**Tiana Tošić Lojanica**
University of Kragujevac
Faculty of Philology and Arts

# THE POWER OF ATTRACTION: *SO ADJ AS TO V* CONSTRUCTION AND ITS COLLEXEMES[1]

**Abstract:** Adopting the assumptions of usage-based construction grammar (Goldberg 1995, 2006), the paper aims to explore the grammatical construction *so ADJ as to V* with respect to the lexical items occurring in two different slots of the construction. A central idea of the theoretical framework is that syntactic constructions may be as meaningful as lexical items, and, hence, they have the power to attract semantically compatible lexemes. This metaphorical power of attraction, in fact, is indicative of the level of construction entrenchment in the speakers' minds.

The method applied is covarying collexeme analysis (a subtype of collostructional analysis developed by Stefanowitsch and Gries 2003, Stefanowitsch 2013), a quantitative and corpus-based approach designed to identify pairs of words that occur together in the same construction more or less frequently than expected. The obtained list of most strongly attracted ADJ–V combinations reveals that a great majority of adjectives denote a negative quality, which is perceived as the cause of the activity in the V slot. The consequence, on the other hand, is reserved for verbs of cognition, emotion, speech, and rarely for true dynamic verbs. A limited number of positive polarity adjectives appears to be used productively, only when the pattern is conventionalized through recurrent communicative situations. Finally, adjectives denoting size or quality, bordering the meaning of *too-* and *enough*-patterns, were observed in 12% of the analyzed collexeme pairs.

**Key words:** construction grammar, so ADJ as to V, covarying collexeme analysis, collostruction.

## 1. Introduction

The term construction is understood here in the sense of Goldberg (1995, 2006: 5), as the basic linguistic unit, a sign, or pairing of form and meaning. Initially, constructions were defined as linguistic patterns whose form or function is not strictly predictable from its component parts (Goldberg 1995). The idea of non-compositionality is closely related to the pivotal premise that constructions themselves may encode meaning, thus having the power to attract semantically compatible lexemes (Michaelis 2004). The definition was subsequently revised as to include semantically compositional (or non-idiosyncratic) expressions (e.g. *What's*

*up? How has your day been?*) which have high enough frequency to be remembered as constructions (Goldberg 2006: 5). However, more recent research in human memory and categorization has led to another modification of what is perceived as a construction[2]. According to Goldberg (2019: 7), "constructions are understood to be emergent clusters of lossy memory traces that are aligned within our high- (hyper!) dimensional conceptual space on the basis of shared form, function, and contextual dimensions." Despite the evolution of the basic concept, the cognitive foundation of the framework has remained consistent. It rests on the notion that meaning is derived from various scenarios of human experience and is associated with specific forms. Such constructions may "be extended in various ways, allowing the speaker to apply the familiar pattern to new contexts in principled ways" (Goldberg 1995: 43). The interaction between words and constructions, their mutual attraction or repulsion, is indicative of the level of construction entrenchment in the speakers' minds, allowing us to investigate the construction preferences or restrictions with respect to open slots, or to examine possible interactions between two or more slots.

The latter approach is applicable to the two-slot construction [so ADJ as to V] which encodes an abstract meaning of cause and effect. The research goal is to examine the covarying collexemes, i.e. lexemes appearing in the two slots of the constructions, by measuring how powerfully they are attracted to one another in relation to the given pattern. The association strength, also called collostruction strength (to be elaborated in the following section), of the items occurring in the pattern [so ADJ as to V] is compared to reveal potential interactions between the two slots. Paired with a qualitative analysis, the paper aims to come closer to understanding the meaning and the event frames related to the construction in question.

## 2. *So ADJ as to V* construction

Some of the typical examples of the construction taken from The Corpus of Contemporary American English (COCA) are listed below:
a. Finally there remains a percentage, not large indeed, and yet not **so small as to be negligible**.
b. He wasn't **so naive as to think** anyone could simply choose to be happy.
c. Ideally, this will not be **so precise as to be incomprehensible**, or **so vague as to be useless**.
d. If I may be **so bold as to say** so, Donald, it would be a good idea for you.
e. […] but the reason given is **so ridiculous as to be** laughable.

The construction [so ADJ as to V] appears to encode the meaning of cause and effect, taken broadly, with *so* as an intensifying premodifier of either an adjective or adverb (not to be analyzed in this paper). Paired with *as to* and am infinitival clause, the quality or manner intensified comes to be understood as a cause or a precondition.

