Object deprofiling in the context of inherently causative verbs: A case study of the semantically similar verbs *build*, *construct*, and *create*[*]

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Abstract

Although there is a substantial body of literature on implicit arguments, only a few works deal with argument omission in the context of highly transitive verbs. The present study is intended to make a contribution to this understudied field. To that purpose, three semantically similar verbs of creation – namely *build*, *construct*, and *create* – were analysed contrastively with respect to complement omission. The analyses show that despite a certain degree of semantic overlap, these verbs differ in their disposition to leave their object argument implicit. The subtle contrasts are described on the basis of frame information, the discourse context, pragmatic/stylistic factors, aspect, and collocations as indicators of selectional preferences. Intransitive uses of the three verbs under consideration are represented as subtypes of the corresponding prototypical transitive variants. These alternants share a subset of syntactic and semantic information, including thematic entailments in the sense of Dowty (1991), which can be split into "mental" as well as "physical" information. The analyses are innovative in that they are largely based on contexts from the Concretely Annotated English Gigaword corpus, which allows users to search for syntactic structures and thus to extract intransitive uses of inherently transitive verbs.

1 Introduction

The argument structures of lexical units can be modified in various ways. For example, it is a well-known fact that arguments can be added to inherently intransitive verbs. Sentences like *Pam sneezed the napkin off the table* illustrate this point. If the argument structure of the verb *sneeze*, which only licenses a subject argument, is syntactically enriched by a direct object and an oblique argument, a caused-motion (or resultative) reading is created (cf. Goldberg 1995:

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29; Boas 2003b: 6). In the reverse case – which is the focus of the present article – an argument that is supposed to be part of a lexical unit's argument structure can be omitted (e. g. *Jane has been baking all afternoon*). Although no such entity is explicitly expressed, it is "intuitively" obvious that a culinary entity was involved in the baking event. While there is a considerable amount of literature dealing with implicit arguments (e. g. Fillmore 1986; Rice 1988; Jacobs 1994; Condoravdi/Gawron 1996; Mauner/Koenig 2000; Lambrecht/Lemoine 2005; Lyngfelt 2012; Boas 2017; Schenk 2019; Chaves/Kay/Michaelis 2021), only little attention has been paid to object omission in the context of inherently causative verbs.[1] Notable exceptions are Goldberg (2001, 2006a), who discusses various conditions under which causative verbs like *kill*, *cut*, or *dazzle* allow for object omission, and Lemmens (1998, 2006), who provides analyses of verbs of killing and of the verb *break*. Moreover, since previous studies performed for English are based on individual examples rather than on corpus data, verb-specific behaviour in concrete discourse contexts as well as the distribution of types of null instantiation across semantically similar verbs tend to be neglected.[2]

The present article is intended as a contribution to fill these gaps. To that purpose, a variety of sentences from two large electronic corpora in which the direct object of three creation verbs – namely *build*, *construct*, and *create* – is contextually null-instantiated, will be presented and discussed. Although these verbs have in common that they may leave their complement (locally) unexpressed under certain pragmatic, stylistic, or constructional conditions, it will be shown that they differ with respect to their inherent predisposition to allow for object omission.[3] The three verbs under consideration were selected because – in spite of their semantic similarity – they display slightly different degrees of specificity. Most occurrences of null instantiation are attested for *build*, whose implicit argument is interpreted as "buildings" by default. *Construct* contrasts with *build* in that it hardly allows for null instantiation. Inhibiting factors are the verb's inherent telicity and its lower frequency of occurrence. Moreover, an accumulation of manner adverbs (e. g. *cleverly*, *meticulously*, *artfully*) in the context of this verb indicates that the activity it denotes is more specific and focused on the quality of the result. Since the result is a salient discourse entity, it has to be syntactically realized.[4] As compared to *build* and *construct*, the verb *create* displays a higher degree of abstraction. It allows for null instantiation in contexts which evoke an aesthetic or religious setting. In these contexts, it merely requires its omitted complement to be of the very general semantic type ARTIFACT. The low discourse relevance of the result may shift the focus of attention towards the involvement of the Proto-Agent in the creative activity. The usage-based, contrastive analyses take the interaction of

[1] A causative verb denotes a situation in which an Agent causes a change of state in another participant. While causative verbs are typically transitive, transitive verbs need not be causative. The difference between transitive and causative verbs is exemplified by Shibatani (1976) for *kick* and *melt*. While *John kicked the ice but nothing happened to it* is well-formed because the transitive, non-causative verb *kick* does not entail a change of state for the referent of its complement, a sentence like **John melted the ice but nothing happened to it* involves a contradiction because the activity performed by John must have had some effect on the referent of *the ice*.

[2] Again, Lemmens (1998, 2006) is an exception because his studies are corpus-driven.

[3] Complements are understood here to be "locally unexpressed" if they are not realized in direct-object position, but in the preceding discourse context (DNI); cf. for example Schenk (2019: 87).

[4] Likewise, verbs which incorporate a manner component (e. g. *devour*, *gobble*, *ingest* vs. *eat*) tend to eschew complement omission; cf. Rice (1988: 204) on this point.

frame information, the discourse context, pragmatic/stylistic factors, aspect, selectional preferences, and the verbs' overall token frequency in a large electronic corpus into consideration. These criteria have proven efficient in research on implicit arguments (e. g. Rice 1988; Resnik 1993; Lambrecht/Lemoine 2005; Goldberg 2001, 2006a), but it is only their interaction that helps to reveal the motivation behind complement omission as well as possible effects. The inherent transitivity of the three verbs will be preserved by postulating prototypical transitive variants of which the detransitivized variants are subtypes. Both variants share a subset of syntactic and semantic information, including thematic entailments in the sense of Dowty (1991).

Following the pertinent literature (e. g. Fillmore 1986; Lambrecht/Lemoine 2005; Lyngfelt 2012; Ruppenhofer et al. 2016), a distinction is made between four basic types of null instantiation, namely indefinite, definite, generic, and constructional. As far as Indefinite Null Instantiation (INI) is concerned, no referent for the implicit argument is provided in the context. Since the argument is not eliminated, but remains conceptually present, it is useful to adopt the notion of "deprofiled object" from Goldberg (2006a). As far as Definite Null Instantiation (DNI) is concerned, the referent of the implicit argument, which may be a specific discourse entity or a situation (cf. Lambrecht/Lemoine 2005: 20), is retrievable from the discourse context. Since the implicit argument refers to something "given" in the context, it receives a definite interpretation. If object deprofiling results in a generic or habitual reading, we are dealing with Generic Null Instantiation (GNI). The fourth type, Constructional Null Instantiation (CNI), is at issue if the implicit argument is structurally licensed. Classical examples of CNI are imperatives and passive sentences, which leave the Agent unexpressed. According to Ruppenhofer et al. (2016: 30), null instantiation licensed by a construction is either definite or indefinite. The four types of null instantiation are exemplified in (1a–d), respectively.[5]

(1) a. Thirty years ago residents cleared the woods next to the old cemetery and began **building**. (INI)
b. We will use <u>your server version</u>. Thank you for **creating**! (DNI)
c. "We say in this country that the first generation **builds**, the second generation **maintains** and the third generation **destroys**," Barbera says. (GNI)
d. **Play** and **construct**! (CNI)

The approach to null instantiation presented in this article is highly innovative because a large portion of the data was automatically extracted from the Concretely Annotated English Gigaword – a corpus which allows users to formulate search patterns over syntactic trees and thus to find examples in context in which transitive verbs are detransitivized.[6] If necessary, the data from Gigaword were supplemented by manually selected examples from the English Web 2021 (enTenTen21) provided by Sketch Engine.

The article is structured as follows: In section 2, some theoretical assumptions will be outlined, and the methods for data collection will be presented in section 3. Sections 4 – 6 are concerned with the contrastive analyses of *build*, *create*, and *construct* with respect to null instantiation. Section 7 deals with the question whether collocations as indicators of selectional preferences

[5] Throughout this article, transitive verbs displaying null instantiation are represented in boldface. If a referent for the implicit argument is available, it is highlighted by underlining.

[6] For reasons of space, this corpus is referred to as "Gigaword" in the remainder of this study.

reflect the behaviour of the three verbs with respect to object omission at least to some degree. Two methods were employed for the analysis of collocations – a simple one using Word Sketches from Sketch Engine and a more complex one which is based on a vector model. The combination of the two methods is motivated by the fact that Word Sketches display concrete figures for frequencies of co-occurrence and collocational strength, whereas vector representations allow us to visualize and compare the distribution of the three verbs and their collocates in the semantic space. The article ends with a conclusion and outlook in section 8. Additionally, an Appendix which represents the vector space shared by *build*, *construct*, and *create* is part of this study.

2 Theoretical assumptions

In order to obtain a semantically coherent set of data, it was made sure that the detransitivized creation verbs to be analysed belong to the same or to similar frames in the sense of FrameNet – a lexicographic database initiated by Charles Fillmore and colleagues. According to Fillmore et al. (2002), frames can be conceived of as "script-like structure[s] of inferences, which are linked to the meanings of linguistic units (lexical items)." While *build* and *construct* evoke the Building frame, the verb *create* belongs to the Intentionally_create frame, which is superordinate to the Building frame. According to FrameNet, these frames are defined as follows:

(2) Building: This [semantic; HB] frame describes assembly or construction actions, where an Agent joins Components together to form a Created_entity, which is profiled, and hence the object of the verb, e. g. Jack built a house out of bricks.

(3) Intentionally_create: The Creator creates a new entity, the Created_entity, possibly out of Components, e. g. In 1576, Pope Gregory XIII created the Macau diocese, covering all of China and Japan.

The participants involved in a frame are referred to as Frame Elements (FEs). Unlike peripheral FEs (e. g. Manner, Time, Place), core FEs (e. g. the CREATOR and the CREATED_ENTITY in (3)) are semantic arguments which constitute necessary components of a frame. As pointed out by Fillmore (1977), these components are mentally present even if not all of them are linguistically expressed. This point is important not only for object deprofiling, but for null instantiation of arguments in general. A further advantage of Frame Semantics is that it accounts for polysemy because a lexical unit may be assigned to more than one frame. For example, the data collected for this study include many ergative uses of the verb *build*, as in *Indonesian volcano rumbles as lava pressure builds* (Gigaword). In its ergative reading, *build* behaves like *increase*, *diminish*, or *fluctuate* in that it evokes the Change_position_on_a_scale frame. Since ergative readings do not involve object profiling, they are irrelevant for the contrastive analyses.

