Chapter 22

"Constructions" and grammar: Evidence from idioms

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The paper presents results of our investigation of the distribution of idioms across diatheses (voice alternations) in English and Hebrew. We propose an account and discuss its consequences for idiom storage and its implications for alternative architectures of grammar. We provide evidence that idioms split into two distinct subtypes, which we label "phrasal" versus "clausal" idioms. Based on idiom surveys, we observe that phrasal idioms can be specific to the transitive, the unaccusative or the adjectival passive diathesis, but cannot be specific to the verbal passive. Clausal idioms, in contrast, do not discriminate between diatheses: they tend to be specific to a single diathesis. These findings, we argue, cannot be accommodated by a Construction Grammar approach, such as Goldberg (2006), which assumes knowledge of language consists merely of an inventory of stored 'constructions', and does not distinguish between a storage module versus a computational system, attributing all significant grammatical generalizations to inheritance networks relating stored entities, and general cognitive and functional constraints. An adequate theory of idioms must have recourse to a distinction between stored items and unstored derivational outputs, and to grammatical distinctions. We outline an account of the findings, distinguishing between diatheses according to where they are formed, and assigning different storage to idioms according to whether their head is lexical or functional.

1 Introduction

Theories of linguistic knowledge all assume a storage component, where the associations of form and meaning are stored. There is a controversy as to the nature of this component, call it the lexicon: How much does it list? What does it allow? What else is there beyond the lexicon? In contrast with Generative Grammar, which assumes a modular, multi-component model (Chomsky 1965 and subsequent work), Usage-based

Construction Grammar (CxG) (e.g. Goldberg 2006) and similar work assume that human knowledge of language is nothing more than a network of stored constructions.[1] There is no faculty of language and no language specific mechanisms, no derivations, just a lexicon of constructions, labelled 'Construct-i-con', which includes morphemes, words, idioms, partially lexically filled as well as fully abstract phrasal patterns. Generalizations across languages are explained by general cognitive constraints together with the functions of the particular constructions. Language-specific generalizations across constructions arise via inheritance networks.

The rationale behind the assumption of a construct-i-con is as follows: (i) Idioms, for the most part, involve an internal makeup consisting of phrasal units. Since their meaning is unpredictable and associated with the whole construction, they are most plausibly stored as constructions. (ii) The distinction between idioms and 'other constructions' (involving argument realization) is hard to detect in many instances, because often the specific meaning of a sentence not involving an idiom (in the traditional sense) seems better specified as a property of the construction, not as properties of the verb and of its complements (e.g., the 'transfer of possession' meaning of 'He sliced Chris a piece of cake' vs. the 'caused motion' interpretation of 'He sliced carrots into the salad', although both sentences feature *sliced*). Hence, constructions in general should be stored as such.

Indeed, idioms exhibit an inherent duality. On the one hand, they are phrasal units with internal syntactic structure, and on the other, they are associated with an unpredictable, conventionalized meaning. Therefore, the question as to how they are stored is particularly intriguing. Given that they are grammatical constructs and interact with grammar (can be embedded, can allow passivization, etc.), they must be stored intra-grammatically, in the lexicon. This paper investigates the storage of idioms, aiming to shed light on the nature of the lexicon. Further, idioms are the archetypal construction to be stored à la CxG; therefore, they constitute a test case (for alternative conceptions of grammar and the lexicon) most favorable to CxG. So if our investigation of idioms finds that the storage they require is inconsistent with CxG's central tenet that grammar is comprised of nothing but networks of stored 'constructions', this must be all the more so for more productive, prima facie compositional kinds of 'constructions'.

Investigating the distribution of idioms across diatheses (transitive, unaccusative, adjectival passive, and verbal passive), we observe contrasts between the cross-diatheses distribution of distinct types of idioms. One type of idiom (which we will label 'phrasal') distributes differently in the verbal passive diathesis versus the transitive, unaccusative and adjectival passive diatheses: it cannot be specific to the verbal passive, but can be specific to the latter diatheses. Another type of idiom ('clausal'), in contrast, does not discriminate between diatheses in this way: Idioms of this type tend to be specific to a single diathesis. We then show that a construct-i-con type of theory cannot account for these findings. To account for these systematic distinctions, which idioms (the archetypal 'construction' à la CxG) exhibit, the theory requires more than cognitive principles, reference to functional needs, and inheritance of properties between stored entities ('constructions').

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[1] This approach is also referred to as Cognitive Construction Grammar (CCxG); see Boas (2013) for an overview of this versus other varieties of construction grammar models.

The structure of the paper is as follows. Sections 2 and 3 draw a distinction between lexically headed idioms, which we label 'phrasal' idioms, and idioms headed by a sentential functional head, which we label 'clausal' idioms, and discuss each type (respectively), paying particular attention to their distinct distribution across diatheses. §4 offers additional evidence for the partition into phrasal and clausal idioms, and lays out the implications regarding a CxG-type model. §5 sketches an account for the findings in the framework of a derivational and modular architecture of grammar.

