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Argument structure hierarchies and alternations in causative and double object constructions

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Many varieties of Arabic display a causative construction that adds a causer to the argument structure of the underlying verb. When this verb is transitive, the causative derivative is ditransitive. In the Arabic varieties, these ditransitive causative verbs display a double object alternation fully parallel to the alternation that change of possession verbs like *give* display. I claim that two current analyses of the double object alternation do not extend naturally to Arabic causative constructions. Rather, the parallels between causative and change of possession ditransitives in Arabic implicate an analysis of change of possession verbs in which the recipient argument (parallel to the external argument of the underlying verb in causative ditransitives) is base generated syntactically superordinate to the theme (parallel to the internal argument of the underlying verb in causative ditransitives). The unifying analysis I propose draws on certain elements of the 'VP-shell' analysis of Larson (1988) as well as the 'neo-constructionist' approach of Ramchand (2008; 2018) regarding the syntactic instantiation of argument structure. The Arabic variety I take as an exemplar of the Arabic causative construction is Syrian.
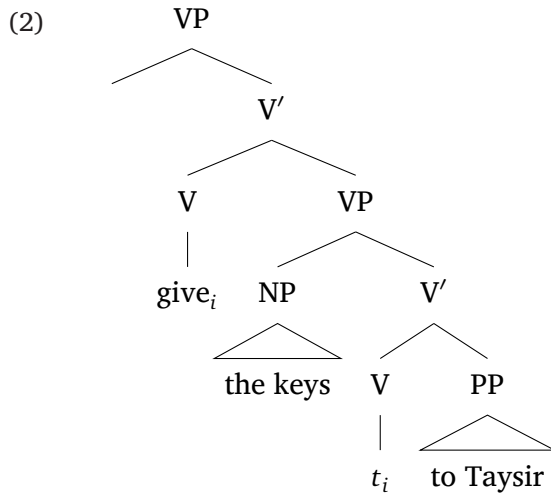
1 Introduction

I claim in this paper that causative constructions in Arabic provide evidence for a certain analysis of the double object alternation. The double object alternation is an alternation in the object frame of ditransitive verbs like *give*, which I term a 'change of possession' verb. The English 'double object frame' is illustrated in (1a). There, the individual denoted by the first argument following the verb, *Taysir*, comes into possession of the individual denoted by the second argument, *the keys*. I refer to the first object in this format as the 'indirect object' and the second as the 'direct object'. This format alternates in English with another format in which the direct object precedes the indirect object, which occurs in a prepositional phrase (PP) headed by the preposition *to*. I refer to this frame as the 'prepositional frame', illustrated in (1b). The frame alternation does not at first glance seem to disrupt the thematic roles of the respective objects, that is, (1a) and (1b) express the same proposition.
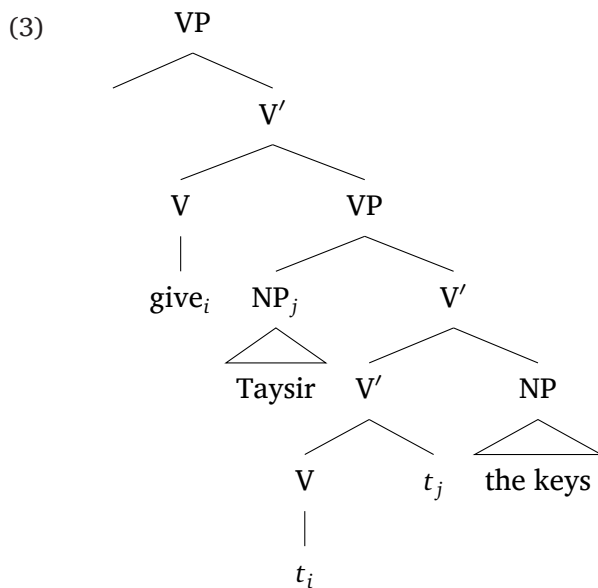
(1) a. Nuha gave Taysir the keys.   [Double Object Frame]
     b. Nuha gave the keys to Taysir.   [Prepositional Frame]