Moreover, for each lexical unit, FrameNet provides a lexical entry which specifies not only the potential syntactic realizations of the individual FEs, but also a set of Frame Element Configurations (FECs) and valence patterns in which the frame-evoking lexical units may occur. Following Boas (e. g. 2003a, 2003b, 2010, 2017, 2021), pairings of FECs and valence patterns are used in this study to establish so-called "mini-constructions", i. e. verb-specific constructions which are more fine-grained than Goldberg's (e. g. 1995, 2006b, 2019) Argument Structure Constructions and thus lend themselves to contrastive analyses. Apart from Frame Elements and valence patterns, further important components of mini-constructions are thematic roles,

which display a higher level of abstraction than the Frame Elements that instantiate them (Boas 2010: 61; Boas 2017: 56). For example, the situation-specific Frame Elements CREATOR and CREATED_ENTITY of the Intentionally_create frame represented in (3) correspond with the grammatically relevant and hence more abstract roles Agent and Patient, which link the participants of transitive events to the grammatical functions Subject and Object, respectively. A more detailed account of thematic roles is provided below.

A significant advantage of the frame-based, constructional approach chosen for this article is that Frame Elements and thematic roles can be either profiled or deprofiled. While profiled participants are syntactically realized and "function as focal points within the scene" (Goldberg 1995: 44), deprofiled participants are conceptually present but remain unexpressed. By convention, profiled participants are represented in boldface, whereas optional and hence deprofiled participants are represented in normal font style in Construction Grammar. The following mini-constructions postulated by Boas (2003a) for the *with*-variant and the locative variant of the verb *load* illustrate this convention. [7]

(4)	a.	load $_{\text{motion-filling frame}}$:	**AGENT**	**GOAL**	THEME
			NP.Ext	NP.Obj	PP_with.Comp
	b.	load $_{\text{motion-placing frame}}$:	**AGENT**	**THEME**	**GOAL**
			NP.Ext	NP.Obj	PP_onto.Comp

While the Theme role of the holistic *with*-variant, which evokes the motion-filling frame (4a), can be left unexpressed (e. g. *Joe loaded the truck*), each role of the *onto*-variant, which evokes the motion-placing frame (4b), has to be syntactically realized. Thus, a sentence like **Joe loaded hay* will be ruled out.

In the present study, thematic roles are interpreted in the sense of Dowty (1991: 572). Dowty reduces the set of thematic roles to two proto-roles, a Proto-Agent and a Proto-Patient, each of which is defined over a set of verb-specific entailments – as illustrated in (5) and (6). Entailments are relevant not only for the syntactic distribution of Frame Elements, but also reveal that agenthood and patienthood are a matter of degree.

(5) Contributing properties for the Agent Proto-Role:
   a. volitional involvement in the event or state
   b. sentience (and/or perception)
   c. causing an event or change of state in another participant
   d. movement (relative to the position of another participant)
   e. exists independently of the event named by the verb

(6) Contributing properties for the Patient Proto-Role:
   a. undergoes change of state
   b. incremental theme
   c. causally affected by another participant

[7] The terms *profile* and *profiling* were introduced by Langacker (e. g. 1987, 1988). A profile is always defined in relation to a base. More specifically, it gives relative prominence to a particular facet or subpart of the base. One of the examples provided by Langacker (1988: 59f) is the concept denoted by the noun *hypotenuse*, which cannot be defined independently of the right-angled triangle that functions as its base. According to Langacker (1988: 60), "[a]ll expressions, regardless of complexity, are characterized semantically by the imposition of a profile on a base."

d. stationary relative to movement of another participant
e. does not exist independently of the event, or not at all

According to the Argument Selection Principle (Dowty 1991: 576), the argument bearing the greatest number of Proto-Agent entailments will be realized as the subject and the argument bearing the greatest number of Proto-Patient entailments will surface as the direct object in syntax. In the present study, the first Proto-Agent entailment <volition> is replaced by the entailment <control> proposed by Primus (1999: 36f) and Engelberg (2000: 211), which indicates that the course and duration of an event underlie the Agent's responsibility. Dowty's entailment is not uncontroversial because human action is not necessarily driven by volition (cf. Engelberg 2000: 198–210 for a detailed discussion). Since *build*, *construct* and *create* are inherently transitive, each of them is first of all assigned a transitive mini-construction which has the character of a prototype. Mini-constructions of detransitivized variants – if available – are subtypes of the transitive constructions because they only share a subset of information with the prototype. For instance, while the transitive mini-construction displays the whole range of Proto-Agent and Proto-Patient entailments, detransitivized variants only share Proto-Agent entailments, while the remaining entailments are deprofiled.[8]

Moreover, if we compare the set of Proto-Patient entailments with that of Proto-Agent entailments, it becomes obvious that apart from <independent existence> the properties that define the prototypical Agent with respect to the activity denoted by a verb are embodied, or, more precisely, grounded in bodily and mental experience (cf. e. g. Gallese/Lakoff 2005; Bergen 2012; Barsalou 2020). While <control>, <sentience> (with respect to the event or state denoted by the verb) and <perception> encode mental and perceptual involvement in an event, <movement> and <causation> signal physical activity on the part of the Proto-Agent, which presupposes mental activity and perception if this participant is animate. In sections 4.3.1 and 6.2, it will be shown that a deprofiled Proto-Patient of causative transitive verbs may correlate with a reduced set of Proto-Agent entailments. This set only profiles those agent-defining properties that are contextually activated, while the remaining entailments are backgrounded. This correlate of object deprofiling allows us to define more precisely the quality of a Proto-Agent's involvement in events displaying reduced transitivity. Depending on the situation depicted in a given context, the Proto-Agent's involvement may tend towards the mental or the physical "sector" of the set of Proto-Agent entailments. For example, if an event is hypothetical rather than construed as actually occurring (e. g. *Then it will be very clear where we build and where we don't build*; Gigaword), the Proto-Agent's involvement does not (yet) go beyond a mental simulation of a prospective building activity, i. e. there is neither physical movement nor causation on the part of this participant. Similarly, verbs of creation may contextually emphasize

[8] Cognitive evidence for the prototype status of the transitive variant comes from Langacker's "canonical event model", which represents "the normal observation of a prototypical action" (1987: 286) and which is based on two further models, namely the "stage model" and the "billiard-ball model". The stage model compares our experience of events to watching a play at the theatre. The viewer's attention is focussed on a particular setting in which a number of participants move about, manipulate objects, and interact with each other like actors on a stage. The billiard-ball model metaphorically describes a participant's acting on another participant and the impact this activity may have on further participants as a transfer of energy, which takes place in space and time. The participants typically involved in this 'action chain' (Langacker 1987: 283), i. e. the Agent, Patient, Instrument etc. in traditional terminology, have the status of pre-linguistic archetypes in Langacker's theory.

the Proto-Agent's mental involvement in a creative process, thus providing this participant with the quality of an Experiencer (e. g. *He doesn't refer in his music to being arrested, Simmons said, but added that it "puts me in a frame of mind, it evokes certain emotions that help me create"*; Gigaword). By contrast, <movement> as a physical entailment is contextually foregrounded for example if fluctuation is at issue (e. g. *I can see time take shape. It builds and it destroys in a constant rise and fall like an ocean tide*; Gigaword). Since the activities denoted by causative verbs in context manifest themselves not only in the Proto-Patient's change of state, but also in the Proto-Agent's intention, state of mind, and performance, it is necessary to make the distinction between mental and physical entailments which is inherent in Dowty's (1991) theory of proto-roles explicit. Significantly, deprofiled Proto-Agent entailments – like deprofiled Proto-Patient entailments – remain implied, so that detransitivized causative verbs can be distinguished from genuinely intransitive verbs like verbs of motion.

3 Methods

Obtaining data for usage-based analyses of implicit arguments is not a trivial matter because conventional corpora do not support the automatic extraction of intransitive uses of prototypically transitive verbs. In order to build a representative dataset which goes beyond the examples from the literature, a highly innovative method was applied by using the Concretely Annotated English Gigaword corpus developed by Johns Hopkins University's Human Language Technology Center of Excellence (JHU). This corpus was developed in order to unify and make accessible state-of-the-art methods applied to process and annotate large amounts of data, which has always been problematic for various reasons (cf. Ferraro et al. 2014). Gigaword is annotated in the Penn Treebank style and contains 4.5 billion words from 10 million English newswire articles, from 1994 to 2010. The text data come from seven international sources such as the New York Times Newswire Service or the Xinhua News Agency, English Service. The data are packaged into 1,010 files which are sorted by source and by month. A link to the website of the Linguistic Data Consortium (LDC), which lists all the international sources of English newswire included in the English Gigaword Fifth Edition, is provided in the references.

A peculiarity of this very large corpus is that it allows users to state search patterns over syntactic structures and thus to find examples in context in which transitive verbs are used intransitively. In order to search the corpus for intransitive uses of transitive verbs, the software tool Tgrep2 which runs on Unix was used. Results were obtained by restricting the search to sentences (S) in which the only daughter of the VP is a word-form of the verb in question, e. g. '-tw "S < (VP <: (/^V/ < /^build/))"'.[9] Thus, contexts in which the verb is followed by a complement were automatically excluded. However, since Tgrep2 only searches one file per search query, it was necessary to extend the search by using the programming language Python, which is capable of accessing the whole corpus.

Multiple occurrences of the same sentence and false positives such as ergative uses of *build* (e. g. *The energy on the dance floor builds*) were removed from the results. The most time-consuming task was to filter out a multitude of relative clauses that lack a relative pronoun (e. g. *I really like the texture he creates*). However, at least a subset of these data could be eliminated

[9] "-tw" encodes the option to print trees like sentences, with no structural information.

semi-automatically on the basis of regular expressions and wildcards in Notepad++. Relative clauses are irrelevant for the present study because they are structurally licensed rather than verb-specific. Thus, they do not help to make predictions regarding the predisposition of individual verbs for null instantiation.