2 Phrasal idioms

It has sporadically been observed in the literature that the verbal (eventive) passive (e.g., *sold* in 'The first costumer was sold the car') and the adjectival (stative) passive (e.g., *shaven*) differ regarding the distribution of idioms. While there do not seem to be idioms specific to the verbal (eventive) passive (i.e., idioms in the verbal passive that have no transitive (active) alternant), there are idioms specific to the adjectival (stative) passive (see Ruwet 1991 for English and French, and Dubinsky & Simango 1996 for Chichewa). A first quantitative survey of idiom dictionaries examining these observations is reported in Horvath and Siloni's 2009 study of Hebrew idioms: Out of 60 predicates sampled for 4 diatheses – verbal passive, adjectival passive, transitive, and unaccusative– only the verbal passive exhibited no unique idioms. An idiom is considered 'unique' to a given diathesis α, if α does not share the idiom with its (existing) root-counterpart β, which α would most directly be related to by derivation. Specifically, verbal passives, adjectival passives, and unaccusatives are unique if there is no corresponding transitive idiom. Transitives are unique if there is no corresponding unaccusative idiom. Except for the verbal passive, all other three diatheses can head unique idioms.[2] This will be illustrated shortly with English examples in (4–6).

Two observations are in order. First, the idioms mentioned in the above studies are all phrasal idioms (VP and AP) involving no sentential functional categories such as auxiliaries, negation, etc. Second, verbal passives in Hebrew are known to be rarer in spoken language in comparison to say English (Berman 2008), which may affect the inventory of verbal passive idioms in the language.

In light of the above, we ran a parallel survey of English idiom dictionaries. We believe such surveys are necessary for the study of idiom distribution, as speakers may sometimes have a hard time distinguishing whether a certain idiom variant exists and is commonly used or only could exist, i.e., is a priori possible, but is not documented. This is so because the spontaneous formation and learning of novel idiomatic expressions is part of speakers' linguistic competence. Also, knowledge of idioms varies considerably among speakers (similar to vocabulary knowledge).

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[2] The survey proceeded as follows. 60 predicates of each diathesis were sampled from a verb dictionary. The number of predicates out of the sample of 60 giving rise to unique phrasal idioms were counted. This was done by searches of idiom dictionaries, followed by Google searches to check occurrences of relevant root-mate idioms, and consultation of native speakers regarding the results. The number of unique idioms found: 0 verbal passive ones; 21 unaccusatives; 23 transitives; and 13 adjectival passives.

We have systematically distinguished between phrasal and clausal idioms, as defined in (1) and illustrated in (2).

(1) Phrasal vs. clausal idioms

    a. Phrasal Idioms are headed by a lexical head (e.g., 2a).

    b. Clausal Idioms are headed by a sentential functional head (a fixed tense or mood, a modal, obligatory (or impossible) sentential negation or CP-material); they are not necessarily full clauses (e.g., 2b)

Fixed sentential material is specified in parentheses. Non-idiomatic material within idioms is marked by italics.

(2) a. land on *one*'s feet
       'make a quick recovery'

    b. can't see the forest for the trees   (modal, negation)
       'doesn't perceive the whole situation clearly due to focusing on the details'

Given that 'idiom' is a pre-theoretic term referring to various types of fixed expressions, we defined a core set. The set consisted of conventionalized multilexemic expressions whose meaning is figurative (metaphoric) and unpredictable by semantic composition. A property often mistakenly conflated with the unpredictability of idioms' meaning is the level of opacity or transparency of their meaning. Idioms indeed differ from one another in the level of their transparency (opacity). For example, the phrasal and clausal idioms in 3a and 3b respectively may be felt more opaque than those in (2a–b). However, the degree of opacity can be determined only once we know the meaning of the idioms; neither the former nor the latter meanings can be predicted based on the meaning of their building blocks. Hence, the meanings of the idioms in (2) just like those of the idioms in (3) are unpredictable (even if a posteriori, more transparent). Such idioms are therefore part of the core set we have defined and included in our study.

(3) a. cool *one*'s heels
       'wait'

    b. can't hold a candle to *someone/something*   (modal, negation)
       'be not as good as someone/something else'

We first concentrated only on phrasal idioms. This enabled us to examine a coherent set of idiomatic expressions.

The English survey we ran produced similar results to those of the Hebrew one. The transitive, unaccusative, and adjectival passive exhibited unique idioms, just like their Hebrew counterparts.[3] Examples of unique unaccusative (4), adjectival passive (5), and transitive (6) idioms are given below. Notice that the nonexistent idiomatic version is no less plausible than the existing idiom. (# means the relevant sequence of words has no idiomatic meaning.)

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[3] The English survey was conducted following the guidelines in Horvath & Siloni (2009) (see note 2). The number of predicates out of the sample of 60 giving rise to unique phrasal idioms in English: 15 unaccusatives; 18 transitives; 10 adjectival passives.

(4)   a. burst at the seams   (unaccusative)
           'filled (almost) beyond capacity'

       b. #burst *something* at the seams   (transitive)

(5)   a. caught in the middle   (adjectival passive)
           'trapped between two opposing sides'

       b. #catch *someone* in the middle   (transitive)

(6)   a. turn *something* on its ear   (transitive)
           'change something in a surprising and exciting way'

       b. #turn on its ear   (unaccusative)

However, unlike in Hebrew, the verbal passive in English turned out, prima facie, to present unique verbal passive idioms for 2 out of the 60 predicates, namely for *caught* and *bitten*. These idioms are given in (7).