Aside from the terms 'direct' and 'indirect' object, I will also refer to the first object in both (1a) and (1b) as the 'primary object'. This is the object that raises to subject in the passive and which in Arabic may cliticize to the verb in the form of a pronominal enclitic, as I demonstrate below. I refer to the second object in each frame as the 'secondary object'. In (1a), *Taysir* is both the primary object and the indirect object, while *the keys* is the secondary object and the direct object. In (1b), *the keys* is the primary object and the direct object while *Taysir* is the secondary object and the indirect object. As far as change of possession constructions go, 'indirect object' is tantamount to the thematic role 'recipient' and 'direct object' to 'theme'. However, these thematic roles do not carry over to causative constructions in Arabic, where it will be useful to have a thematically neutral term that captures the connection between the primary object of the double object frame and the secondary object of the prepositional frame, and the connection between the secondary object of the double object frame and the primary object of the prepositional frame. These are what I refer to as the 'indirect object' and 'direct object' respectively.

The syntactic analysis of this alternation has been the subject of vigorous debate for some time. This debate has crystalized into two main approaches. One approach has its roots in Relational Grammar (Perlmutter 1978; 1983), and has been developed in the generative tradition by Larson (1988; 2014), Ormazabal & Romero (2010; 2012), Michelioudakis (2012) and Antonyuk (2015). This approach takes the prepositional frame to be the basic format from which the double object frame is derived. The prepositional frame has a 'VP shell' structure in which the lower VP hosts the theme as its specifier and the PP expressing the recipient as its complement, as illustrated in (2). The surface word order in which the verb precedes the two objects is derived by movement of the verb into the higher V position.

(2)

```
                VP
                |
                V′
              /    \
            V        VP
            |       /    \
         give_i   NP      V′
                  |      /   \
               the keys V     PP
                        |     |
                        t_i   to Taysir
```

According to Larson, the double object frame is derived from the structure in (2) with the preposition omitted. The 'external' of the two internal arguments is demoted to adjunct-of-V′, while the complement of the verb (now a bare NP) is promoted in its place, with verb raising as before, as illustrated in (2). This transformation is known as 'dative shift' (or '3-to-2 advancement' in Relational Grammar).

(3)

```
                VP
                |
                V′
              /    \
            V        VP
            |       /    \
         give_i  NP_j     V′
                  |      /   \
                Taysir  V′     NP
                       /  \    |
                      V   t_j  the keys
                      |
                      t_i
```

According to this analysis, the two object frames share a base structure in which the direct object (theme) is superordinate to the indirect object (recipient). Given the premise that thematic relations are established in the base structure, this analysis accounts for the fact that the two frames express the same thematic relations. This premise is articulated as Chomsky's (1981) Projection Principle and Baker's (1988) still stronger Uniformity of Theta-Assignment

Hypothesis, which dictates that identical theta roles across constructions are assigned in identical configurations in the base structure. In so far as the two frames in (1) display the same thematic relations, the Uniformity of Theta-Assignment Hypothesis demands a transformational analysis of the alternation.

However, another leading approach to the analysis of ditransitive constructions maintains that the two frames in (1) are not fully thematically identical. It has long been noticed that for at least some verbs, the double object frame places restrictions on the primary object that do not apply to its PP counterpart (Green 1974; Oehrle 1976).

(4)   a.   Nuha sent Taysir to the grocery store (to pick up a few things).
       b.   *Nuha sent the grocery store Taysir.

The PP in (4a) appears to refer to a goal of movement, and a grocery store is a good candidate for a goal. In (4b), though, a grocery store cannot bear whatever thematic role is attributed to it there. Green (1974), Oehrle (1976), Harley (1995) and others claim that this syntactic position is reserved for a recipient argument, which a grocery store is a poor candidate for, explaining the infelicity of (4b). It seems that there is a thematic difference between the two frames after all, which is obscured when the goal argument is human. This line of reasoning maintains that human goals reside in a grey area between locations and possessors—a grey area that plays a role in the pervasive tendency for languages to express possession with the same morphosyntax as location; see Benveniste (1966); Freeze (1992); Kayne (1993); Heine (1997); Stassen (2009). On this view, (1a) and (1b) do not express the same thematic relations and accordingly do not share a base structure. The prepositional frame has the base structure attributed to it in the dative shift analysis, that in (2), but the double object frame is not derived from it. Rather, it has the distinct base structure in (5). This is known as the 'alternative projection' approach to the double object alternation (Harley 1995; 1997; 2002; 2004; Harley & Jung 2015; Hale & Keyser 1993; den Dikken 1995; Pesetsky 1995; Bruening 2001; 2010a; 2010b; Anagnostopoulou 2003; Ramchand 2008).