Modern English grammars do not provide much information on the given

construction, except that AS TO belongs to a group of conjunctive complex prepositions[3], together with a similar correlative preposition SO…THAT (Aarts 2011:156). Swan (1996: 537) merely acknowledges the existence of the structure *so + adjective + as to + infinitive*, describing it as formal and not very common (e.g. *Would you be so kind as to tell me the time?*). Huddleston and Pullum (2002: 734) briefly shed some light on the SO…THAT preposition claiming that there is a close semantic relationship between the constructions containing SO as a marker of result, and SO as a degree adverb. The authors provide the following pair of examples, and state that in (1b) SO "licenses the content clause following *passionately*, which expresses the result of his loving her to the degree he does", concluding that "the net effect is thus essentially the same".

> 1a.  He loves her passionately, so that he is even willing to give up his job for her.
> 1b.  He loves her so passionately that he is even willing to give up his job for her.

The formal and semantic correlation with SO…AS TO appears to be straightforward, the difference being that, unlike SO…THAT, the pattern SO… AS TO takes non-finite complement clause. Consequently, the non-finite [so…as to] must be related to a participant expressed in the main clause, as opposed to the finite pattern [so…that] which allows a new participant to be introduced in the complement clause.

> 2a.  He was so kind as to open the window.
> 2b. *He was so kind as to his wife/ for his wife to open the window.

Meier (2003) proposed a compositional semantics account of the patterns [*too adj to v*], [*not enough adj to v*], taking them as instances of comparison[4], and relating them to the [*so…that*] resultative construction. The initial assumption was that "the value an object has on a scale associated with the meaning of the adjective or adverb is related to some standard of comparison that is determined by the sentential complement" (Meier 2003: 69). The author further proposed that the infinitival complements of patterns with *too* and *enough* implicitly or explicitly contain a modal expression, and, therefore, express an incomplete conditional construction. Here we offer a simplified example of that formalized in Meier:

> 3. Bertha is old enough to drive a car. → If Bertha's age is within a certain age, she can drive a car.

In other words, the denotation of the infinitival clause is perceived as possible if the participant fits into certain dimensions or qualities denoted by an adjective. Similarly, Meier (2003: 97) assumed that *so…that*, "a genuine result clause construction", is equivalent to the [enough] construction if they are both modalized

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[3] In traditional grammars*, in order, so (that),* and *so as* are treated as subordinating conjunctions constituting part of the subordinate clause (Huddleston and Pullum 2002: 728).

[4] In one of the recent collostruction papers, Stefanowitsch and Flach (2020: 249) analyzed constructions *too adj to v* and *not enough adj to v* as, stating the infinitival clause "encodes a potential event that is implied to be possible (in other examples: admissible, justifiable, etc.) only as long as one of its central participants falls within a certain range along the dimension referred to by the adjective".

by the same modal expressions, and if they are evaluated with respect to the same conversational background. The following examples were used to prove that [enough] and [so…that] have the same Logical Forms (Meier 2003: 98):

4a. The jet flies fast enough to beat the speed record.
4b. The jet flies so fast that it can beat the speed record.

In this context, the non-finite construction [so…as to] encodes the same meaning: The jet flies so fast as to beat the speed record.

In other cases, however, the implications may not be equivalent. In the following examples, the [so…that] pattern implies the lion was very tame, unlike the [enough] construction.

5a. The lion was tame enough for the lionkeeper to enter its cage.
5b. The lion was so tame that the lionkeeper could enter its cage.

It is not possible to construct the non-finite counterpart here, as the finite [so…that] structure involves two different participants in the main and complement clause.

Downing, too, briefly mentions the construction [so ADJ as to V] together with [enough] and [too] constructions (e.g., *It was too late to go inside, We didn't leave early enough to get there in time*), claiming that infinitival complements are understood as comparison and excess following adjectives and adverbs. According to her, the degree modifier, not an adjective or adverb, licenses the complements (Downing 2015: 459).

To summarize the previous paragraphs, the semantics of the construction [so…as to] has been described as resultative, or as that of comparison.