As far as the intransitive use of *build* is concerned, the Gigaword search described above yielded 247 results. By contrast, only 2 hits were obtained for *construct* and 62 for *create*. Given these results, additional searches were performed for these two verbs in the English Web 2021 (enTenTen21). Methodologically, concordances were generated for these two verbs, and the results were restricted to the right context, so that only sentence-final occurrences were displayed. In order to obtain a representative supplement to the Gigaword results, the first 500 concordances displayed by enTenTen21 were manually searched. For reasons of space, only three examples are provided for each phenomenon discussed in this article. However, all sentences relevant to this study are made available on the Zenodo repository (cf. Baeskow 2025b).

4 Object deprofiling attested for *build*

4.1 Indefinite Null Instantiation

In the sentences that serve as a dataset for this study, the verb *build* – like *construct* to be dealt with in section 5 – evokes the Building Frame introduced in section 2. Since the CREATED_ENTITY (i. e. the Proto-Patient at a higher level of abstraction) of the Building frame is generally profiled, contexts in which this participant is not syntactically realized are of particular interest. Of the 247 sentences automatically collected for the detransitivized variant of the verb *build*, 145 display Indefinite Null Instantiation (INI). Moreover, 136 of the 145 sentences displaying INI prompt a default reading which is exemplified below.

(7) a. Thirty years ago residents cleared the woods next to the old cemetery and began **building**.
b. "This village is great and will only get better as more people **build** and the community becomes stronger," said Gary Trimarchi […]
c. And as they **build**, "the Germans are destined to weigh pride and assertiveness against the competing claim of responsibility for the past."

Each of these sentences implies that the concrete or hypothetical activities involve houses and other buildings rather than, say, cars or computers. Moreover, as observed by Rice (1988: 204), inferred arguments are neither too schematic nor too specific, but have the status of basic-level objects in the sense of Prototype Theory developed by Rosch and colleagues (e. g. Rosch et al. 1976). According to these authors, objects are categorized at different levels of abstraction – namely a superordinate level (e. g. FURNITURE), a basic level (e. g. *chair*), and a subordinate level (e. g. *kitchen chair*, *living room chair*). Transferred to the intransitive use of the verb *smoke* (e. g. *John smokes* ∅) Rice ascribes the interpretation of the indefinitely null instantiated argument as 'cigarettes' (rather than **Marlboros*, **a pipe*, or *SMOKING MATERIALS) to a prototypicality effect. While the NP *Marlboros* is ruled out because of its subordinate-level status, SMOKING MATERIALS is too schematic to fill in the missing information. Although Resnik (1993: 95f) basically adheres to this proposal, he argues that the *label* for a super-ordinate category such as SMOKING MATERIALS is ruled out by conversational principles (cf. Grice 1975) rather

than by incompatibility with the verb's selectional behaviour.[10] Resnik (1993: 96) concludes "that indefinite objects can only be omitted when the intended inferences about them can be captured at an appropriate 'medium' level of abstraction." In (7a–c), the implied participant is of the semantic type BUILDING, which constitutes a subtype of the more general type ARTIFACT assigned to the CREATED_ENTITY of the Building frame by FrameNet. As compared to the more schematic type ARTIFACT and concrete instantiations such as *bungalow*, *cottage*, *villa*, or *hut*, the type BUILDING is of medium specificity and subsumes houses, churches, factories, schools, etc. This interpretation is also compatible with Aarts/Calbert's (1979: 23, 25) classification according to which ARTIFACT is a higher-level primary (HPRIM) feature which comprises "concepts referring to any object or substance made by human agency", whereas BUILDING is a lower-level primary (LPRIM) feature which captures a noun's distinctive meaning.

4.2 Definite Null Instantiation

The dataset generated for this study also includes 60 sentences in which the verb *build* displays Definite Null Instantiation (DNI). In this case, a referent for the implicit argument is retrievable from the preceding discourse context, as shown in (8). Considering the genre to which most of the Gigaword contexts belong, namely newswire articles, the availability of a discourse referent for a definitely null-instantiated object is one of the factors that contribute to the cohesion of a text. According to de Beaugrande/Dressler (1981), the notion of cohesion comprises all the functions which can be used to signal grammatical dependencies between surface elements, including relations of reference.

(8) a. "When we get to the point where the global market settles down and we bring pieces together to finance the stadium, then we can again start **building**," Hicks said in an interview with The Associated Press this week.
b. He and other veterans said when they asked about the memorial, Oakdale would stonewall them or say they needed more plot contracts to begin **building**.
c. Something important is afoot on the topic of Florida's prisons. A growing group of prominent Floridians is questioning whether we can just keep building more of them. […] They are among the signers of a document titled, "An Open Letter to the Governor, Legislature and People of Florida," urging the state to do more than just **build**.

In (8a) and (8b), there is a discourse referent which precedes the verb in the sentence and functions as an antecedent. In (8c), by contrast, there is no direct anaphoric relation because the intervening passage extends the distance between the implicit argument of *build* and the NP *prisons*, which is updated by the pronoun *them* in the second sentence. Nevertheless, this sentence displays DNI, too, because the interpretation of the implicit argument is not arbitrary either. Since the entities to which the implicit argument of *build* refers – namely *prisons* – are introduced earlier in the text, they are textually accessible. According to Lambrecht (1994: 110), a textually accessible referent is "a previously active referent that became deactivated by intervening discourse." Like anaphoric relations, this form of co-reference is expected here because in newswire articles such as those provided by Gigaword, the referents of deprofiled objects are frequently part of the discourse topic, i. e. the texts are *about* the construction of the entities in the sense of van Dijk (1977: 56). Thus, the discourse entities introduced early in the

[10] Selectional preferences are discussed in section 7.

text or even in the headline (e. g. *Less Crime is Better than more Prisons* in (8c)) are salient enough to be reactivated by the reader. Since the referents of the implicit arguments in (8) are specific discourse entities which are retrievable from the context, these examples are instances of Topical DNI (cf. Lambrecht/Lemoine 2005: 32).

4.3 Factors that motivate object deprofiling

4.3.1 Aspectual considerations

It has been observed in the literature that null instantiation – especially Indefinite Null Instantiation – has an effect on the *aktionsart* of transitive verbs. According to García Velasco/Portero Muños (2002: 4), the absence of the direct object changes the accomplishment reading of a transitive verb into an activity reading. Similarly, Lambrecht/Lemoine (2005: 20) point out that "a sentence involving INI is always construed as describing an aspectually unbounded situation (an atelic event)."[11] In Gigaword, this aspectual property of verbs displaying INI is reflected by the frequent intransitive use of *build* to refer to hypothetical or future building activities which have not yet been initiated. Recurrent contexts are for example those that deal with building in regions at risk of natural disasters (9a), urban planning (9b), and West Bank settlements (9c).

(9) a. A well-designed program – one that priced insurance in a way that encouraged homeowners to think twice about **where they build** and local governments to think twice about their zoning policies – could mitigate the so-called "moral hazard" of encouraging people to make riskier choices than they otherwise would.
b. "In the past, we've gone on our way building without really thinking that we're wasting a precious asset, which is the little rain we get," Nahai said. "We're re-imagining **the way we build**."
c. "What I propose is that we reach an agreement with the Palestinians today over the principle of settlement blocs under Israeli sovereignty and in return an exchange of territory," he added. "Then it will be very clear **where we build** and **where we don't build**."

As indicated in section 2, the data collected for this study suggest that object deprofiling may give more weight to particular Proto-Agent entailments. What the examples in (9) have in common is that they do not describe concrete building events going on in the extra-linguistic world and that no physical activity is entailed for the Proto-Agent. From a cognitive point of view, we may argue that these contexts display simulations of building events, i. e. "mental experiences of perception and action in the absence of their external manifestation." (Bergen 2012: 14) Support for the hypothesis that only the mental sector of Proto-Agent entailments may be contextually foregrounded comes from neuro-scientific experiments which revealed that the simulation (or imagination) of activities partially activates the same brain areas as the actual performance (cf. for example Gallese/Lakoff 2005; Barsalou 2008; Glenberg/Gallese 2012). For instance, if the activity of grasping an object is simulated, many of the same neurons that fire during actual grasping are also involved in the purely mental process although no actual movement occurs, and the object remains unaffected. As explained by Debarnot et al. (2014: 6), "[m]otor imagery is a dynamic state during which one simulates an action mentally without any

[11] A more fine-grained distinction between (a)telicity and (un)boundedness will be drawn in section 5.2.

concomitant body movement." Neuro-scientific insights regarding this phenomenon helped researchers from different disciplines to obtain a deeper understanding of certain mental processes. For example, While Debarnot et al. (2014) highlight the relevance of simulation for the acquisition and perfection of skills (e. g. in sports), Coëgnarts (2017) shows that embodied simulation processes in the brain enable the viewer to understand the (metaphorically encoded) content of a film and to identify himself or herself with the characters, their mental states, and their goals. Given these observations, it is plausible to differentiate between concrete and simulated action and to conclude that only mental Proto-Agent entailments are active (and hence profiled) in simulated action, which also comprises hypothetical events or plans for future events. Like concrete events, these simulations require sentience, perception and control on the part of the Proto-Agent. In (9), human control extends over non-core components such as the location where building is to take place (cf. (9a), (9c)) and the manner of building (cf. (9b)). Moreover, like concrete events, simulations also require the Proto-Agent to exist independently of the event. Thus, the corresponding "mental" entailments <control>, <sentience>, and <perception>, which are located at the interface between semantics and cognition, as well as the entailment <independent existence> are contextually profiled. The entailments <causation> and <movement> – which encode physical activity and which significantly contribute to the definition of the Proto-Agent in the causative-transitive reading of *build* – are also implied but contextually backgrounded.[12] This constellation is represented in Figure 2, which is a context-dependent variant of the prototypical transitive mini-construction in Figure 1.