(5)
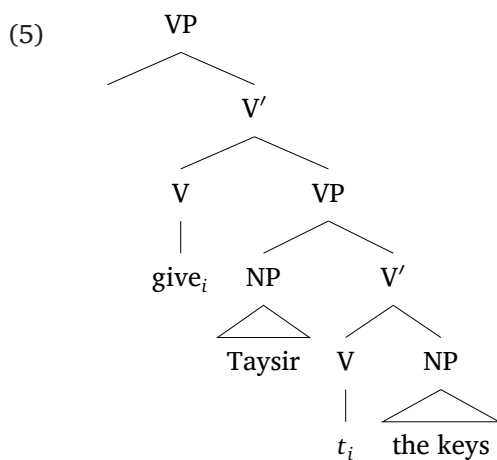
Larson (2014) reconciles his transformational account with facts like those in (4) by claiming, following Rappaport Hovav & Levin (2008), that there are two semantically distinct prepositional frames, one encoding change of location and one encoding change of possession, and the double object frame is derived form the latter. That is, facts like (4) are compatible with a transformational view of the double object alternation as long as location (4a) and recipient (1b) PPs are distinguishable in the syntax.

A third, less prominent, view of the relation between the double object and prepositional frame of ditransitive verbs maintains that the double object frame (1a) is the derivationally basic encoding of change of possession and the prepositional frame (1b) is a derivative of it (Bowers 1981; Dryer 1986; Aoun & Li 1989; Roberts 2010; Hallman 2015; Collins 2020). Bowers and Hallman reconcile this transformational account with the facts in (4) by claiming that a small class of verbs including *send* are ambiguous between a base generated change of location prepositional frame seen in *send Taysir to the grocery store* (4a) and a base generated change of possession double object frame seen in *send Taysir the letter,* that may in turn be transformed into a prepositional frame, yielding *send the letter to Taysir* and preserving the change of possession reading of the underlying double object frame. As a result, *send the letter to X* is ambiguous between a base generated locative construction where *X* is a goal of movement, that is, a location, and a derivative of the double object frame expressing change of possession, in which *X* is a recipient.

In what follows, I present evidence from causative constructions in Arabic that supports this third view and militates against the two other views described above. Section 2 discusses double object constructions in Syrian Arabic and 3 causative constructions. Section 4 discusses parallels between change of possession and causative ditransitive constructions. Section 5 details why the Arabic data are incompatible with both the dative shift and the alternative projection view of the double object alternation and section 6 spells out a specific analysis in terms of the third view.

2 Double object constructions in Syrian Arabic

Ditransitive verbs in Syrian Arabic display an alternation between a double object frame and a prepositional frame like we see in English (Hallman 2018). The double object frame is illustrated in (6a). In the prepositional frame, the theme precedes and the recipient is introduced in a PP headed by the preposition *la-* 'to', as in (6b), analogous to English. The transcription of Arabic follows the International Phonetic Alphabet (International Phonetic Association 1999) strictly except for the representation of long vowels with a macron $\bar{V}$ instead of IPA *Vː*.

(6)   a.   nuha ʕaṭ-it   tajsīr   l-mafātīħ.
                Nuha give.PFV-3FS Taysir the-keys
                'Nuha gave Taysir the keys.'

    b.   nuha ʕaṭ-it   l-mafātīħ la-tajsīr.
         Nuha give.PFV-3FS the-keys   to-Taysir
         'Nuha gave the keys to Taysir.'