The overall meaning of the construction is quite interesting considering the meaning of its parts. Namely, in the particular pattern, *so* is merely an intensifier of the adjective, while *as to* per se does not imply result or consequence. Moreover, *as to* is a compound preposition which licenses an NP or an interrogative clause complement (Huddleston and Pullum 2002: 626), roughly meaning 'according to' and 'concerning something' (e.g., *There's no doubt [as to her suitability]/[as to whether she's suitable]*). In other words, the meaning of the given construction is non-compositional.

The origin of the construction, that would otherwise be helpful in shedding some light on how or when the construction meaning came about, is unfortunately unknown. The Corpus of Historical American English (COHA) shows that it was at its peak between 1830 and 1920[5], which is in accordance with Swan's claim that [so ADJ as to V] is no longer commonly used. Interestingly, if we compare the diachronic frequency of [so ADJ as to V] with the similar resultative form [so as to], it is evident that both of the patterns were most frequently used at approximately the same time in the course of the language history, indicating a potential relation between the two. Subsequently, to explain the non-compositional meaning of the pattern [so ADJ as to V], we suggest the possibility that the pattern represents an instance of a syntactic amalgam (Lakoff 1974, Goldberg 1995: 97).

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[5] https://www.english-corpora.org/coha/

Namely, in the given theoretical framework, constructions are mutually related in different ways to form a network (Goldberg 1995). The notion of multiple inheritance is used to describe how one construction may instantiate several constructions at the same time. Specifically, subpart links relate not only constructions similar in either form or meaning, but also complex syntactic constructions, and all those constructions that instantiate their parts (Goldberg 1995: 78, Hilpert 2014: 62). In this regard, [so ADJ as to V] appears to simultaneously instantiate the [DEGREE SO + ADJ] construction and the [SO AS TO] construction. The formal overlap, observed in *so*, could have led to the creation of a syntactic an amalgam with meaning inherited from the two abstract patterns, resulting in the cause-effect interpretation. It is important to note that we put forth this idea tentatively, as we have not collected sufficient data to corroborate it.

# 3. Data and methodology

To obtain significant results indicative of the construction meaning and use, the research was conducted on a large sample derived from the Corpus of Contemporary American English (COCA), a balanced corpus containing approximately 1.1 billion words and encompassing the period 1990–2010.

The search pattern [so ADJ as to V] initially returned 3.278 hits, with 2.389 unique forms. It must be noted that both the adjective and the verb slot can take an adverbial modifier (e.g. *He was so kind as to <u>politely</u> hold the door.*), yet these patterns were not taken into consideration due to the fact that they are not numerous and as such would not affect the findings.

Following the inspection of the contexts, instances of adverbs were manually removed from the results (e.g. …stooped so *low* as to…), yielding the final list of 3.259 adjective-verb pairs in total, of which 2.387 unique.

Before we explain the methodology behind the co-varying collexeme analysis employed in the paper, it would be useful to consider the raw frequencies, as they might provide useful insight into the construction of meaning.

As for the first slot occupied by an adjective, raw frequency, quite expectedly, shows that the adjective *kind* occurs predominantly with 291 tokens. It is followed by *bold* (115), *low* (114), *stupid* (103), *good* (87), *foolish* (79), naïve (53), *large* and *great* (49), *high* (45), *lucky* (36), *strong* (32) etc. which mostly reflect some aspect of human nature or character. On the other hand, the verb slot is most frequently occupied by the auxiliary *be*, with 740 tokens. This is not surprising considering the fact that the auxiliary usually takes adjectival and nominal complements, which describe the resultant event of the adjective in slot 1. The other verbs include *make* (157), *think* (90), *have* (77), *believe* (56), *say* (46), *leave* (45), *seem* and *require* (42), *give* (39), *render* (35), *take* (33), *let* (31) etc.

The adjectives are more diverse with 972 types in slot 1, as opposed to 649 unique instances of verbs in slot 2. The discrepancy reveals that the construction might be used to stress the cause, i.e. to focus on the quality leading to the result expressed by

the verb. The most common verbs are auxiliaries and light verbs, indicating that the consequence may be more complex structurally, i.e. may introduce a new clause, or a complex noun phrase. Nevertheless, we do not wish to explore verb complements here, as the primary goal is to investigate the interrelation between slot 1 and slot 2 in the given construction. For this purpose, a more complex statistical toolkit was used.