(7)   a. caught in the crossfire
           'hurt by opposing groups in a disagreement'

       b. bitten by the *x* bug (where *x* forms a compound with *bug*)
           'having the need/desire/obsession for *x*'

These phrasal idioms can be suspected at first to constitute unique verbal passive idioms, due to their listing in idiom dictionaries in the passive form, and not in the active, in contrast to the norm of listing verb phrase idioms in dictionaries in the active form. Moreover, according to native speakers, these forms can be modified by adverbials of duration or appear in the progressive, suggesting that they have eventive, verbal occurrences.

However, on closer examination, both of these turned out not to constitute true counterexamples to the generalization that there are no idioms unique to the verbal passive. Starting with 7a, the idiom *caught in the crossfire*, which indeed appears in the verbal passive, in fact is attested – based on Google searches accompanied by native speakers' judgments – also in the transitive (active) form, as in (8), for instance; hence it is not a unique verbal passive idiom.

(8)   a. This **caught him in the crossfire** between radical proponents of
           independence and French opponents of anti-colonialism.

                                                                           (Scheck, 2014:282)[4]

       b. ...the Israeli-Palestinian conflict, which has often **caught them in the
           crossfire**.   https://goo.gl/f2FbbG

The idiom in 7b is instantiated by versions such as *bitten by the travel bug*, *bitten by the acting bug*, etc. These, just like 7a, can be true verbal passive forms; however, again,

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[4] Scheck, Raffael. 2014. *French Colonial Soldiers in German Captivity during World War II*. Cambridge: Cambridge University Press. Available at https://goo.gl/QAGf9E. All online examples accessed 9 December 2016.

Google searches turn up a significant number of active transitive examples of the same idiom, e.g., (9–10).

(9) Before the **acting bug bit me** I had dreamed of being another Glenn Cunningham. (Halbrook 2001, 66)[5]

(10) It was during my time in the Army in the 1960s and 1970s that **the travel bug bit me**. (MacKrell 2006, Introduction)[6]

The listing of (7a–b) in the passive participial form may well be due to the fact that in addition to occurring as a verbal (eventive) passive, they are also attested in the adjectival (stative) passive; the latter point is demonstrated by the idioms' occurrence as complements of verbs selecting APs but not VPs, such as *seem* and *remain* (Wasow 1977), as illustrated by (11–12).

(11) a. Everyone else seems **caught in the crossfire** between these two, I honestly feel bad about everyone involved. https://goo.gl/trJp5o

   b. The Starbucks coffee chain remains **caught in the crossfire** of a dispute over "open carry" laws... https://goo.gl/PMCiMF

(12) a. ...and Kevin remains **bitten by the travel – and mapping – bug**. https://goo.gl/xC8kWp

   b. It made an impression on Bowley, and he too seems **bitten by the renovation bug**... https://goo.gl/H04LWn

More generally, in the case of English in particular, it is important to keep in mind that there is the interfering factor of the common identity of form between verbal passives and adjectival passives, and only diagnostics can establish whether or not the particular idiom is indeed a verbal passive, and not (only) an adjectival passive one (see Wasow 1977 for diagnostics).

We can thus conclude that the idioms in (7) are not exceptions to the generalization that there is no unique idiom in the verbal passive.[7] The next question is what can explain this.

A priori, two alternative types of explanations for the above generalization come to mind: a derivation-based account in the spirit of derivational approaches of Generative Grammar or alternatively, an inheritance-based account, along the guidelines proposed by CxG. Abstracting away from details, a derivation-based account would have the verbal passive formed beyond the domain of special meanings, which would prevent verbal passives from having their own special/idiomatic meaning. An inheritance-based account would have the verbal passive inherit the inability to give rise to idioms that it

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[5] Halbrook, Hal. 2011. Harold – The Boy Who Became Mark Twain. New York: Farrar, Straus and Giroux. Available at https://goo.gl/ivWkAQ.

[6] MacKrell, Thomas. 2006. One Orbit – Around the World in 63 Days. Victoria, Oxford: Trafford. Available at https://goo.gl/bRlHKA.

[7] Additional idioms (headed by predicates not included in our sample) that may be suspected to be unique verbal passive idioms are discussed by Horvath & Siloni (2016), and are shown to also conform to the generalization.

does not share with its transitive alternant from the inability of verbal passives to lack a transitive alternant.

A first indication that an inheritance-based account is not on the right track comes from inspection of the transitive-unaccusative alternation. This alternation manifests regularity at the verb level, but pervasive uniqueness at the idiom level. Intransitive unaccusative verbs have a transitive alternant (with a Cause external role) and vice versa (13), except for isolated instances (Härtl 2003, Reinhart 2002, among others).[8]

(13)   a. Dan / The storm / The stone broke the window.
       b. The window broke.