The alternation seen in (6) is parallel to the English double object alternation in a variety of ways. One parallel is that the preposition that marks the indirect object in the prepositional frame is the same as that that marks locative goals, in clear cases of change of location verbs such as (7). Goals in change of location contexts can also be marked by the preposition *ʕa-* meaning 'to' or 'on', which does not mark indirect objects of change of possession verbs. That is, *la-* can be replaced by *ʕa-* in (7) but not in (6b).

(7)   nuha rāħ-it   la- / ʕa- l-mustaʃfa.
        Nuha go.PFV-3FS to / to   the-hospital
        'Nuha went to the hospital.'

Another parallel between Arabic and English double object alternations is that the primary object of the double object frame shares certain properties with the primary object of the prepositional frame, though the two bear different theta roles (recipient in (6a), theme in (6b)). For example, the primary object may be promoted to subject in the passive, as (8) illustrates.

(8)   a.   tajsīr n-ʕaṭa   l-mafātīħ.
           Taysir PASS-give.PFV the-keys
           'Taysir was given the keys.'

      b.   l-mafātīħ n-ʕaṭ-it   la-tajsīr.
           the-keys   PASS-give.PFV-3PL to-Taysir
           'The keys were given to Taysir.'

Promotion of the secondary object to subject is not possible in the double object frame, as in English.[1]

(9)   *l-mafātīħ n-ʕaṭ-it   tajsīr.
       the-keys   PASS-give.PFV-3PL Taysir
      *'The keys were given Taysir.'

An Arabic-specific primary object criterion is the possibility of cliticization to the verb in the form of an enclitic pronoun, as (10) illustrates.

(10)   a.   nuha ʕaṭ-it-u   l-mafātīħ.
           Nuha give.PFV-3FS-ACC.3MS the-keys
           'Nuha gave him the keys.'

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[1] The admissibility of (9) is a point of cross-dialectal variation in both Arabic (Ouhalla 1994; Hallman & Al-Balushi 2022) and English (Haddican 2010; Haddican & Holmberg 2012; 2019; Holmberg et al. 2019).

b. nuha ʕaṭ-it-a   la-tajsīr.
Nuha give.PFV-3FS-ACC.3PL to-Taysir
'Nuha gave them to Taysir.'

Here again, the secondary object cannot cliticize to the verb over the primary object.

(11) *nuha ʕaṭ-it-a   tajsīr.
       Nuha   give.PFV-3FS-ACC.3PL Taysir
    *'Nuha gave them Taysir.'

Another characteristic of the double object alternation is the resistance of the double object frame, in contrast to the prepositional frame, to wh-movement of the primary object, a configuration that is somewhat marginal in standard English but absolutely impossible in Syrian Arabic (12a). Note that (12a) has an admissible reading where *mīn* is construed as the subject of the verb *ʕaṭ-it* 'give.PFV-3FS' and Nuha as the indirect object (as subject, *mīn* 'who' triggers singular verb agreement but is neutral with respect to gender). Example (12a) can therefore be construed to be asking who gave Nuha the keys, presupposing that the person in question is female. But the string is ungrammatical if Nuha is construed as the agent and *mīn* as the recipient. The recipient argument can only be questioned in the prepositional frame, shown in (12b).

(12) a. *mīn ʕaṭ-it   nuha l-mafātīḥ?
          who give.PFV-3FS Nuha the-keys
        ?'Who did Nuha give the keys?'

     b. la-mīn   ʕaṭ-it   nuha l-mafātīḥ?
        to-whom give.PFV-3FS Nuha the-keys
        'To whom did Nuha give the keys?'

Another characteristic of the double object alternation is the resistance of the double object frame to an inverse scope reading, that is, a reading in which the two object quantifiers are interpreted in the opposite scopal order as their linear order (Aoun & Li 1989; Larson 1990; Bruening 2001). The double object frame in (13a) cannot be interpreted to mean that for each toy in the box, Nuha gave it to some child or other, exhausting the toys but not necessarily the children. (13a) may only mean that a specific child received all the toys (the surface scope reading). In the prepositional frame on the other hand, the two object quantifiers may be interpreted in the opposite scopal order, yielding the reading according to which each child in the class received some toy or other, exhausting the children but not necessarily the toys.