Collostructional analysis[6] is an umbrella term for a set of quantitative methods developed by Stefanowitsch and Gries (Gries and Stefanowitsch, 2004; Gries and Stefanowitsch, 2004a; Stefanowitsch and Gries, 2005, Hilpert 2014a). Several variants have been designed to measure the association between lexical items and grammatical structure: a simple collexeme analysis is suitable for measuring the attraction of a lexical item to a construction; a distinctive collexeme analysis is used to compare the attraction of lexical items to two different constructions; a co-varying collexeme analysis measures the association between two lexical items in one construction; the recent hybrid subtype, a distinctive co-varying collexeme analysis (Stefanowitsch and Flach 2020) is an extension of the previous method applied to two constructions.

The co-varying collexeme analysis applied in this paper essentially identifies pairs of lexical items occurring in two slots of the pattern more or less frequently than expected. The construction itself essentially represents a frame for co-varying collexemes. The contingency table for a co-varying collexeme analysis is given below.

| | Lexeme 1 in Slot 1 of the Construction | Other words in Slot 1 of the Construction | Total |
|---|---|---|---|
| **Lexeme 2 in Slot 2 of the Construction** | Frequency of S1(L1) and S2 (L2) | Frequency of S1(¬L1) and S2(L2) | Total frequency of S2(L2) in construction |
| **Other words in Slot 2 of the Construction** | Frequency of S1(L1) and S2(¬L2) | Frequency of S1(¬L1) and S2(¬L2) | Total frequency of S2(¬L2) in construction |
| **Total** | Total frequency of S1(L1) in C | Total frequency of S1(¬L1) | Total frequency of construction |

Table 1. Contingency table for a co-varying collexeme analysis

If we take the example *be so kinds as to help me,* the upper left row represents the frequency of the adjective *kind* and the verb *help* in the construction [so ADJ as to V]. The row below, then, represents the frequency of *kind* with other verbs in the given construction. The column on the right (upper row) contains the frequency of all other adjectives with the verb *help*, and the one below should contain the frequency of all the other adjectives and all the other verbs found in the [so ADJ as to V] construction.

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[6] The name itself is a blend of *collocation* and *construction*. Lexemes attracted to a particular construction are referred to as *collexemes* of this construction; a construction associated with a particular lexeme is called a *collostruct*; a *collostruction* represents the combination of a collexeme and a collostruct (Stefanowitsch and Gries 2004: 214).

The adjective-verb pairs excerpted from the COCA corpus were used as input for R studio software, with an additional script (Flach 2017) designed specifically for collostructional analysis. The output contains observed and expected (i.e. chance) frequencies of both lexemes, in Slot 1 and 2, the association measure (i.e. p-value) of every adjective–verb combination that expresses the degree to which two units are attracted to each other. It is important to note that while the Fisher-Yates exact test is typically used in a collostruction analysis, in a co-varying collexeme analysis, *p*-values are obtained by a log-likelihood statistic test (it is the default value in the R package), possibly because it is widely used in phraseological research (Stefanowitsch and Flach 2020: 255). However, it should be noted that the association measures obtained through the collostructional analysis are not to be taken as absolute values because other statistical tests, affected by the corpus size, might yield different results (see Schmid and Küchenhoff 2013).

## 4. Results and Discussion

Out of 2387 combinations, as many as 1559 adjective-verb pairs in the construction [so ADJ as to V] were statistically significantly associated with each other. The following table lists top 30 co-varying collexemes. Besides the observed and expected frequencies of individual adjectives and verbs, as well as their respective combinations, the table contains the association measure (the log-likelihood *p*-values) in descending order, as well as the level of statistical significance. The association measure, referred to as collostructional strength, indicates the mutual attraction of collexemes in the construction—the higher it is, the stronger the attraction (Gries 2012: 93).

Finally, a statistically significant result, i.e. a result not attributed to chance, is represented by asterisks in descending order. Specifically, five asterisks represent the greatest level of statistical significance with $p < .00001$ (42 adjective-verb combinations), four asterisks indicate the result is significant at $p < .0001$ (145 combinations), three asterisks mean significance at $p < .001$ (329 combinations), while two should be interpreted as $p < .01$ (606 combinations), and, finally, one asterisk signifies *p*-value $<.05$ (436 combinations). If the probability is higher than .05, the difference between the two constructions is not statistically significant (marked *ns*).