In other words, there are sporadic, isolated gaps in the transitive-unaccusative verbal alternation but the paradigm is rather regular. Nonetheless, there is pervasive uniqueness, namely, unpredictable gaps are common, at the idiom level. If so, then, the distribution of phrasal idioms across diatheses is not determined by or inherited from the degree of productivity of their respective predicates.

In sum, an inheritance-based account does not seem to be able to account for the observation that the verbal passive, unlike the transitive, unaccusative and adjectival passive cannot head unique phrasal idioms. Additional evidence against an inheritance-based account comes from clausal idioms, which are discussed in the next section.

3 Clausal idioms

As defined in 1b, clausal idioms are not necessarily full clauses; they are headed by a sentential functional element: a fixed tense or mood, a modal, obligatory (or impossible) sentential negation or CP-material. Examples of clausal idioms are given below: 2b and 3b repeated as (14a–b) and additional examples in (14c–e).

(14)   a. …can't see the forest for the trees   (modal, negation)
           'doesn't perceive the whole situation clearly due to focusing on the details'
       b. can't hold a candle to *someone/something*   (modal, negation)
           'be not as good as someone/something else'

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[8] For example, the transitive alternant may be missing idiosyncratically and sporadically in a given language for a few instances, but these instances have a transitive alternant with a Cause role at some other stage in the evolution of the same language (e.g., the recently developing transitive *faint* in Hebrew (i)) or in other languages at present (e.g., existence of the transitive *fall* in Hebrew (ii), but not in English).

(i)   *Barur še-hu xavat bo   dey   xazak im hu ilef   oto.*
      evident that-he hit   in.him rather strong if he fainted.ᴛʀᴀɴsɪᴛɪᴠᴇ him
      'It is evident that he hit him rather strongly if he made him faint.'

                                                                    https://goo.gl/GK7MWR

(ii) *Dan hipil   šney sfarim.*
      Dan fell.ᴛʀᴀɴsɪᴛɪᴠᴇ two books

    c. butter wouldn't melt in *someone*'s mouth   (modal, negation)
        'someone is acting innocent'

    d. The squeaky wheel gets the grease.   (tense)
        'The most noticeable (loudest) ones are the most likely to get attention.'

    e. not have a leg to stand on   (negation)
        'have no support (for your position)'

    f. Where does *someone* get off *doing something*?   (interrogative, wh-phrase)
        'Where does someone get the right to/how dare someone do something?'

One may wonder at this point whether some of what we consider clausal idioms here would not be classified more appropriately as proverbs rather than (clausal) idioms. Indeed, the common though informal distinction between proverbs vs. idioms is worth some clarification.

Proverbs have no precise linguistic definition. Just like our clausal idioms, they too are headed by some functional, rather than lexical, head. The definition we have given to delineate the core set of idioms, given the goals of our study, is aimed at obtaining evidence about lexical storage; therefore, our idioms all have properties that force them to be stored, and specifically stored in the grammar (not in extralinguistic storage in general memory). Consequently, the questions we need to ask regarding any clausal idiom suspected to be a proverb are: (a) Is the meaning of the expression unpredictable based on composition of its parts and does it involve figuration? If so it must be stored; (b) Is there evidence that it is stored in the storage component of the grammar, and not extragrammatically? The clausal idioms used in our study satisfy both of these criteria (on satisfaction of criterion (b), see our discussion of examples 19–22 below), thus they are properly falling within the set of relevant idiom data to be considered. As for whether some of them may be felt to be proverb-like (due to some additional, stylistic, aspectual or other properties) this is not a factor that effects the validity of the conclusions drawn based on them, as long as they meet the criteria for intra-grammatical (lexical) storage, as explained above.[9]

Unlike phrasal idioms, clausal idioms do occur as unique to the verbal passive. Examples are given in (15–16) for English and (17–18) for Hebrew. As mentioned in §1, it is

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[9] Observe that there is a difference between the various (fixed) clausal expressions in terms of the presence/absence of figuration they manifest. Expressions such as (i) are fixed in form and are felt to be proverbs (as pointed out by an anonymous referee), but involve no figuration and hence are not classified as idioms according to our criteria; in contrast the expressions in (ii) do manifest figuration and constitute idioms under our definition. At the same time, both (i) and (ii) may be felt to be proverbs. This intuitive notion does not seem to be associated with figuration. A property that does appear to play a role in the perception of a fixed clausal expression as a proverb is that it applies to a generic, rather than episodic, situation. (This property is orthogonal to qualifying as an idiom.)

  (i)   a. *Two wrongs don't make a right.*

         b. *When the going gets tough, the tough get going.*

  (ii)   a. *A stitch in time saves nine.*

         b. *A chain is only as strong as its weakest link.*

often difficult to decide whether a certain idiom variant exists or only could exist, but not documented, and constitutes an ad hoc "playful" intended distortion, alluding to an existing idiom. Our data therefore are based on idiom dictionaries and the diathesis/es that they list the idioms in. In addition, however, we have googled idioms to check their existence in root-mate variants. We did not consider isolated occurrences, including playful distortions, which mostly appear in specific styles, such as media language, as evidence of existence.