(13) a. nuha ʕaṭ-it   walad kill   luʕbe bi-ṣ-ṣandūʔ.
          Nuha give.PFV-3FS child every toy   in-the-box
        'Nuha gave a child every toy in the box.'

    b. nuha ʕaṭ-it   luʕbe la-kill   walad bi-ṣ-ṣaff.
       Nuha give.PFV-3FS toy   to-every child in-the-class
       'Nuha gave a toy to every child in the class.'

The double object construction in Syrian Arabic also shows various asymmetries identified by Barss & Lasnik (1986) that are indicative of asymmetric c-command of the secondary object by the primary object in the respective frames. Some of the diagnostics discussed by Barss and Lasnik are not applicable to Arabic,[2] but the ones that are reveal the same asymmetries found in English. For example, in the double object frame, a primary object quantifier may bind a possessive pronoun in the secondary object but not vice versa. In (14a), the indirect object *kill ṣabi* 'every youth' can bind the possessive pronoun *-u* 'his' in the direct object, and in (14b) the direct object *kill ʃantāje* 'every bag' can bind a possessive pronoun in the indirect object *la-ṣāḥib-a* 'to its owner'. But a quantificational indirect object cannot bind a pronoun in a preceding direct object (14c) nor can a quantificational direct object bind a pronoun in a preceding indirect object (14d).

(14)   a. ʕaṭē-t   kill   ṣabi   ʃantājit-u.
         give.PFV-1S every youth bag-his
         'I gave every youth his bag.'

       b. ʕaṭē-t   kill   ʃantāje la-ṣāḥib-a.
         give.PFV-1S every bag   to-owner-its
         'I gave every bag to its owner.'

       c. *ʕaṭē-t   ʃantājit-u la-kill   ṣabi.
         give.PFV-1S bag-his   to-every youth
         (?'I gave his bag to every youth.')

       d. *ʕaṭē-t   ṣāḥib-a kill   ʃantāje.
         give.PFV-1S owner-its every bag
         (*'I gave its owner every bag.')

In so far as c-command is a prerequisite for binding, these facts indicate that in both frames, the primary object c-commands the secondary object and not vice versa. Arabic also has a counterpart of the *each… the other* construction that Barss and Lasnik also mention as a test for the hierarchical order of objects, as shown in (15). Suppose there are two youths and two bags and I have mistakenly given each youth the other's bag. In this case, (15a) and (15b) are sensible in Arabic, where the quantifier precedes *t-tāni(je)* 'the other', but not (15c) nor (15d), where it follows.[3]

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[2] For example, Syrian Arabic is a negative concord language, in which negative quantifiers are always accompanied by clausal negation. As a result, negative polarity items cannot be used to detect asymmetries with respect to negative object quantifiers. Further, Arabic does not admit multiple wh-constructions, meaning that the contexts in which superiority effects are found do not arise. Other confounds plague Barss and Lasnik's other diagnostics not mentioned here.

[3] The term *tāni* is a masculine form that agrees with masculine *ṣabi* 'youth' while *tānje* is a feminine form that agrees with feminine *ʃantāje* 'bag'. A liason *-t* shows up on feminine *ʃantāje* when in construct with a following noun, represented by the gloss *of* in English.

(15) a. ʕaṭē-t   kill   ṣabi   ʃantājit   t-tāni.
          give.PFV-1S every   youth   bag   [of] the-other
          'I gave every youth the other's bag.'

      b. ʕaṭē-t   kill   ʃantāje la-sāḥib   t-tānje.
          give.PFV-1S every   bag   to-owner [of] the-other
          'I gave every bag to the other's owner.'

      c. *ʕaṭē-t   ʃantājit   t-tāni   la-kill   ṣabi.
          give.PFV-1S bag   [of] the-other to-every   youth
          (?'I gave the other's bag to every youth.')

      d. *ʕaṭē-t   ṣāḥib   t-tānje   kill   ʃantāje.
          give.PFV-1S owner [of] the-other   every   bag
          (*'I gave the other's owner every bag.')