| | ADJECTIVE | VERB | fS1 | fS2 | OBS | EXP | COLL.STR. LOGL | SIGNIF |
|---|---|---|---|---|---|---|---|---|
| 1 | naive | think | 53 | 90 | 20 | 1.5 | 79.4531 | ***** |
| 2 | naive | believe | 53 | 56 | 15 | 0.9 | 64.09024 | ***** |
| 3 | impaired | fall | 7 | 14 | 6 | 0 | 62.69613 | ***** |
| 4 | derivative | become | 6 | 21 | 6 | 0 | 62.42693 | ***** |
| 5 | lucky | have | 36 | 77 | 14 | 0.9 | 60.26901 | ***** |
| 6 | bold | say | 115 | 46 | 15 | 1.6 | 46.16164 | ***** |
| 7 | bold | ask | 115 | 24 | 11 | 0.8 | 42.36077 | ***** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 8 | gullible | believe | 9 | 56 | 6 | 0.2 | 38.05404 | ***** |
| 9 | ignorant | dismiss | 12 | 3 | 3 | 0 | 34.44273 | ***** |
| 10 | bold | inquire | 115 | 5 | 5 | 0.2 | 33.6523 | ***** |
| 11 | malevolent | begrudge | 2 | 2 | 2 | 0 | 33.58166 | ***** |
| 12 | small | be | 31 | 740 | 22 | 7 | 32.90093 | ***** |
| 13 | bold | speak | 115 | 9 | 6 | 0.3 | 29.18221 | ***** |
| 14 | acute | endow | 4 | 2 | 2 | 0 | 28.03648 | ***** |
| 15 | generic | veer | 4 | 2 | 2 | 0 | 28.03648 | ***** |
| 16 | presumptuous | predict | 19 | 4 | 3 | 0 | 26.87578 | ***** |
| 17 | pained | destroy | 2 | 5 | 2 | 0 | 26.85154 | ***** |
| 18 | drunk | forget | 2 | 5 | 2 | 0 | 26.85154 | ***** |
| 19 | angry | react | 5 | 2 | 2 | 0 | 26.85154 | ***** |
| 20 | broad | encompass | 21 | 4 | 3 | 0 | 26.2263 | ***** |
| 21 | favorable | admit | 2 | 6 | 2 | 0 | 25.94349 | ***** |
| 22 | one-sided | oppress | 6 | 2 | 2 | 0 | 25.94349 | ***** |
| 23 | cynical | think | 8 | 90 | 5 | 0.2 | 25.73991 | ***** |
| 24 | kind | give | 291 | 39 | 15 | 3.5 | 25.5004 | ***** |
| 25 | vague | be | 24 | 740 | 17 | 5.5 | 25.26374 | ***** |
| 26 | kind | explain | 291 | 12 | 8 | 1.1 | 24.304 | ***** |
| 27 | good | express | 87 | 5 | 4 | 0.1 | 24.21323 | ***** |
| 28 | gullible | steep | 9 | 2 | 2 | 0 | 24.04695 | ***** |
| 29 | kind | come | 291 | 19 | 10 | 1.7 | 23.97205 | ***** |
| 30 | arrogant | believe | 23 | 56 | 6 | 0.4 | 23.54412 | ***** |

Table 2. Top 30 co-varying collexemes in [so ADJ as toV]

For the purpose of this research, only the 42 pairs exhibiting the greatest collostructional strength, as well as the pairs mutually repelled (the bottom of the list), are going to be presented and discussed.

## 4.1. Negative polarity adjectives

The results obtained through a co-varying collexeme analysis do not allow a straightforward interpretation. However, it is evident that all pairs conform to the abstract meaning of the construction generally defined as cause and effect. However, a closer inspection of distinctive adjective-verb pairs reveals that 25 out of the 42 pairs belong to the same semantic pattern. Specifically, all the adjectives in these combinations encode negative qualities, i.e. an insufficient intellectual capacity or negative emotional states (e.g. *naïve, gullible, malevolent, drunk, cynical, arrogant, weak, bold, arrogant, unglued* (in the sense *annoyed*), *vague, angry, reckless, presumptuous*). The negative adjectives are to be perceived as a cause, or a reason for the events encoded by the given verbs[7].

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[7] In his paper on a formally and semantically similar construction, *too ADJ to V* construction across English dialects, Pavlović (2020) showed that the ADJ slot in American English denotes a lack of good judgement or intelligence as well.