(15) a. might/may as well be hung/hanged for a sheep as (for) a lamb   (modal)
          'may as well commit a larger transgression, as the same punishment will result'
     b. #(They) might/may as well hang *someone* for a sheep as (for) a lamb.[10]

(16) a. Gardens are not made by sitting in the shade.   (negation, tense)
          'Nothing is achieved without effort.'
     b. #One doesn't make gardens by sitting in the shade.

(17) a. Nigzezu   maxlafot-av.   (tense)
          sheared.Vpassive hair-his

          'lost one's power/influence.'

     b. #gazezu   et   maxlafot-av.
          sheared.TRANSITIVE.IMPERSONAL ACCUSATIVE hair-his

(18) a. Hutla   ha-kubiya.   (tense)
          cast.Vpassive the-die

          'The process is past the point of return.'

     b. #Hetilu   et   ha-kubiya.
          cast.TRANSITIVE.IMPERSONAL ACCUSATIVE the-die

Thus, while there are no unique phrasal idioms in the verbal passive, there appear to exist clausal idioms unique to the verbal passive. This provides additional evidence against an inheritance-based account of the lack of phrasal idioms unique to the verbal passive, that is, against the proposal that it is the necessary existence of a transitive alternant for all verbal passives that is inherited by (or transmitted to) the corresponding phrasal idioms. Initial evidence that such an inheritance-type account is not on the right track was presented in §2 based on inspection of the transitive-unaccusative alternation. This alternation, as we noted, manifests regularity at the verb level, but pervasive uniqueness at the idiom level. Its behavior thus is incompatible with the idea that there is inheritance of properties from the verb level to the idiom level. Our findings regarding the existence of clausal idioms unique to the verbal passive, exemplified in (15)–(18), are also incompatible with such an inheritance-based account. If it was indeed merely inheritance by the verbal passive idiom of the non-uniqueness property of the verbal diathesis

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[10] A reviewer called our attention to the existence of occurrences of the idiom in the unaccusative. One online dictionary (out of eight) listed the clausal idiom in the unaccusative form, not in the verbal passive: *One may/might as well hang for a sheep as a lamb.*

(i.e., necessary existence of a transitive alternant), then there does not seem to be any reason why phrasal idioms would inherit "non-uniqueness", while clausal idioms in the verbal passive would not do so. So not only is there no inheritance of distribution from the verb level to the idiom level, as shown by the transitive-unaccusative alternation, but in addition, an inheritance-based account could not explain the distributional distinction between phrasal versus clausal idioms regarding the verbal passive. Note also that the discrepancy between phrasal and clausal idioms with regard to uniqueness in the verbal passive seems to hold across languages, yet it certainly cannot be attributed to general cognitive constraints or functional needs of the constructions. If all the theory has at its disposal is inheritance networks, cognitive constraints, and functional needs to explain generalizations exhibited by members in the construct-i-con, the above findings cannot be accounted for.

One could perhaps suggest that unlike phrasal idioms, clausal idioms are stored extra-grammatically, outside the construct-i-con (similar to memorized language material such as lines of poems, etc.), and therefore they do not inherit the non-uniqueness property from the verbal passive. Such a line of explanation however does not seem to be tenable. Unlike memorized language material, clausal idioms interact with the grammar and it is thus hardly plausible that their storage is extra-grammatical. First, they can appear as embedded clauses within various matrix contexts (19a–b). Further, they need not be full clauses and can include a non-idiomatic argument (20a–b). Moreover, the non-idiomatic element can occur within a sub-constituent (21a–b). Finally, they can include variable pronouns obligatorily bound by a non-idiomatic noun phrase (22a–b), (the variable pronoun indicated by *one* has to be bound by the subject in 22a and 22b).

(19)   a.   One should take into account the fact that [the squeaky wheel gets the grease].   (tense)
           'One should take into account the fact that [the most noticeable (loudest) ones are the most likely to get attention].'

           b.   They had to realize that [the leopard does not change his spots].   (negation)
           'They had to realize that [one remains as one is even if one pretends otherwise/tries hard].'

(20)   a.   can't see the forest for the trees   (modal, negation)
           'doesn't perceive the whole situation clearly due to focusing on the details'

           b.   wouldn't touch *someone/something* with a ten-foot pole   (modal, negation)
           'wouldn't have anything to do with someone/something'

(21)   a.   wouldn't put it [past *someone*]   (modal, negation)
           'consider it possible that someone might do something wrong or unpleasant'

           b.   butter wouldn't melt in [*someone*'s mouth]   (modal,negation)
           'someone is acting innocent'

(22)   a.   can't fight *one's* way out of a paper bag   (modal, negation)
           'be an extremely inept'

           b.   would give *one*'s right arm (for…)   (modal)
           'would like something very much'

Below we turn to an additional distinction between phrasal and clausal idioms in order to reinforce our conclusion thus far.

