic online experiments on semantic compatibility between verb and construction.

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