	NP.Ext	NP.Obj
	Proto-Agent	**Proto-Patient**
build *building-frame*:	**BUILDER**	**BUILDING**
	control	**change of state**
	sentience + perception	**incremental theme**
	causation	**causally affected**
	movement	**stationary**
	independent existence	**existence not independent of event**

Figure 1: Mini-construction for the causative transitive variant of the verb *build* (prototype)

	NP.Ext	--
	Proto-Agent	Proto-Patient
build *building-frame*:	**BUILDER**	BUILDING
	control	change of state
	sentience + perception	incremental theme
	causation	causally affected
	movement	stationary
	independent existence	existence not independent of event

Figure 2: Mini-construction representing the simulation of a building activity (less central variant)

[12] The aspect of simulation also plays an important role in the interpretation of (innovative) denominal conversion verbs (cf. Baeskow 2022a, 2022b).

While *build* in its canonical transitive reading implies the fully-fledged sets of Proto-Agent and Proto-Patient entailments for its arguments (cf. Dowty 1991: 572), the detransitivized variant in Figure 2 only shares the profiled Frame Element BUILDER and four profiled Proto-Agent entailments with the prototype. These pieces of profiled information show that there is some degree of resemblance between the two mini-constructions. Syntactically, the Proto-Agent of both mini-constructions is linked with the phrase type NP and the grammatical function "Ext", the latter of which indicates that subjects are external arguments (cf. Fillmore/Johnson/Petruck 2003: 237f). The Proto-Patient, by contrast, is realized as an object-NP only in the verb's transitive reading. In Figure 2, no syntactic realization occurs because the Proto-Patient is contextually backgrounded. Since the detransitivized variant shares a subset of properties with the prototypical transitive variant, the mini-construction represented in Figure 2 can be considered a subtype of the one represented in Figure 1.

4.3.2 Pragmatic and stylistic motivation for complement omission

Given the fact that argument omission is a cross-linguistic phenomenon which even occurs in languages that usually require the syntactic realization of relevant arguments, Goldberg (2006b: 196) supports the view "that the underlying motivation for the expression of arguments is at root pragmatic". Nevertheless, she relativizes the claim made by Rice (1988: 206) that the pragmatic focus is on the activity itself in many contexts which allow for null instantiation. Taking information structure into consideration, Goldberg (2001, 2006a) argues that the activity denoted by a (typically causative) verb can only be particularly emphasized if the omitted argument is neither topical nor focal (i. e. non-predictable) in the discourse. This constraint is encoded in her principle of Omission under Low Discourse Prominence. Construals which give special emphasis to activities comprise Repetition (e. g. *Pat gave and gave but Chris just took and took*), Generic Action (e. g. *Owls only kill at night*), Narrow Focus (e. g. *She picked up her carving knife and began to chop*), Strong Affective Stance (e. g. *Why would they give this creep a light prison term!? He murdered!*), and Contrastive Focus (e. g. *She stole but she could not rob*). As far as the verb *build* is concerned, Gigaword provides instances of Repetition (cf. (10)) and Generic Action (cf. (11)).

(10) a. Bill Allayaud, state director of the Sierra Club, said the governor appears to be retreating from campaign promises to champion "smart growth" – which calls for building infill projects in urban areas and near transit systems instead of gobbling up green space. […] "Their emphasis remains, from the governor on down, **to build**, **build**, **build**.

b. It is the essence of the place: the topography, the vegetation, the weather, the winds, one ecosystem in balance with itself. The only difficulty is – us. We aren't herders; we aren't hunters or gatherers. We **build**. We **build** and we **build** and we **build**.

c. "I also know the importuning of developers to **build**, **build**, **build**."

(11) a. There are genetic homologies between us and the other species that **build**, no matter how distant from us they seem," Hersey writes. "Science writers are always calling the genome a blueprint; now I will call a blueprint a genome."

b. "We say in this country that the first generation **builds**, the second generation **maintains** and the third generation **destroys**," Barbera says.

c. "These days we don't have any development plans. We just **build**."

In each of these sentences, special emphasis is placed on the building activity itself, while the created objects are contextually irrelevant. In (10), the repetition of the verb not only encodes the continuous aspect, but also conveys the impression of excessive building. Since excessive building activities tend to be associated with negative consequences like decrease of green space (as in (10a)) or loss of land (in other Gigaword examples), repetition may contextually provide the verb with a pejorative connotation.

In (11), we are dealing with instances of Generic Null Instantiation (GNI), which is attested for 42 out of the 247 sentences from Gigaword. As far as this type of null instantiation is concerned, the verb's implicit object argument is always indefinite.[13] As pointed out by Goldberg (2001: 518), the activities referred to in generic contexts are characteristic of the subject arguments. This finding is compatible with the observation that GNI also surfaces in mottos or slogans which highlight the activities by which certain communities define themselves – as in (12).

(12) a. "We **build**, we **fight**," goes the Seabee motto.
b. They all wore white headscarves and lime-green vests emblazoned with a pair of fists and the slogan "One hand **builds**, the other hand **fights**."
c. He called his leprosy shelter Anandwan, or "forest of joy," and chose as its motto, "Charity **destroys**, work **builds**."

Interestingly, the generic contexts in which the detransitivized verb *build* occurs tend to display parallelisms, i. e. structures which are repeated and filled with new elements (de Beaugrande/ Dressler 1981: 51). As shown in (12c) and confirmed by further sentences from Gigaword (e. g. those in (13)), these structures typically though not necessarily involve antonyms – especially the collocates *build* and *destroy* – and thus give rise to an antithesis.

(13) a. "While our government **builds**, the armed opposition **destroys** and we have been in this struggle: **build** and **destroy**," he said
b. "You **build**, we **burn**," shouted some 200 protesters outside the Siam City hotel who insisted that the government's 15-year draft energy plan – which includes a proposal for nuclear power plants – be stopped.
c. The falls are just as impressive, but the experience isn't. If I speed up those 30 years in my head like time-lapse photography, I can see time take shape. It **builds** and it **destroys** in a constant rise and fall like an ocean tide.

Examples like these show that parallelisms create iconicity, i. e. their meaning or message is mirrored by their formal arrangement. As pointed out by Turner (1998: 51), iconicity is one of the most effective tools of persuasion. Referring to insights of the rhetorician Kenneth Burke, he points out that once recognized, formal patterns like those involving oppositions (e. g. "*we* do *this*, but *they* on the other hand do *that*" or "*we* stay *here*; but *they* go *there*") invite the reader or hearer to "participate" in the symmetric construal and to ultimately consent to its content. "Formally, you will find yourself swinging along with the succession of antitheses, even though you may not agree with the proposition that is being presented in this form." (Turner 1998: 51) This kind of "collaborative expectancy" is most obvious in political contexts such as those in

[13] This generalization does not hold for an omitted subject argument, which – depending on the context – receives either a definite or an indefinite interpretation, e. g. *It is nice playing golf in the rain*. Although this is a generic statement about playing golf, there may be a bias towards salient referents if it is uttered in a concrete situation of playing golf (cf. Lyngfelt 2012: 13).

(13a) and (13b). In example (13c), which depicts the impact of building activities on a region in North Carolina, the iconicity of the parallelism (*It builds and it destroys*) is reinforced by comparing the creative and destructive force of time to the cycle of the tides. Since time is an abstract concept, only the physical entailment <movement> is being profiled in this special context.

Since parallelism (or symmetry) strongly relies on the iconic mapping of form to meaning, it might be argued that the omission of the object argument is constructionally licensed and merely constitutes a case of Constructional Null Instantiation (CNI) or an instance of Goldberg's (2006a: 232) more general Deprofiled Object Construction. It should be noted, however, that *build* could not simply be replaced by *construct* in (12) and (13) although this verb evokes the same frame (i. e. the Building frame). As we shall see in section 5, *construct* is less compatible (though not generally incompatible) with a generic and hence atelic, unbounded reading. Thus, the potential of *build* to occur in generic constructions is lexically determined. This property also allows it to instantiate the following pattern, which is not attested for *construct* in the Gigaword dataset (underlining by HB).

(14) a. "He does not seek political power or personal gain, he does not intimidate or deceive," Nadeau said. "He **builds**, he **leads**, he **inspires**."
b. Israeli Prime Minister Benjamin Netanyahu on Sunday planted trees in West Bank settlements, in a move which he said sent a clear message that Israel would retain major settlement blocs under any peace deal with the Palestinians. "The message is clear, we are here, and we will stay here. We **plant** and **build**.
c. She even teaches yoga for kayakers. They **build**; they **teach**; they **compete**; they are incorporated.

These examples involve anaphora as a rhetorical device, which must not be confused with the grammatical notion of anaphora as an expression or implicit argument whose reference is determined by an antecedent. In rhetoric, we are dealing with anaphora if a sentence-initial word or phrase is repeated (e. g. Göttert 2009: 52). Unlike repetition of the verb (cf. (10)), this stylistic device tends to give special prominence to the subject in the Gigaword examples. In (14a), it is accompanied by a climax, which is another type of symmetry. As such, it aims at persuading the reader via the aesthetics of the pattern. In sentence (14b), the combination of anaphora as a stylistic device (i. e. the repetition of the pronoun *we* in clause- and sentence-initial position) with the temporal unboundedness of the activities denoted by *plant* and *build* is exploited to make an unequivocal political statement. In this example, planting and building as symbolic acts are relevant for the discourse. In (14c), the repetition of the pronoun *they* highlights the professional versatility of two people who dedicate their lives to the sport of kayaking. In this example, the couple's commitment to each of the activities they habitually perform becomes tangible. If the content of this pattern had been expressed in a single sentence (*They build, teach, compete, and they are incorporated*), this effect would not have emerged because a mere enumeration of the activities would have concealed the strong subject-relatedness.

Finally, there is one more stylistic device which deserves consideration because it also manifests itself in null instantiation, namely the cataphora. In contrast to anaphoric relations as created by DNI, cataphoric relations are directed forward in that a referent for the implicit argument is introduced later in the discourse. As pointed out by Ziem/Boas/Ruppenhofer (2014:

321), the subsequent introduction of a new discourse referent that functions as a Frame Element of a previously evoked frame is an important coherence-building device which can be used to establish cross-sentential reference structures. Examples of forward directed INI from Gigaword are provided in (15).[14]

(15) a. But from Thanksgiving to Christmas Eve every year, Renninger would lock the doors of the first floor parlor and begin **building**. Building what? The ultimate train set; a kid's dream.

b. "We have decided that the best way to end the freeze is to begin **building**," he said in a statement. "Cement trucks, bulldozers and other earth-moving equipment are already in place in Revava and the activists plan on marking the last hours of the freeze by laying the foundations for a new neighborhood."

c. Chrysler launched its new ads last month. One is focused on the corporation, but the others feature vehicles. The theme is "We **build** ..." They show, for instance, a sports car burning rubber under the text, "We build rockets."