4 Diathesis sharing vs. rigidity

In both English and Hebrew, phrasal idioms can be common to, i.e., shared between, root-alternants. The verbal passive always shares its idiomatic meaning with the corresponding transitive (e.g., 23), as discussed in §2. Moreover, the other diatheses (the transitive, unaccusative, and adjectival passive), which appear in unique idioms, can also share their idiomatic meaning with their root-alternants (24–25).[11]

(23)   a.   spill the beans   (transitive)
            'divulge the secret'

        b.   The beans were spilled.   (verbal passive)

(24)   a.   burst *someone*'s bubble   (transitive)
            'destroy someone's illusion'

        b.   someone's bubble burst   (unaccusative)

(25)   a.   carve *something* in stone   (transitive)
            'fix some idea/agreement permanently'

        b.   carved in stone   (adjectival passive*)*

In contrast, the clausal idioms in our preliminary investigation, unlike the phrasal ones, fail to exhibit sharing across diatheses. Clausal idioms seem to be unique, as illustrated by examples (26–29) below.

Transitive vs. verbal passive

(26)   a.   can't see the forest for the trees   (modal, negation)
            'doesn't perceive the whole situation clearly due to focusing on the details'

        b.   #The forest can't be seen for the trees.[12]

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[11] We have conducted two surveys of shared idioms. The results are as follows. The number of English transitive predicates (out of the sample of 60) sharing phrasal idioms with the verbal passive: 35, with unaccusative: 17, and with adjectival passive: 21. The number of Hebrew transitive predicates (out of the sample of 60) sharing phrasal idioms with the verbal passive: 10, with unaccusative 16, and with adjectival passive: 5. Note that while phrasal idioms in the verbal passive always have a transitive version; it is not the case that any transitive idiom has a corresponding verbal passive idiom, as discussed in §5.

[12] This idiom does have occurrences in the verbal passive (found by Google searches). However, the idiom shows signs of being in the process of developing a phrasal version. This process is indicated by the existence of a large number of occurrences of this idiom in a phrasal version headed by a variety of lexical verbs, each yielding the same meaning as the original clausal idiom: *ignore the forest for the trees*, *miss the forest for the trees*, *neglect the forest for the trees*. The evolving use of this idiom in a phrasal form may be the reason for the occurrences of a verbal passive version. See also fn. 17.

Transitive vs. unaccusative (in the adjunct clause)

(27) a. You can't make an omelet without breaking a few eggs.   (modal, negation)
        'It is difficult to achieve something important without causing any
        unpleasant effects.'
     b. #You can't make an omelet without a few eggs breaking.

Adjectival passive vs. transitive

(28) a. The road to hell is paved with good intentions.   (tense)
        'People often mean well but do bad things.'
     b. #Good intentions pave the road to hell.

Unaccusative vs. transitive

(29) a. do(es) not grow on trees   (auxiliary, negation)
        'is not abundant, not to be wasted'
     b. #do(es) not grow *something* on trees

One might think at this point that the emerging lack of cross-diathesis flexibility of clausal idioms could be due to the fact that in English the relevant diathesis alternations involve syntactic movements reordering subparts of the idiom. These movements might be suspected to be incompatible with the idiomatic reading for reasons of information structure, independent of the diathesis change itself. However, examining clausal idioms with regard to parallel diathesis alternations in Hebrew, a language in which diathesis alternations do not have to involve such potentially interfering factors, seems to point in the same direction. For instance, the Hebrew clausal idiom in 30a does not require reordering (nor addition of words), when undergoing the diathesis alternation in 30b; still the latter is impossible.

(30) a. kše-xotvim   ecim, nitazim   švavim.
        when-chop.TRANSITIVE.IMPERSONAL trees, sprinkle.UNACCUSATIVE chips
        (tense)

        'When you act, there are risks.' 'Where trees are felled chips will fly.'
     b. #kše-xotvim   ecim, metizim
        when-chop.TRANSITIVE.IMPERSONAL trees, sprinkle.TRANSITIVE.IMPERSONAL
        švavim.
        chips

If knowledge of language were nothing more than an inventory of constructions whose properties derive from cognitive constraints, functional needs and inheritance hierarchies, there would be no way to explain why the clausal idioms we have examined (full and partial sentential structures) are unique to their diathesis, while phrasal idioms are commonly shared across diatheses.

In sum, an inheritance-based account cannot explain why idioms headed by members of the unaccusative alternation show pervasive uniqueness at the idiom level, although

the verbal alternation is rather systematic. Moreover, under such an account, it is completely unclear why clausal idioms can be unique to the verbal passive as well as to other diatheses, and even seem to be unique generally, while phrasal idioms cannot be unique to the verbal passive, but can be unique to other diatheses.

Below we consider what an alternative approach, one that can provide a principled account for the above generalizations, should look like, and sketch our proposal in terms of idiom storage, which derives these findings.

5 Alternative, derivational accounts

CxG imposes no principled limitation on lexically stored syntactic objects and assumes no syntactic (online) derivation, only stored objects ("constructions"), whose interrelations are expressed via inheritance networks. The inability of CxG to capture the distributional asymmetries of diatheses in idioms established in the preceding sections is a direct consequence of these fundamental characteristics of the model. We believe that in contrast to the CxG model, modular derivation-based theories, namely theories incorporating a fundamental distinction between lexically stored entities versus syntactic objects derived by the computational system of grammar have the potential to provide an adequate account for the above findings. Before sketching the particular account that we propose, observe what assumptions are available in derivation-based modular architectures – and absent in non-derivational, construction-based models – that seem prerequisites for accounts aiming to capture the diathesis asymmetries discussed above.