Again, in so far as the bound reading of *tāni(je)* 'other' requires surface c-command, surface c-command tracks surface linear order in Syrian Arabic as in English, whatever the base order is.[4] The analysis presented in section 6 reflects these conclusions about the derived c-command relations between the two objects. While these observations do not shed light on the base order, they do present a point of uniformity between change of possession and causative ditransitive constructions, as I show in the following section. There, I discuss causative verbs in Syrian Arabic and show that the double object alternation they display is parallel to that described above for ditransitive constructions with *ʕaṭa* 'give'. This parallel motivates a unified analysis of causative constructions and change of possession constructions, but as I describe in section 5, neither the dative shift analysis nor the alternative projection analysis is well equipped to capture these parallels.

3 Causatives in Syrian Arabic

Like other dialects, including Classical Arabic, contemporary Syrian Arabic has a process that forms causative verbs from an independently attested base verb. The morphological exponent of causativization is gemination of the middle radical of the consonantal root from which the base verb is derived. For example, the verb *sakat* 'fall silent' is the base for the causative derivative *sakkat* 'make someone silent, shut someone up'. The stem vowel (in the second syllable) is unpredictable in the base verb but always /a/ in the perfective causative derivative and /i/ in the imperfective. This vowel tends to be elided when the syllable is light, that is, when the following consonant is syllabified as the onset of the following syllable in the environment of an inflectional suffix.

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[4] The examples in (15) have an 'unbound' reading in which *tāni(je)* has its literal meaning, namely 'second'. That is, (15d) is grammatical on the reading 'I gave the owner of the second [thing, not necessarily bag] every bag.'

Not all verbs have a causative counterpart, but the derivation nonetheless has two characteristics of productivity. One is that it is very common for a morphologically basic verb to have a causative counterpart. Although I am not familiar with any statistical assessments of the distribution of causative morphology in the Arabic lexicon, it is clear that the phenomenon is not restricted to a small set of verbs and is in no way marginal. Furthermore, the derivation does not place any restrictions on the type of verb it applies to (with one exception that supports the analysis I provide—see section 6). It applies to unaccusative verbs, unergative verbs, and transitive verbs equally productively. Examples (16) and (17) show causativization of unaccusative verbs.

(16)   a.   l-walad   sakat.
            the-child fall.silent.PFV
            'The child fell silent.'

        b.   sāra   sakkt-it   l-walad.
            Sarah CAUSE.fall.silent.PFV-3FS the-child
            'Sarah silenced the child.'

(17)   a.   l-majj   saxn-it.
            the-water warm.PFV-3FS
            'The water warmed up.'

        b.   sāra   saxxn-it   l-majj.
            Sarah CAUSE.warm.PFV-3FS the-water
            'Sarah warmed up the water.'

Examples (18) and (19) show causativization of unaccusative verbs of change of location, in which causativization preserves the location argument and the preposition selecting it.

(18)   a.   s-sukkān   ṭilʕ-u   min l-bēt.
            the-residents evacuate.PFV-3PL from the-house
            'The residents evacuated the house.'

        b.   ʃ-ʃurṭa   ṭallʕ-it   s-sukkān   min l-bēt.
            the-police CAUSE.evacuate.PFV-3FS the-residents from the-house
            'The police evacuated the residents from the house.'

(19)   a.   l-ūlād   waṣl-u   ʕa-l-madrase.
            the-children arrive.PFV-3PL at-the-school
            'The children arrived at the school.'

        b.   waṣṣal-t   l-ūlād   ʕa-l-madrase.
            CAUSE.arrive.PFV-1S the-children at-the-school
            'I accompanied the children to the school.'

Examples (20) and (21) show causativization of unergative verbs. The verb *nām* 'sleep' in (21a) has a medial glide /j/ that is deleted between short vowels but not when it is doubled in the causative derivative (21b).

(20) a. l-ūlād   ḍaħk-u   ktīr b-l-fīlm.
          the-children laugh.PFV-3PL a lot in-the-film
          'The children laughed a lot during the movie.'

      b. l-muharriʒ ḍaħħak   l-ūlād.
          the-clown   CAUSE.laugh.PFV   the-children
          'The clown made the children laugh.'