As shown above, the referents of the NPs *the ultimate train set* (15a), *a new neighborhood* (15b), and *rockets* (15c) are introduced as new information and have the status of focal entities. Since there is no antecedent which helps to identify the referent of the implicit argument in advance, cataphoric relations can be used to attract the reader's interest and hence to cause him or her to continue reading (cf. de Beaugrande/Dressler 1981: 65). Example (15a) nicely illustrates the interaction of INI and the rhetorical question *"But what?"* in the creation of suspense. In (15b), a cataphoric relation is established between the implicit argument of *build* and the NP *a new neighborhood*. Example (15c) alludes to the theme of a new ad launched by Chrysler, which begins with the phrase *"We build"* and a few seconds later continues with an impressive enumeration of objects produced by this company, including rockets (Chrysler Commercial We Build). Accompanied by visualization, the cataphora serves to render Chrysler brand cars attractive to potential customers.

5 Object deprofiling attested for *construct*

While null instantiation of the direct object is relatively frequent in the context of *build* – as shown in the previous section – it is remarkable that the Gigaword corpus only provides two sentences in which the complement of *construct* is not syntactically realized, namely (16a) and (16b). In these rare sentences, *construct* does not refer to concrete events, but conveys generic or habitual readings. Moreover, the antithesis it forms with *destroy* might have been created in analogy with the parallelism involving the canonical antonyms *build* and *destroy*, which is much more frequently attested in Gigaword (cf. (13a) and (13c)).

(16) a. In response, Mr Lepper accused the prime minister and his party of belittling him and not consulting him on major policy moves. "They are not made for **constructing**, but for **destroying**. They will agree only with people who are on their knees before them," he said.

b. We **construct**, he **destroys** ... it's a very good game," Gusinsky said in an interview with The Associated Press.

[14] According to these authors, this constellation provides evidence for Fillmore's (1986) claim that DNI is directed backwards, whereas INI is directed forwards if a referent is being introduced.

Unlike *build*, the verb *construct* is largely incompatible with the atelic reading induced by Indefinite Null Instantiation. While both verbs are lexically classifiable as accomplishments (cf. for example Rothstein 2016: 348 on *build*), only the former quite productively allows for an activity reading if its direct object is deprofiled. As far as *construct* is concerned, the lexical aspect (i. e. the *aktionsart*) seems to be less variable. The verb's inherent telicity manifests itself not only in its resistance to null instantiation, but also in its incompatibility with the "ergative" construction (cf. Keyser/Roeper 1984; Lemmens 1998). While sentences in which the verb *build* lacks an intentionally acting Proto-Agent and in which the Proto-Patient surfaces as the subject are abundant in Gigaword (e. g. *The energy on the dance floor builds*), a distinctly intransitive reading as conveyed by the ergative construction is not attested for *construct*.

However, in view of the sparseness of the Gigaword data, enTenTen21 was consulted for potential further occurrences. To that purpose, concordances were generated for this verb, and the results were restricted to the right context so that only sentence-final occurrences of *construct* would be displayed. Of these, the first 500 concordances were manually searched.

5.1 Definite Null Instantiation

Despite the findings presented above, additional concordances from enTenTen21 show that *construct* is not entirely incompatible with null instantiation. Seven contexts obtained from this corpus, three of which are represented in (17), show that the verb at least tolerates DNI. Thus, a discourse referent for the implicit object is available in the preceding context (Topical DNI).

(17) a. I could use better wifi. My house is odd shaped because it was added on to. When did your area get qualified? Trying to figure out how long of a wait from, approval to install is. Currently we sit at "**constructing**".
b. His concern is that a vote on this item as presented is a vote for a beach, not to study the feasibility of a beach. Mr. Glazier responded that we still need funding to actually **construct**.
c. The "Will you win?" question led her to redesign her Death Star. She made it smaller. And substituted daisies for petunias. And made it hollow, so the roof would support the weight. Now she knows it will meet her real need. She knows she'll win if she gets it. It's time to pull the construction permits and start **constructing**!

What is interesting about these examples is that the activities are presented as unaccomplished despite the inherent telicity of the verb *construct*. In order to account for this phenomenon, the distinction between (a)telicity and (un)boundedness explicitly drawn by Depretaere (1995: 2f) is considered to be important.[15] According to Depraetere, (a)telicity depends on whether or not the situation described by a clause has an inherent or intended endpoint beyond which it does not extend, while (un)boundedness relates to the question whether or not a temporal endpoint has actually been reached. Significantly, a situation can be inherently telic and at the same time construed as unbounded, i. e. as lacking an actual endpoint. This is what we find in the above contexts from enTenTen21.

[15] This distinction is also relevant for Andreou/Lieber's (2020) analyses of the aspectual properties of nominalizations and for the distribution of expletive *it* among English denominal conversion verbs, e. g. *to au pair* vs. *to au pair it* (cf. Baeskow 2024).

In example (17a), the implicit argument of *constructing* is co-referent with the phrase *better wifi* introduced in the preceding context. The sentence *Currently we sit at "constructing"* shifts the emphasis to the process of constructing which, however, will terminate as soon as the Wi-Fi connection has been installed. Although the activity is construed as unbounded, the inherent telicity of *construct* is preserved because the activity has an intended endpoint beyond which it will not continue. Note that *approval* and *install* also display null instantiation and that their complement refers to the same discourse entity. In (17b), the construction of the beach is being planned, but has not yet begun. Again, the activity has an intended endpoint because it will not continue once the project has been realized. In the third context (17c), the antecedent is *her Death Star*, which must have been introduced before and which is updated more than once by the pronoun *it* in the subsequent discourse before an anaphoric relation with the implicit argument of *construct* is established.[16] As in the preceding examples, the activity denoted by this verb is construed as telic yet unbounded.

5.2 Indefinite Null Instantiation

Since *construct* at least tolerates Definite Null Instantiation, we should expect that a referent for its null-instantiated argument might also be introduced later in the discourse. In fact, three contexts that display cataphoric relations (i. e. forward directed INI) could be manually extracted from enTenTen21, as shown in (18).

(18) a. […] bcryptprimitives is the module; SymCryptFdefModInvGeneric is the function. So, he said, "I've been able to **construct**" – and here's the key. "I've been able to construct an X.509 certificate" – that's a standard identification certificate – "that triggers the bug."

b. **Play** and **Construct**! | Marble Hall, Level 2
Use oversize tangram shapes to create patterns and designs, and construct the Great Wall of China using cardboard building blocks.

c. The transparisteel lid popped open, the Korpil sat up, blabbered in Basic, "I need to get back to the Roche Asteroid Field! The Roche Asteroid Field! Quickly! Quickly! I have a great idea! A great idea! **Build! Construct!** Engineer! Great idea!" Then the Verpine fell onto the deck, alive but unconscious. […] The Verpine ignored them and started hurriedly walking from wall to wall, chattering to himself, "Roche! Roche Asteroid Field! That's my home! I'm late! I need to get home! I have an idea! It's the Kyromaster! I'll call it the Kyromaster! It'll be the best starfighter engine ever! I'll build this engine in Roche!"

As shown already for *build* in section 4.3.2, the cataphora is a stylistic device which can be used to arouse the reader's curiosity. This is what we find in (18a), where the author successively reveals what he was able to construct. The text from which these sentences were extracted deals with a vulnerability in Windows, and the author succeeded in constructing (and hence in identifying) a certificate which triggers a bug if it is embedded in an S/MIME message. The delayed introduction of the non-predictable referent gives special discourse prominence to this entity. Since the construction of the certificate is completed, the lexically determined telicity of *construct* is preserved in spite of the initial omission of the direct object.

[16] Obviously, the referent is a floral recreation of the fictional space station "Death Star" featured in *Star Wars* and defined in the Star Wars Databank.

In (18b), *Play and Construct!* is the title of a workshop offered by the Virginia Museum of Fine Arts (Richmond, Virginia USA) as part of a ChinaFest. Although we are dealing here with an instructional imperative (cf. Ruppenhofer/Michaelis 2010) and hence with an instance of CNI, a referent for the omitted object of *construct* – namely *the Great Wall of China* – is introduced later in the text. Here, the cataphoric relation is intended to arouse the interest of potential visitors and participants.

Example (18c) presents us with the stream of consciousness of the Korpil, a fictional character from *Star Wars*. In this example, the referent of the direct object of *construct* is introduced with considerable delay, thus keeping the reader in suspense. Even before we learn what the ingenious construction is, the Korpil creates an anaphoric relation between the hitherto unknown referent of the direct object and the pronoun *it* (*It's* the Kyromaster! I'll call *it* the Kyromaster! *It*'ll be the best starfighter engine ever!). In this context, null instantiation fits the partly elliptical utterances of the Verpine.

None of the examples discussed so far leaves us with an unspecified object argument of *construct*. However, concordances from enTenTen21 reveal that *construct* is occasionally detransitivized in the context of other verbs which more readily allow for null instantiation, like *play* in (18b) and *build* in (18c). Thus, we may state that the argument of *construct* is locally omitted in analogy with the intransitive use of another verb. This option also surfaces in further contexts, and interestingly enough, even Indefinite Null Instantiation is observable for the inherently telic verb *construct* in analogical constructions. The following enumerations of activities from enTenTen21 illustrate this point:

(19) a. The environment is essential in allowing both you and your learner's opportunities to **inquire**, **create** and **construct**.
b. What is proposed within this movement for change is to adopt a socioconstructivist approach towards education, in which the school provides the conditions for learning how to **act**, **operate**, **create** and **construct**, starting from the realities experienced by teachers and students.
c. They were open to the woods, and there was lots of what we in education call loose parts – bits and pieces of man-made and natural objects that children used to **build**, **create** and **construct**.