On the other hand, the events represented by the verbs rarely involve 'true' activity. Instead, they normally encode cognitive, emotional reactions, or verbs of speaking (e.g. *think, believe, begrudge, forget, fear, say, ask, inquire, speak, claim, react, steep* (meaning *give over to*), *suggest, explain, categorize*, and only one instance of *be,* as a collexeme of the adjective *vague.*

Furthermore, the list contains 12 adjective-verb combinations where adjectives also encode negative qualities not related to human traits. As many of the words in the given pairs are polysemous, we inspected the context in which they occur and discovered a major weakness of the results. Namely, each of the 12 collexeme combinations calculated to be highly significant are in fact duplicates. For example, the pairs *impaired-fall* and *derivative-become* are noted to co-occur 6 times each. However, the first pair appeared in an identical sentence on the same website in the same year, essentially decreasing the observed frequency from 6 to 1. The observed frequency of the other collexeme pairs is 2, while, in reality, it is 1, as one and the same example was included in the corpus twice, the source mostly being websites. The observation led us to doubt whether these co-lexeme pairs in actuality exhibit the greatest collostructional strength. Instances like this reveal the weak sides of corpus analysis, prompting us not to take quantitative analysis for granted.

Nevertheless, if we disregard the previous caveat, the analysis of the 12 pairs for the most part confirms our finding that negative qualities ascribed to event participants cause the event in slot 2 of the pattern [so ADJ as to V]. The only three exceptions are adjectives *novel, favorable*, and *acute* that are used in a positive tone. Note that the adjective *mild*, example (6e), in its own right does not suggest a negative quality. Still, the context, or, more specifically, the consequence is perceived as negative, coercing the negative interpretation of *mild* in the *so*-pattern.

6a. Not wrong, mostly harmless advice, but so **generic as to veer** into the realm of noise.
6b. When knowledge is **so novel as to create** radical conviction, threaten the status quo or the foundations of religious belief, it can be suppressed for years and even centuries.
6c. This insight is **so acute as to endow** him with prophetic power.
6d. […] spirit of the age which appears to be so opposed to it would become **so favorable as to admit** of its great and sudden advancement
6e. Is it possible to have a serious coronary condition, where the initial warning signals were **so mild as to escape** a physician during a routine medical exam?

As in the prevalent set of collexemes involving a personal trait or emotion, the verb slot related to these adjectives appears to be reserved for rather abstract consequences. Unlike verbs of cognition and emotion, as well as verbs of speaking observed in the dominant set of collexemes, here we can see that the verbs are used metaphorically to denote the change in attitude, perception or consciousness, as the context analysis reveals:

*so impaired to fall within the range of..., so derivative as to become unintelligible, so pained as to destroy his inclination for food, so one-sides as to oppress an innocent party/ as to shock the conscience, so shabby as to merit giggles and tears.*

## 4.2. Positive polarity adjectives

Table 2 includes merely 4 adjectives with positive semantics, and the expressions containing them all seem to be (partially) idiomatized. One of the exceptions to the negative adjectives in slot 1 is *kind*, which is highly attracted to the verbs *come, point* (*out*)*, provide* (meaning, *send, give*), *give,* and *explain* (5 pairs in total). The combinations with *kind* serve the communicative purpose of politely asking someone for a favor via conventionalized structure, as illustrated below. The same function is performed by the synonymous adjective *good*[8] that also co-occurs with the same semantic types of verbs as the adjective *kind*. Unlike the adjectives expressing an inherent or acquired negative quality that tend to trigger or cause cognitive and emotional reactions, the verbs co-varying with positive adjectives involve movement and speaking.

7a.   Be **so good to express** yourself more clearly.
7b. Perhaps your entourage could be **so kind as to give** us some privacy?

Furthermore, other adjective–verb pairs, exhibiting a lesser degree of collostructional strength in our list[9], are also used in the *so*-pattern to convey the meaning of a tentative request. Once again, the meaning of such adjectives is positive, for example *so gracious as to show*.

The same can be claimed for the positive polarity adjective *bold* which is most strongly related to the verbs of speaking. The semantics of these pairs is highly idiomatized, as can be seen from the following examples.

8a. May I be **so bold as to say** that our mornings and evenings are marked by what we love?
8b. May I be **so bold as to ask** what you require of me at your dinner?
8c. If I may be **so bold as to speak** as an outsider on this issue, this has nothing to do…

The combination of the adjective *bold* and a verb of speaking usually follows a modal verb of (asking for) permission, while the entire string [so bold as to V] is normally understood as an excuse or in-advance apology for saying something unpleasant.