(21) a. l-walad   nām   ʕa-l-farʃe.
          the-child sleep.PFV on-the-blanket
          'The child slept on the blanket.

      b. sāra   najjm-it   l-walad   ʕa-l-farʃe.
          Sarah CAUSE.sleep.PFV-3FS   the-child on-the-blanket
          'Sarah put the child to sleep on the blanket.'

Of great importance for the present purposes are causatives of transitive verbs. Causativization of a transitive verb results in a ditransitive construction. It turns out that these derived ditransitive verbs admit the same double object alternation as basic ditransitive verbs. For example, the verb *ħamal* 'carry' is a transitive verb whose subject is the carrier and whose object is the thing carried, as seen in (22a). Similarly, *ʒala* 'wash' or 'polish' is a transitive verb whose subject is the washer and whose object is the thing washed, as shown in (22b).

(22) a. ṣ-ṣabi   ħamal   ʃ-ʃantāje.
          the-youth carry.PFV   the-bag
          'The youth carried the bag.'

      b. mārija ʒal-it   ṣ-ṣħūn.
          Maria   wash.PFV-3FS   the-dishes
          'Maria washed the dishes.'

If we causativize (22a), the same two object frames are available that we saw with double object verbs, a double object frame illustrated in (23a) and a prepositional frame illustrated in (23b). Likewise for (22b), seen in (24).

(23) a. l-xitjār   ħammal   ṣ-ṣabi   ʃ-ʃantāje.
          the-old.man   CAUSE.carry.PFV   the-youth   the-bag
          'The old man had the youth carry the bag.'

      b. l-xitjār   ħammal   ʃ-ʃantāje la-ṣ-ṣabi.
          the-old.man   CAUSE.carry.PFV   the-bag   to-the-youth
          'The old man had the youth carry the bag.'

(24) a. mārija ʒall-it   zōʒ-a   ṣ-ṣḥūn.
      Maria   CAUSE.wash.PFV-3FS husband-her the-dishes
      'Maria had her husband do the dishes.'

     b. mārija ʒall-it   ṣ-ṣḥūn   la-zōʒ-a.
      Maria   CAUSE.wash.PFV-3FS the-dishes to-husband-her
      'Maria had her husband do the dishes.'

Some additional examples that stand in the same relation as (23) to (22a) and (24) to (22b) are illustrated below, to clarify that the examples above are not an isolated phenomenon. All the examples below are judged grammatical and natural by Syrian Arabic speakers.

(25) a. l-mudīr   ʕirif   l-miʃkle.
      the-director know.PFV the-problem
      'The director found out about the problem.'

     b. ʕarraf-na   l-mudīr   l-miʃkle.
      CAUSE.know.PFV-1PL the-director the-problem
      'We informed the director about the problem.'

     c. ʕarraf-na   l-miʃkle   la-l-mudīr.
      CAUSE.know.PFV-1PL the-problem to-the-director
      'We informed the director about the problem.'

(26) a. ʃ-ʃarike   malk-it   ḥuqūl n-nafṭ.
      the-company own.PFV-3FS fields the-oil
      'The company took ownership of the oil fields.'

     b. l-ḥukūme   mallk-it   ʃ-ʃarike   ḥuqūl   n-nafṭ.
      the-government CAUSE.own.PFV-3FS the-company fields the-oil
      'The government transferred ownership of the oil fields to the company.'

     c. l-ḥukūme   mallk-it   ḥuqūl n-nafṭ la-ʃ-ʃarike.
      the-government CAUSE.own.PFV-3FS fields the-oil to-the-company
      'The government transferred ownership of the oil fields to the company.'

(27) a. l-ūlād   dars-u   d-dars.
      the-children study.PFV-3PL the-lesson
      'The children studied the lesson.'

     b. l-istāz   darras   l-ūlād   d-dars.
      the-teacher CAUSE.study.PFV the-children the-lesson
      'The teacher taught the children the lesson.'

     c. l-istāz   darras   d-dars   la-l-ūlād.
      the-teacher CAUSE.study.PFV the-lesson to-the-children
      'The teacher taught the lesson to the children.'