Since *construct* – with the few exceptions presented above – typically requires its object argument to be locally realized, the prototypical mini-construction of this verb is the transitive one in which the Proto-Agent and the Proto-Patient as well as the respective entailments are profiled (cf. Figure 3). Moreover, unlike *build*, the verb *construct* is lexically specified for the aspectual feature [+telic], which signals that the activity it denotes has an inherent or intended endpoint in the sense of Depraetere (1995). Since the activity will not proceed if the construction is completed, a reading that signals a truly open-ended process of constructing is hardly available unless it is generated by analogy (e. g. *Play and construct!*).

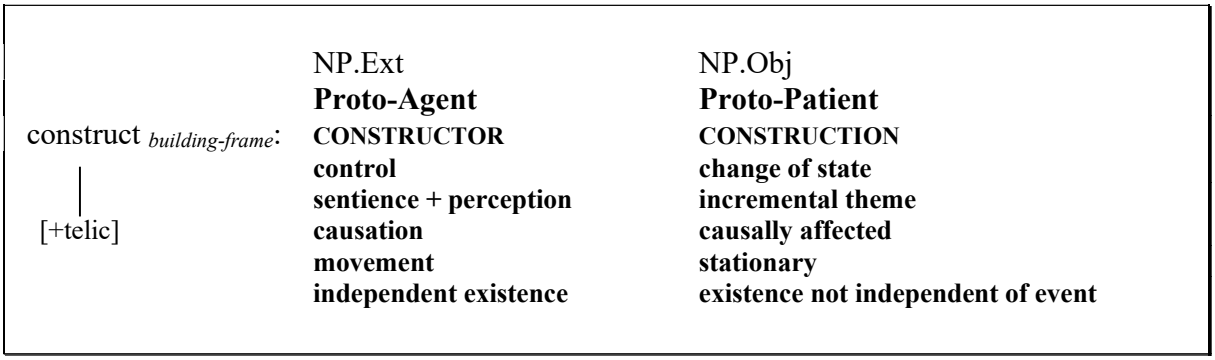

Figure 3: Mini-construction for the prototypically transitive verb *construct*

To sum up, the very limited availability of data suggests that argument omission is at least tolerated by *construct* if a referent is present in the context that precedes or follows the verb, or in conjunction with a verb that allows its argument to be omitted (coercion by analogy). In general, however, the lexically determined telicity of *construct* is preserved. This property manifests itself especially in comparison with the verb *build*, whose lexical aspect is readily modelled by Indefinite Null Instantiation.

6 Object deprofiling attested for *create*

Sentences displaying enumerations of activities like those in (19) reveal that apart from *build*, another causative transitive verb which is capable of coercing *construct* into an atelic reading is *create*. This verb is semantically related to *build* and *construct* because its frame, i. e. the Intentionally_create frame, is superordinate to the Building frame. The Intentionally_create frame states that a "Creator creates a new entity, the Created_entity, possibly out of Components" (FrameNet), and this information is inherited by the subordinate Building frame. The higher degree of abstraction ascribed to the Intentionally_create frame by FrameNet is reflected by the observation that the CREATED_ENTITY may remain entirely unspecified in particular contexts. The behaviour of this verb with respect to null instantiation is presented in the following sections.

6.1 General observations

While 247 sentences displaying null instantiation could be automatically extracted for *build*, the Gigaword search for *create* only yielded 62 results. Interestingly, most of these contexts display INI (41 occurrences), whereas DNI is not attested for *create* in Gigaword. The remaining 21 sentences have generic character (GNI). As done for *construct*, the dataset for *create* was extended to include contexts from enTenTen21. An examination of the first 500 concordances (restricted to the right context) confirmed that INI is prevalent with 34 instances, whereas DNI (6 instances) is underrepresented. The following sentences from Gigaword ((20a) and (20c)) and enTenTen21 (20b) exemplify the three types of null instantiation identified for *create*.

(20) a. His wife and business partner, Lois, is the kind of natural beauty who dwells in Lauren's imagination when he **creates**. [INI]
b. We will use your server version. Thank you for **creating**! [DNI]
c. We need to remember that it's artists, not computers, who **create**. [GNI]

As observed for *build*, object deprofiling in the context of *create* may serve to generate pragmatic or stylistic effects. In sentences like those from Gigaword ((21a) and (21b)) and enTenTen21 (cf. (21c)), the principle of Omission under Low Discourse Prominence postulated by Goldberg (2001: 514) applies because the deprofiled patient argument is neither topical nor focal and the focus is on the activity itself.

(21) a. Yet that cynicism burned like the spiritual fire of a true believer in him [i. e. Frank Zappa; HB], fueling an obsessive quest to **create**, **create**, **create**. [Repetition]
b. Neither machines nor money are going to be enough to solve the business problems of the future. Men are going to do it ... Men who **plan**, men who **create**, men who **decide**, men who **manage**." [Anaphora (figure of speech)]
c. Rise up to this opportunity – **think new**, **be bold**, **create**! [Climax]

In (21a), the repetition of *create* – in combination with the metaphorical allusion to cynicism as the driving force behind the musician's creativity – has an intensifying effect. The anaphora underlying (21b) emphasizes the superiority of humans over machines. (21c) is an appeal from the Teachers College of San Joaquin (TCSJ), which encourages students to question previous assumptions and culminates in a call for creating (new educational concepts).

However, since these patterns are also instantiated by other inherently transitive verbs like *build*, it is important to point out that the creative process is emphasized not only under pragmatic or stylistic constraints and that argument omission may also reveal something about the Proto-Agent's state of mind or involvement in the activity. These motivating factors, which set *create* apart from *build* and especially from *construct*, will be presented in the following section.

6.2 Distinctive properties of the detransitivized verb *create*

As pointed out above, Gigaword only provides 62 cases of null instantiation for *create*. Moreover, it is noteworthy that the intransitive uses of this verb are largely restricted (a) to contexts that evoke a creative setting and (b) to the religious domain. Especially in the former contexts, the creativity of the Proto-Agent may be more relevant for the discourse than the result of the creative activity, which is open to imagination. In terms of Frame Semantics, the interpretation of the implicit argument remains highly abstract in creative contexts. While it is understood to be of the schematic type ARTIFACT, it is not further specified. In this respect, *create* contrasts with *build*, whose deprofiled object is associated with entities of the semantic subtype BUILDING by default. It also contrasts with the inherently telic verb *construct*, which is much more goal-directed and hence requires its direct object to be spelled out. While an Agent who intends to construct something has a very clear idea of the composition of the artifact and of the methodology required to obtain an optimal result, someone who creates (in an aesthetic sense) may have a vague idea of the CREATED_ENTITY, which is open to modification, and try out various methods to obtain a result. If the context evokes a creative setting, the verb *create* is well-suited to convey atelicity, unboundedness, and indefiniteness. Consider for example the following sentences from enTenTen21 ((22a), (22b)) and Gigaword (22c), all of which focus on the creative process and background the result.

(22) a. The inner dialogue continued until I, tired of the drama, finally dialed her number and attempted a feeble nonchalant air, as if my book being rejected didn't matter a damn. I was an artiste! Published? Who cares about publishing when you can simply **create**!
b. Who knows what we'll end up doing? Learn to observe, enjoy science, participate and **create**! Supervised by a professional chemist.
c. "The good thing about that period of time in the movie industry was that they let us **create**," he said. "Today it's all product placement. Today, you want to get a car into a movie, Ford Motor Company will bring five cars to the set and give them $ 5 million.

In (22a), the creative process of writing is considered more important than the publication. (22b) is an announcement of a chemistry workshop for teens, which explicitly states that the experience has priority over potential achievements. In this context, it should be mentioned that quite a few examples – especially those collected from enTenTen21 – specify the (simple) tools or materials required for creating (e. g. *My favourite time in school was when I had a blank piece of paper, a pencil and a ruler to just create!*). Example (22c) quotes George Barris, who designed and built cars for Hollywood films and film stars in the 1960s and who argues that this business – once a creative niche – has become too commercialized. The focusing of the creative process and the potential indeterminacy as to the output provide the detransitivized verb *create* with a positive connotation, which manifests itself most obviously in event mottos or workshop announcements. Expressions typically found in these examples are *joy*, *fun*, *happy*, or *enjoy*, e. g. *But the beauty of art is that even if it is not your career, it can bring life long joy of creating!* (enTenTen21). By contrast, *construct* is emotionally neutral. This also applies to *build* unless the verb is part of an antithesis (as in (13)) or appears in contexts dealing with excessive building activities (e. g. (10a–c)).

A further remarkable contrast is that only *create* is capable of conveying the impression of transcendence. Evidence comes from religious contexts, where the activity it denotes is predicated of God. While God creates, human beings are engaged in less sublime activities as expressed by *make* (23a), *organize* (23b), *produce*, *develop*, *implement*, or *build* (23c). Interestingly, the parallelism surfacing in the first example shows that even the highly polysemous causative verb *make* allows for detransitivation in an appropriate context.

(23) a. Man **makes**, God **creates**. (Lemmens 1998: 142)
b. "God **created**, but Linnaeus **organized**": those are the words of Swedish botanist Carl Linnaeus himself, the celebrated scientist who developed the modern classification of nature and who was born 300 years ago. (Gigaword)
c. Wrong, he said: "I learned many years ago from Sister Suzanne, when I was in the fifth grade that only the Lord **creates** ... Human beings **produce**, **develop**, **implement** and **build**. (Gigaword)

Moreover, in quite a few contexts, the low discourse relevance of the result shifts the focus of attention towards the involvement of the Proto-Agent in the creative activity. These contexts reveal something about this participant's state of mind. Driven by inspiration, the Proto-Agent gets absorbed in a creative process, which can be described as a (multimodal) experience in the following examples from Gigaword:

(24) a. When I work and I **create**, I am not very approachable.
b. Improvising can certainly be spurred on by a performer's intense connection to the audience, but it is also deeply introspective, and sometimes our pleasure comes from knowing that we are spying on an artist as he **creates**.
c. He doesn't refer in his music to being arrested, Simmons said, but added that it "puts me in a frame of mind, it evokes certain emotions that help me **create**"

Given these observations, it is assumed here that apart from <independent existence>, the detransitivized variant of the prototypical transitive mini-construction for *create* only profiles the Proto-Agent entailments which emphasize the Proto-Agent's mental involvement in the creative process. Moreover, in order to capture the inspiration behind a creative process, the entailment <sentience> is extended to comprise <introspective sentience>, which was proposed by Engelberg (2000: 197) for verbs expressing mental states. According to Engelberg, mental states (for example joy) are not mediated via the sensory organs, but in a way he refers to as "introspective". In a broader sense, introspection as a non-primary way of experiencing a mental state also matches the Proto-Agent's absorption in a creative process – independently of whether or not this participant is an artist. Thus, the Proto-Agent is both the instigator of the creative process and an experiencer in this process. In the following mini-construction, the fact that the referent of the implicit argument is left entirely unspecified is encoded in the feature [–definite] (abbreviated as *–d*), which was borrowed from Engelberg (2002: 387).