Finally, the adjective *lucky* is a positive polarity adjective used in a (semi)fixed expression, participating in 36 co-lexeme pairs in the [so ADJ as to V] pattern. It is significantly attracted to the verb *have* which takes a range of complements, e.g. *so lucky as to have a home/ friend/ privilege, problem, secret*[10]. Unlike *kind, good* and *bold,* which are highly conventionalized in communicative situations, expressions with *lucky* merely surpass the compositional meaning 'to have a good fortune',

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[8] The *good – express* combination is also among the top 42 displaying the greatest association strength.

[9] The full list of collexemes is available at request.

[10] Stefanowitsch and Flach (2020) also observed the [ADJ enough to V] and [too ADJ to V] patterns have idiomatized uses. While the *enough*-pattern has an open verb slot in cases such as [*lucky/fortunate enough to* V] or [*stupid/dumb enough to* V], the *too*-pattern has the verb slot specified either lexically, or as regards a semantic class.

and are normally understood as 'be fortunate, pleased or even grateful for a certain situation'.

## 4.3. Size or quantity adjectives

Among the co-varying collexeme pairs exhibiting the greatest association measure, a slightly different meaning pattern emerges in 5 examples where adjectives denote size or quantity. These collexemes include: *small – be, broad – encompass, numerous – Germanize, rare – be,* and *broad – include*. The semantics of the given set of examples resembles that of the *enough*-pattern and *too*-pattern (c.f. Stefanowitsch and Flach 2020), which encode an event as possible, admissible, justifiable etc. so long as the participant fits the size or range specified by an adjective in the first slot of the construction.

9a. DNA molecules are **too small to study** directly under the microscope.
9b. Our eyes aren't **big enough to see** all of nature's beauty. (Stefanowitsch and Flach 2020: 249)
9c. Some grants are **so small as to be experimental** in nature […]

Despite the fact that all three constructions encode the same meaning, the range or degree of adjectives in slot 1 is apparently different. While the adjective in the *too*-pattern does not reach a contextually expected standard, the adjective in the *enough*-pattern is below or equals the standard (see Meier 2003 for an in-depth description). On the other hand, the *so*-pattern merely stresses the quality expressed by an adjective, serving as a cause. In certain contexts, the implicatures may differ, as previously described.

The following table represents a brief list of adjective-verb pairs mutually repelled in the construction.

| | ADJECTIVE | VERB | FS1 | FS2 | OBS | EXP | COLL.STR. LOGL | SIGNIF |
|---|---|---|---|---|---|---|---|---|
| 2386 | kind | be | 291 | 740 | 1 | 66.1 | 147.0178 | ***** |
| 2385 | bold | be | 115 | 740 | 1 | 26.1 | 51.3616 | ***** |
| 2384 | foolish | be | 79 | 740 | 3 | 17.9 | 22.94451 | ***** |
| 2383 | stupid | be | 103 | 740 | 6 | 23.4 | 22.55456 | ***** |
| 2382 | kind | make | 291 | 157 | 2 | 14 | 17.80541 | **** |
| 2381 | naive | be | 53 | 740 | 3 | 12 | 11.74597 | *** |
| 2380 | cruel | be | 18 | 740 | 1 | 4.1 | 4.01711 | * |

Table 3. Mutually repelled collexemes in [so ADJ as toV]

It is interesting to observe that the verb *be* fills slot 2 in 6 out of 7 mutually repelled adjective-verb combinations. As mentioned, the verb *be* is by far the most frequent in this position (740 instances), yet some of the most frequent adjectives that were previously established to represent the core meaning of the construction repel it. The table apparently confirms the conclusion that the semantic frame of

cause and consequence represented by the *so*-pattern prefers verbs of cognition, speech, and emotion as possible outcomes, and not states.

The verb *make* co-occurs with the adjective *kind* twice (essentially, one example registered twice), observed in the following example:

10. Galileo intoned after those nights of wonder, "for being so kind as to make me alone the first observer of marvels kept hidden in obscurity for…"

In this case, being kind does not induce activities of giving or generally responding to requests, which is a conventional conversation formula; instead the consequence denotes a change of status, which apparently is not strongly related to the pattern [so ADJ as to V].