What seems crucial for conceiving a syntactic account is the incremental building of structure in the syntactic derivation, yielding units in the course of the derivation ("phases") that impose locality limitations on the accessibility of special/idiomatic meanings. As for lexical accounts (involving the storage component of grammar) what is crucial would be principled constraints on what can be stored in the lexicon and in what manner, as will be explained in what follows.

In the remainder of this section, we sketch an account along the latter lines within our model of Type Sensitive Storage (TSS) (Horvath & Siloni 2016). The model derives the diathesis asymmetries discussed in the previous sections from a different storage technique motivated for phrasal versus clausal idioms. Under this proposal, the distinct storage technique of phrasal versus clausal idioms is a direct consequence of their having a lexical versus a functional head, respectively. Each storage strategy, in turn, results in a different pattern of distribution across diatheses. As summarized in (31), the Type-Sensitive Storage model suggests that phrasal idioms are stored as subentries of existing lexical entries, whereas clausal idioms constitute independent lexical entries on their own, that is, are not stored as subentries.

(31) The Type-Sensitive Storage (TSS) Model

    a. Idioms are stored as part of our linguistic knowledge (not as general, non-linguistic information).

b. Phrasal idioms – Subentry Storage: Phrasal idioms are stored as subentries of the lexical entry of their head (and possibly of their other constituents).[13]

c. Clausal Idioms – Independent Storage: Clausal idioms are stored as independent entries on their own.

Let us see how this would account for the findings. Subentry storage is contingent upon the listing, i.e., the existence, of the (mother) entry in the lexicon. The verbal passive is formed beyond the storage component, the lexicon (Baker, Johnson & Roberts 1989, Collins 2005, Horvath & Siloni 2008, Meltzer 2012, among others). It follows that the verbal passive is not stored; it is not a lexical entry. Hence, the verbal passive cannot have subentries. Thus, under 31b, phrasal idioms cannot be unique to the verbal passive because such idioms cannot be stored. Phrasal idioms in the verbal passive can only be formed by passivization of their transitive counterparts. Hence, they always share their idiomatic meanings with the corresponding transitive. The transitive, unaccusative and adjectival passive, in contrast, are formed in the lexicon (Horvath & Siloni 2008; 2011, Reinhart 2002), and stored there; therefore, they can have subentries.

It should be observed that unlike the existence of a transitive (active) version for every verbal passive phrasal idiom, we, correctly, do not predict the automatic existence of a verbal passive version for every transitive idiom. Since verbal passives are derived in the syntax, the question determining whether or not a transitive idiom will exist in the verbal passive depends on whether the idiom is able to undergo the syntactic operation of passivization resulting in a well-formed output. This in turn involves interpretive factors, such as whether the idiom chunk to become the derived subject of the passivized idiom has the appropriate semantic properties, e.g., referentiality, to be compatible with the information structure consequences of being in subject position. Hence, the contrast between *The beans were spilled* vs. **The bucket was kicked* (see for instance Nunberg, Wasow & Sag 1994, Ruwet 1991, Punske & Stone 2014 on what factors may determine whether or not a verbal passive version of a transitive idiom is possible).

Clausal idioms in contrast are stored as independent entries. Let us first motivate this claim. The head of clausal idioms is a functional, not a lexical, element. Functional elements unlike lexical ones are closed class items, have no descriptive content (Abney 1987), and bear no thematic relation to their complement. Functional elements have often been argued to be stored in a separate lexicon, e.g., Emonds' 2000 "Syntacticon", or as "f-morphemes" (Distributed Morphology). One storage option for clausal idioms would be storage as subentries of their functional head. This would, for instance, mean storage of the idiom *not have a leg to stand on* as a subentry of its functional head, Neg. This would be storage of entities that have descriptive content in the "functional lexicon", where entries do not have descriptive content. This seems to us incoherent. We therefore do not pursue this option.

Two additional options come to mind: (i) Clausal idioms are stored as subentries of the lexical head of the "extended projection" (in Grimshaw's 1991 terms) constituting

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[13] The question as to whether they are also stored as subentries of the lexical entries of their other constituents is important but irrelevant for our purposes here. We therefore abstract away from it here.

the clausal idiom, namely, storage under the verb on a par with VP idioms. (ii) Clausal idioms are independent entries on their own; they are not stored as subentries of another lexical entry 31c. Subentry storage under the lexical head (option (i)) predicts the absence of unique clausal idioms in the verbal passive (just like in the case of phrasal idioms); this is contradicted by our findings (e.g. 15–18).