	NP	--
	Proto-Agent	Proto-Patient^{-d}
create *Intentionally_create frame*:	**CREATOR**	CREATED ENTITY
|	**'control'**	'change of state'
	'introspective sentience	'incremental theme'
[–telic, –bounded]	**+ perception'**	
	'causation'	'causally affected'
	'movement'	'stationary'
	'independent existence'	'existence not independent of event'

Figure 4: Mini-construction for the detransitivized variant of the verb *create*

A final point to be made here is that especially in announcements of workshops for children, creating is also presented as a basic skill which – like reading and writing – has to be acquired, e. g. *While building interactive stories and games, your child will be introduced to the basics of coding concepts, solve problems, and most importantly, create!* (enTenTen21). Again, the Proto-Agent of *create* is construed as an Experiencer who in these contexts is invited to "learn by doing" rather than to work in a goal-oriented manner, following instructions. Significantly, the contextually "reduced Proto-Agent" of *create* in Figure 4 can be distinguished from the Proto-Agent of cognitive verbs like *love*, *hope*, or *believe* because the "physical" entailments <causation> and <movement> as well as the whole set of Proto-Patient entailments remain implied.

To sum up, the intransitive use of the verb *create* emphasizes the creative process beyond pragmatic or stylistic considerations (such as contrastive focus or repetition) or highlights the mental

involvement of the Proto-Agent as an Experiencer – thus leaving room for imagination as to the implicit argument. In this respect, *create* contrasts with *build*, whose indefinite implicit argument tends to be interpreted as an abstraction over buildings, and with *construct*, whose transitivity is reducible only under coercion. If someone creates, he or she is engaged in a process which requires motivation, inspiration, introspection, and innovative ideas, whereas the result is of subordinate relevance.

7 Collocations as potential indicators of selectional preferences and the (non-)omissibiliy of complements

In this section, the fine-grained contrastive analyses of *build*, *construct* and *create* presented so far are supplemented by some observations regarding the verbs' selectional behaviour, which according to authors like Rice (1988); Fellbaum/Kegl (1989); Jackendoff (1990); or Resnik (1993) correlates with argument omission. Specifically, there is a consensus that the set of complements typically selected by a verb in its transitive use makes at least some predictions as to the interpretation of the omitted object argument. Selectional preferences can be conceived of as abstractions over collocations which typically occur in the direct-object position of verbs. For example, a Word Sketch generated by Sketch Engine for *drink* shows that this verb typically collocates with nouns like *water*, *beer*, *alcohol*, *coffee*, *tea*, *wine*, *milk*, etc. If *drink* is used intransitively (in its unmarked reading), these collocations indicate that the omitted argument is of the semantic type BEVERAGE.[17] Given this simplified correlation, an interesting question is whether collocations also account for the different behaviour of semantically similar verbs with respect to null instantiation. In order to find out which types of nominal complements are preferred by the three verbs under consideration, two methods – a simple one using Word Sketches and a more complex, distributional one which is based on a vector model and visualizes the distribution of the verbs' objects in a semantic space – were combined for the present study.

In a first step, the Word Sketch tool provided by Sketch Engine was applied to uncover the verbs' collocations. A Word Sketch generated for a lemma X specifies various relations such as 'modifiers of X', 'objects of X', 'subjects of X', 'X and/or…' etc. For each relation, 100 lexical items which form collocations with X in the 52-billion-word corpus enTenTen21 are specified, and for each collocate, the frequency of co-occurrence and the typicality of the association are displayed.[18] Typicality is calculated on the basis of the LogDice score, which indicates how strong the collocation is and which – unlike other statistical association measures (e. g. the MI score or the T-score) – is restricted to the maximal value 14. An advantage of this restriction is that the LogDice value is independent of the corpus size, so that it can be used to compare scores between different corpora.

In order to provide a first impression of the nouns co-occurring with *build*, *create* and *construct*, only the top 50 collocations specified by Sketch Engine for their 'object-of' relations are represented in Table 1. A significant preliminary for the comparison of the three verbs is that the

[17] In its marked reading, intransitive *drink* refers to the regular consumption of alcohol.

[18] In the Sketch Engine Glossary, the notion of collocation, which was introduced by Firth (1957), is defined as "a sequence or combination of words that occur together more often than would be expected by chance".

collocations have to be interpreted relative to the verbs' overall token frequency. In the enTenTen21 corpus, which consists of 52 billion words, the overall token frequency of *create* (29,154,939) and *build* (21,016,612) is much higher than that of *construct* (2,558,745), and the frequencies of co-occurrence vary accordingly. As observed already by Goldberg (2006a: 234), high-frequency transitive verbs are more likely to display object omission than semantically similar verbs with a lower overall frequency.

Objects of *build*			**Objects of *construct***			**Objects of *create***		
Collocate	**Frequency**	**LogDice score**	**Collocate**	**Frequency**	**LogDice score**	**Collocate**	**Frequency**	**LogDice score**
house	276179	9,18	building	75727	9,21	environment	241742	8,37
relationship	232986	8,91	bridge	13866	7,6	job	268638	8,29
home	182661	8,24	model	30763	7,4	page	230798	8,21
system	184655	8,05	facility	17995	7,37	opportunity	250638	8,18
community	125946	8,02	house	22743	7,27	space	202515	8,02
bridge	101776	8	road	14376	7,27	file	181998	7,85
capacity	98536	7,85	dam	7966	7,21	account	160185	7,76
church	92782	7,78	wall	11564	7,04	image	151383	7,58
network	93765	7,75	narrative	7593	6,88	experience	149412	7,42
model	108848	7,73	wetland	5725	6,81	world	130661	7,36
environment	95093	7,73	identity	8674	6,79	system	154630	7,3
trust	79084	7,64	temple	6371	6,72	content	118356	7,29
structure	85865	7,56	tower	5990	6,61	program	132531	7,24
building	85276	7,55	structure	12069	6,58	plan	118450	7,18
wall	77579	7,54	plant	9377	6,46	problem	141035	7,14
business	93452	7,42	object	9100	6,32	atmosphere	93879	7,12
confidence	65973	7,34	tunnel	4239	6,26	model	108491	7,09
car	75084	7,23	pipeline	4054	6,17	object	98910	7,09
team	81821	7,2	argument	6968	6,14	product	105350	6,95
infrastructure	59155	7,2	station	6629	6,11	condition	94269	6,95
application	73451	7,2	graph	3853	6,07	something	129599	6,94
plant	63689	7,2	church	6238	6,06	work	119799	6,93
reputation	57397	7,16	network	7042	6,03	website	87893	6,9
website	63367	7,12	map	6048	6,01	value	100416	6,89
facility	59369	7,09	nest	3504	6	design	86939	6,87
foundation	54166	7,06	fort	3200	5,92	character	88238	6,86
quality	61092	7,01	frame	4382	5,88	effect	96046	6,85
skill	63048	7,01	complex	3551	5,87	list	88628	6,82
road	52667	6,96	portfolio	3632	5,85	project	92702	6,79
brand	52810	6,95	sentence	4565	5,83	solution	83259	6,71
project	66874	6,93	fence	3157	5,83	community	78648	6,67
base	51146	6,93	line	11444	5,8	video	76280	6,66
platform	51413	6,89	shelter	3212	5,78	map	69307	6,62
school	54506	6,83	housing	3433	5,76	awareness	67386	6,6
city	48278	6,74	home	14795	5,73	sense	76655	6,59
career	47015	6,74	theory	4854	5,73	art	68169	6,57
site	55293	6,73	meaning	4636	5,73	series	69352	6,52
temple	41142	6,73	unit	6608	5,73	culture	64076	6,51
ship	42796	6,68	system	19345	5,71	network	65131	6,5
resilience	37568	6,62	reality	4275	5,66	situation	65825	6,49
partnership	38552	6,58	railway	2623	5,66	profile	61361	6,47
station	40545	6,57	railroad	2578	5,64	group	69636	6,4
machine	41144	6,55	tree	4812	5,59	application	64558	6,36
tower	35859	6,52	set	6838	5,59	table	58805	6,36
future	37873	6,52	canal	2504	5,59	site	65963	6,35
solution	44051	6,43	framework	3673	5,54	piece	61968	6,33
block	34966	6,41	table	4707	5,53	database	54957	6,32
nest	32497	6,41	highway	2517	5,51	version	62668	6,31
muscle	33126	6,39	dwelling	2329	5,5	structure	57164	6,27
app	34203	6,38	project	9905	5,48	game	70795	6,26

Table 1: Top 50 collocations obtained from Word Sketches for *build*, *construct* and *create*
Relation: "objects of X"

In a second step, the 100 most common objects co-occurring with the three verbs in enTenTen21 were analysed using word vector representations (cf. Appendix). The vectors are

based on 200-dimensional GloVe embeddings (cf. Pennington/Socher/Manning 2014).[19] The version of GloVe we used is 6B. These representations map words to specific coordinates in the vector space by examining the words in their context. In essence, the properties of a word vector are dependent on other words that frequently co-occur with that word. Therefore, words that are semantically similar are positioned close to each other in the vector space. For the purpose of interpretability, the dimensionality of the word vectors was reduced to 2 using the t-SNE algorithm (cf. van der Maaten/Hinton 2008). The graph in the Appendix shows a scatter plot of the vector space. The red, blue and green dots represent the verbs *build*, *construct* and *create*, respectively.