# 5. Conclusion

The abstract meaning of the construction, i.e. the meaning of cause and result, taken rather broadly, subsumes all collexeme pairs. The co-varying collexeme analysis resulted in 42 adjective-verb combinations with the greatest collostruction strength. The bottom five pairs of mutually repelled combinations merely served the purpose of confirming the event frames typically associated with the [so ADJ as to V] construction.



- Negative trait
- Negative non-traits
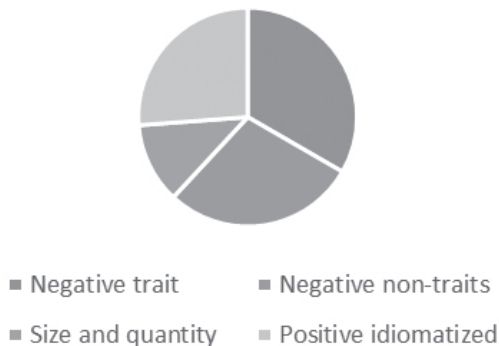- Size and quantity
- Positive idiomatized

Table 4. The semantics of the adjectives attracted to the construction

The qualitative inspection of the pairs and the context they occur in suggests that the causal element in the pattern [so ADJ as to V] is predominantly related to negative qualities. In other words, the semantic frame is such that the negative qualities—or cognitive and emotional insufficiency observed in the participants— are perceived as likely causes of the results or consequences realized as verbs. It is important to note that being naïve, ignorant, or angry does not induce us into action, but rather into thinking, speaking or into a range of emotional states.

Within this group, only a few positive adjectives appear to be an exception in that they participate in (semi)fixed or conventionalized expressions.

On the other hand, almost one third of the studied combinations (28.6%) contain adjectives of negative polarity expressing cause unrelated to our mental and

emotional capacity (marked 'non-traits' in Table 4). It is interesting that while the adjective slot accepts diverse semantic types, the result-events in slot 2 are restricted. More specifically, the verbs in this group are not typical motion and dynamic verbs, by contrast they express the change in perception, attitude, or state.

Lastly, about 12% of the analyzed collexeme pairs border the meaning of *too*- and *enough*-patterns in that they specify a range, i.e. size and quantity that is seen as a condition to the fulfillment of the event marked by the verb slot.

In conclusion, the construction is entrenched as generally encoding cause and result. The restricted number of positive adjectives is used quite productively in the pattern conventionalized through recurrent use in certain communicative situations. In a great majority of cases, negative polarity adjectives are perceived as causes, with only a few exceptions. The 12% of pairs expressing size and quantity explain why in certain grammars (e.g. Downing 2015) the structure [so ADJ as to V] is grouped with *enough* and *too* pattern.

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Тиана Тошић Лојаница

## СНАГА ПРИВЛАЧЕЊА: КОНСТРУКЦИЈА *SO ADJ AS TO* V И ЊЕНЕ КОЛЕКСЕМЕ

Ослањајући се на идеје конструкционе граматике (Голдберг 1995, 2006), у раду се испитује конструкција *so ADJ as to V*, односно лексеме које се могу наћи на две отворене позиције. Једна од премиса теоријског оквира је да и синтаксичке конструкције могу бити носиоци значења, као и да привлаче одређени, и одговарајући, тип лексичког материјала. Метафоричка привлачност је, у ствари, показатељ мере у којој је дата конструкција когнитивно уврежена у говорној заједници. У раду се примењује анализа коварирајућих колексема (подтип колострукције као ширег методолошког апарата), која подразумева корпусну

квантитативну анализу којом се добија списак парова лексема које се међусобно „привлаче" или „одбијају" у датој граматичкој конструкцији. Конструкција *so ADJ as to V* има широко схваћено значење узрока у последице, при чему анализирани парови колексема код којих је измерен највећи степен привлачности указују на чињеницу да су придеви негативног значења најчешћи узрочници когнитивних, емотивних и вербалних глаголских радњи. Такође је уочен мањи број придева позитивног значења који у комбинацији са глаголима кретања или мировања чине умерено продуктивну групу парова чија је међусобна веза конвенционализована и идиоматизована. Трећу, најмалобројнију, групу чине придеви са значењем величине, димензије и сл. које такође привлаче глаголи који нису динамични у правом смислу те речи, а значењски су блиски обрасцима са *too* и *enough*.

tiana.tosic@filum.kg.ac.rs