Independent storage 31c predicts occurrence of unique clausal idioms in the verbal passive, in concert with our findings. Under independent storage, clausal idioms get lexicalized in one piece (following consistent use of the expression in the relevant contexts). Clausal idioms thus do not require that their subconstituents be represented as entries in the lexicon. They get stored as a whole and can therefore include any diathesis (or any other syntactic output). Hence, there should be clausal idioms unique to the verbal passive. There are thus reasons to adopt the independent storage strategy for clausal idioms.[14]

If phrasal idioms were stored as independent constructions, on a par with clausal idioms, there would be no reason why they could not be unique to the verbal passive. Precisely because phrasal idioms are not stored constructions (contra CxG's assumptions), they cannot be unique to the verbal passive.

The difference in storage that the two types of idioms employ can also explain the second distinction revealed between them. While phrasal idioms commonly share idiomatic meanings across root-counterparts, clausal idioms tend not to be shared across diatheses (§4). As already discussed above, a verbal passive phrasal idiom must share its idiomatic meaning with the corresponding transitive because it is formed by syntactic passivization of the latter (it is not stored). Further, under the TSS model, sharing of phrasal idioms between the transitive and its (lexically derived) unaccusative or adjectival passive alternants is the result of the links between root-related entries in the lexicon, which can induce spread of special meanings and idiomatic expressions between the entries. Sharing is not automatic though, as it requires additional listing under the entry of the relevant alternant; hence there are also unique phrasal idioms in these diatheses, as discussed in §2.

In contrast, under 31c, clausal idioms are stored as independent entries, not as subentries of other entries that may be linked to root-mates. The model therefore predicts that nothing would induce sharing of idiomatic meaning between the transitive and its unaccusative or adjectival passive alternants; such sharing thus should be unattested or rare, as our preliminary results show.[15]

Verbal passives, unlike the transitive, unaccusative, and adjectival passive, are derived in the syntax. So there is no a priori reason not to expect the application of this operation to (some) transitive clausal idioms. If that occurred, at least some clausal idioms would

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[14] Interesting questions arise with regard to the storage of idioms with no recognizable internal structure (e.g., *trip the light fantastic*), as well as idioms (arguably) headed by a non-sentential functional element (a light verb, a functional preposition, or a conjunction, as in *take a shower*, *in a rut,* and *cut and dried*, respectively). These important questions are beyond the scope of this paper and are not directly relevant for the issue of cross-diatheses distribution.

[15] A priori, nothing rules out the independent development and storage of a clausal idiom in a root-related diathesis. However, we predict this to be very rare (if at all attested) as nothing induces this.

be available in the verbal passive.[16] If no sharing occurs in the case of clausal idioms, it could be due to the inaccessibility of clausal idioms to internal syntactic operations, resulting from their being lexical entries inserted into the syntax as single one-piece units.[17]

6 Conclusion

We have distinguished between two different types of idioms – phrasal idioms vs. clausal idioms – and investigated their cross-diathesis distribution. Phrasal idioms distribute differently in the verbal passive vs. other diatheses: they cannot be specific (unique) to the former but can be specific to the latter. Clausal idioms do not seem to discriminate between diatheses in this way: They seem specific to a single diathesis. These systematic distinctions show that even the properties of idioms, the archetypal "construction" à la CxG, require more than cognitive principles, reference to functional needs, and inheritance networks of stored entities ('constructions') to be accounted for. An adequate theory of idioms must have recourse to a distinction between stored items and unstored derivational outputs, and to grammatical distinctions such as those between diatheses, and those between functional versus lexical elements. We sketched an account of the above findings, distinguishing between diatheses according to where they are formed, and storing idioms according to the type of element heading them (lexical or functional). Thus, the domain of idioms (surprisingly, from the CxG point of view) turns out to reinforce the conclusion that there must be more to knowledge of language than a hierarchical inventory of items and extra-grammatical constraints.

Acknowledgements

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[16] Whether or not syntactic passivization would apply to a particular clausal idiom would depend on whether the idiom has the semantic properties compatible with the changes in information structure induced by passivization (as mentioned above concerning phrasal idioms).

[17] A Google search reveals that the verbal passive version of the idiom in (i) does have some occurrences, though substantially fewer than the transitive form.

    (i)   *could've knocked me over with a feather*
           'I was extremely surprised, astonished'

    (ii) *(#)I could've been knocked over with a feather.*

    The question is whether or not these occurrences indeed are clausal idioms at all. This cannot be unequivocally determined because along with the clausal idiom (i), this idiom turns out to have also a phrasal transitive version: 'knock (someone) over with a feather' (listed in this form, with no fixed tense, no modal (and no fixed subject or object) (see the online Free Dictionary https://goo.gl/cv7RlT). See also fn. 12.

research: the nature of lexical representations and the division of labor between the lexicon and post-lexical derivation, a theme recurrent in Steve's work. More specifically, the paper has consequences with regard to the status of lexical vs. syntactic operations for capturing relations between diathesis alternants. Its empirical basis involves particular differences uncovered between diathesis alternations; our findings provide novel reinforcement for the distinction between lexically versus syntactically derived diatheses. This is a topic that Steve has directly contributed to in his paper *Comments on the paper by Wasow*, delivered in 1976 at the ground-breaking UC, Irvine Conference on the Formal Syntax of Natural Language, and published as Anderson (1977). We wish to thank two anonymous referees for their helpful comments.

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