Interestingly, we can see clusters forming around some of the objects, which make at least some predictions as to the verbs' selectional preferences. To begin with, the graph shows a relatively high density of abstract nouns that co-occur with *build* and *create* rather than with *construct*, e. g. *environment*, *experience*, *culture*, *situation*, *awareness*. In these similar contexts, which reflect extended verb meanings, null instantiation does not occur. The analyses presented in the previous sections have shown that the arguments of *build* and *create* which remain implicit are understood to denote concrete entities. Moreover, states referred to by abstract nouns are not necessarily brought about by human beings. For instance, in a sentence like *The higher costs and longer timelines create two significant problems* (enTenTen21), the verb *create* does not evoke the Intentionally_create frame, but the Cause_to_start frame according to which a CAUSE, i. e. an animate or inanimate entity, a force, or an event, causes a process to begin. By contrast, the intransitive uses of *create* – like those of *build* – generally require an animate, intentionally acting Proto-Agent.

A further observation, which coincides with the results of the Word Sketches in Table 1, is that *build* and *construct* share collocations in the area of the vector space occupied by words related to location. This state of affairs is visualized by overlapping red and blue points. Overlap is observable for example for *house*, *home*, *dwelling*, *plant*, *housing*, *school*, *church*, and *hotel*, which are of the semantic type BUILDING. However, as elucidated in section 4.1, null instantiation is only attested for *build* in these contexts. Qualitatively, the incompatibility of *construct* with null instantiation has been attributed to its inherent telicity (cf. section 5). Quantitatively, it may be due to the verb's reduced frequency of occurrence as compared to its competitor *build*. From a diachronic point of view, it is interesting that according to the *Oxford English Dictionary*, the intransitive use of *build* dates back to about 1316.[20] Obviously, the default interpretation of the reduced variant of this verb has been subject to conventionalization, i. e. to "the *social* process of structures becoming standard in a speech community." (Langacker 2017: 39)

The verb *create* seems to fill a semantic niche in that it surfaces in relatively recent contexts, namely those related to Information Technology. In these contexts, in which it collocates with nouns like *file*, *account*, *content*, *program*, *link*, *profile*, or *website*, (Indefinite) Null Instantiation is not attested because the complements are non-predictable and add discourse-relevant

[19] These vectors, which are freely available, were trained on a dataset that combines Gigaword5 and Wikipedia 2014.

[20] The transitive use is attested already since the Old English period.

information. Sentences like those in (25) differ considerably from contexts which highlight the Proto-Agent's less goal-oriented involvement in a creative activity (cf. (24)).

(25) a. If you're new here, please use the Create New Account form to **create** your account.
b. You can utilize new tech to **create** more direct links between operations and your customers.
c. There are quite a few technologies already available for **creating** dynamic web content.

Remarkably, some collocates of *construct*, all of which denote architectural structures, are dispersed over the right periphery of the vector space where red dots (*build*) and green dots (*create*) are hardly represented. Since semantically similar words are normally positioned closer to each other in the vector space, we would have expected the nouns *hotel*, *temple*, *palace*, and *castle* to form a tighter cluster. However, as pointed out by Janosch Gehring (personal communication), the larger distance between these collocates may be due to differences as to the texts in which they co-occur with *construct*. For example, while job advertisements tend to be very similar and include nouns like *job* or *experience*, an article dealing with hotels is likely to differ from an article about a temple or palace at least to some degree. Semantically, Table 1 and the vector representation reveal that the collocates of *construct* tend to be concrete nouns which refer to physically bounded entities and for which the verb entails incremental themehood. Given the inherent telicity of *construct*, nouns denoting "effected objects" are more likely to complement this verb than abstract nouns, and this is what the data confirm. While the Word Sketches display 34 abstract collocates for *build* and 25 for *create*, there are only six abstract nouns among the top 100 collocates of *construct*.

A final important observation is that the Word Sketches generated by Sketch Engine for 'modifier-of-X' relations display a striking accumulation of manner adverbs which form collocations with *construct* but not with *build* or *create* in enTenTen21 and which reveal something about the level of skill (*cleverly*, *properly*), attention to detail (*carefully*, *poorly*, *meticulously*), or the aesthetic appeal of the action (e. g. *beautifully*, *artfully*, *brilliantly*). The following extract from the Word Sketch generated for *construct* illustrates this point.

newly	31726	8,8	elaborately	703	5,78
specially	7322	7,82	artfully	694	5,76
carefully	16467	7,78	entirely	4874	5,73
poorly	6988	7,5	sturdily	602	5,67
solidly	2023	7,12	illegally	1091	5,64
hastily	1958	6,98	similarly	1638	5,63
cleverly	1963	6,96	properly	4743	5,62
beautifully	4415	6,9	intricately	652	5,59
artificially	1963	6,87	thoughtfully	705	5,59
originally	12304	6,53	prior	1450	5,55
meticulously	1416	6,44	dynamically	833	5,54
culturally	1466	6,19	partially	1927	5,51
tightly	1529	5,93	brilliantly	725	5,37

Table 2: Modifiers co-occurring with *construct* (Source: Sketch Engine)

Since the quality of an activity can only be evaluated against the result, the object arguments display higher discourse prominence and thus have to be syntactically realized, e. g. *In fact, Brontë has constructed the novel carefully and dates, seasons and even times of day can be accurately tracked* (enTenTen21). It should be noted that the collocations between *construct*

and these modifiers also hold if *constructed* is used as a participial adjective, e. g. *a carefully constructed little cube of wood*, *a beautifully constructed time machine*, *meticulously constructed villas* (enTenTen21). Evaluations of this kind are meaningful only if the entities under construction are expressed.

Of course, the figures calculated by Sketch Engine as well as the vector-based visualization should be interpreted as reflecting tendencies, but in combination, they contribute plausible explanations for the non-arbitrary behaviour of the three inherently transitive verbs with respect to object deprofiling.

8 Conclusion and outlook

In this article, the creation verbs *build*, *construct* and *create* were analysed with respect to their potential to leave their direct object unexpressed. The fine-grained contrastive analyses have shown that the three verbs behave differently despite their semantic similarity. *Build* readily allows for null instantiation, and its deprofiled object argument is interpreted as 'building' by convention if it remains indefinite. By contrast, *construct* largely resists null instantiation unless it is coerced into an intransitive reading by means of analogy. This behaviour has been ascribed to its lexically determined telicity, the correlating preference for nouns which can be construed as effected objects (or incremental themes), and its relatively low overall token frequency (as compared to *build* and *create*). Moreover, *construct* collocates with certain manner adverbs which modify the activities it denotes relative to the quality of the result (e. g. *carefully*, *meticulously*, *brilliantly*). Although intransitive uses of *create* are not abundant in Gigaword, supplementary data from enTenTen21 show that this verb may leave its object argument implicit in aesthetic settings and in religious contexts which foreground God as the Creator. In these contexts, the creative act and the Proto-Agent's involvement are more discourse relevant than the potential outcome, which may be open to imagination. Beyond the verb-specific distribution of null instantiation, pragmatic, stylistic and textual considerations may motivate intransitive readings especially for *build* and *create*.

Resuming the claim made by Rice (1988) and Resnik (1993) that Indefinite Null Instantiation works best if the complements display a medium degree of abstractness (cf. section 4.1), the results obtained in this article suggest that *build* behaves like *eat*, *drink*, or *read* in that the semantic type BUILDING of its implicit argument – like FOOD, BEVERAGE, or TEXT – is salient enough to be inferred without further contextual information. While the implicit argument of *build* is "understood" to be of the type BUILDING, as shown by the examples in section 4.1, the result of an activity denoted by *create* may be entirely irrelevant to the discourse, e. g. *His wife and business partner, Lois, is the kind of natural beauty who dwells in Lauren's imagination when he creates* (Gigaword). Nevertheless, *create* differs from genuinely intransitive verbs in that the frame it evokes, namely the Intentionally_create frame, provides a slot for a CREATED_ENTITY which is of the schematic type ARTIFACT. Even if the verb is detransitivized, the activity it denotes is not random. However, it should be kept in mind that null instantiation beyond creative and religious contexts is precluded (e. g. *create jobs*, *a product*, *a link*, *a safe environment*). As far as the verb *construct* is concerned, the slot which the Building frame provides for the CREATED_ENTITY typically requires instantiation. Schematically, these constellations can be represented as follows:

(26) *create* [ARTIFACT] ← *build* [BUILDING] → *construct* [concrete instance(s)]

While fine-grained contrastive analyses of further verbs of creation (e. g. *make*, *assemble*, *manufacture*, *erect*, *produce*) would have exceeded the scope of this article, the three verbs discussed here are considered to be representative of verbs evoking either the same frame or related frames. For example, as far as *manufacture* and *erect* are concerned, first observations suggest that these verbs, which display a relatively low frequency of occurrence in enTenTen21, behave like *construct* in that they require their complements to be syntactically realized. *Produce* is comparable with *create* because it allows for null instantiation in particular domains, namely economy, entertainment, and sports. An analysis of *produce* in its intransitive readings is part of a more general study which discusses three routes to the interpretation of implicit arguments (cf. Baeskow 2025a).

Although the present study is rather specific, it may be of interest for future research on the topic in three ways. First, it presents a highly innovative method which allows for an automatic detection of all kinds of null instantiation. Secondly, it fills a gap in that it focuses on the intransitive use of highly transitive verbs, which has received little attention so far. Thirdly, it makes a contribution to the long-standing question why semantically similar verbs behave differently with respect to null instantiation. As observed by Boas (e. g. 2017), the hypothesis first formulated by Levin (1993) that verbs with similar meanings tend to display a similar syntactic behaviour is too broad a generalization because the form-meaning correspondence is not systematic. This observation manifests itself clearly in the verbs' predisposition to leave their direct object implicit and in the interpretation of their implicit arguments – if available. Thus, more finely-grained analyses as performed in the present study are required.

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Appendix Glove 200d Cluster

Vector representation showing the distribution of verb-object collocations for *build* (red points), *construct* (blue points), and *create* (green points)