(28) a. ṭ-ṭālib   fíhim   l-muʕādale.
        the-student   understand.PFV   the-formula
        'The student understood the formula.'

     b. fahham-t   ṭ-ṭālib   l-muʕādale.
        CAUSE.understand.PFV-1S   the-student   the-formula
        'I explained the student the formula.' (lit.)

     c. fahham-t   l-muʕādale   la-ṭ-ṭālib.
        CAUSE.understand.PFV-1S   the-formula   to-the-student
        'I explained the formula to the student.'

(29) a. sāra   wars-it   bēt   b-rīf   ʃ-ʃām   min   ʒadd-a.
        Sarah   inherit.PFV-3FS   house   in-suburbs   the-Damascus   from   grandfather-her
        'Sarah inherited a house in the suburbs of Damascus from her grandfather.'

     b. ʒadd   sāra   warras-a   bēt   b-rīf   ʃ-ʃām.
        grandfather   Sarah   CAUSE.inherit.PFV-her   house   in-suburbs   the-Damascus
        'Sarah's grandfather bequeathed her a house in the suburbs of Damascus.'

     c. ʒadd   sāra   warras   bēt   b-rīf   ʃ-ʃām   il-a.
        grandfather   Sarah   CAUSE.inherit.PFV   house   in-suburbs   the-Damascus   to-her
        'Sarah's grandfather bequeathed a house in the suburbs of Damascus to her.'

You would say (30b) or (30c) below if the mother-in-law was talking to a third person very loudly, intending to be overheard by Sarah:

(30) a. sāra   simʕ-it   l-ʕitāb.
        Sarah   hear.PFV-3FS   the-rebuke
        'Sarah heard the rebuke.'

     b. ħamāt   sāra   sammʕ-it-a   l-ʕitāb.
        mother.in.law   Sarah   CAUSE.hear.PFV-3FS-ACC.3FS   the-rebuke
        'Sarah's mother-in-law made her hear the rebuke.'

     c. ħamāt   sāra   sammʕ-it   l-ʕitāb   il-a.
        mother.in.law   Sarah   CAUSE.hear.PFV-3FS   the-rebuke   to-her
        'Sarah's mother-in-law made her hear the rebuke.'

Two additional verbs fall into this paradigm if we admit stem selection in causatives, namely *ʃāf* 'see' and *akal* 'eat'. The verbs *warʒa* 'show' and *ṭaʕma* 'feed' show the double object alternation and can be paraphrased as 'cause to see' and 'cause to eat' respectively, though they do not bear a transparent morphological relation to *ʃāf* and *akal* respectively. It is perhaps significant that these verbs occur in the same morphological template as causative verbs, namely CVCCVC, where the last *C* is the glide /j/ that is deleted word-finally but manifests itself as the long [ē] in the suffixed forms in (31b)–(31c) and (32b)–(32c). If we identify the causative morpheme with

the heaviness of the first syllable (McCarthy & Prince 1990), the verbs *warʒa* and *ṭaʕma* contain this morpheme. The stem in each case is an allomorph of *ʃāf* and *akal* that occurs in causative contexts, just as, for example, the English stem *be(t)-* is an allomorph of *good* that occurs in the elative contexts *better* and *best*. Having said this, nothing that follows depends crucially on this analysis of *ṭaʕma* and *warʒa*.

(31) a. mārija ʃāf-it   l-xiṭaṭ.
       Maria see.PFV-3FS the-plans
       'Maria saw the plans.'

    b. warʒē-na   mārija l-xiṭaṭ.
       show.PFV-1PL Maria the-plans
       'We showed Maria the plans.'

    c. warʒē-na   l-xiṭaṭ   la-mārija.
       show.PFV-1PL the-plans to-Maria
       'We showed the plans to Maria.'

(32) a. l-walad   akal   t-tiffāħa.
       the-child eat.PFV the-apple
       'The child ate the apple.'

    b. ṭaʕmē-na   l-walad   t-tiffāħa.
       feed.PFV-1PL the-child the-apple
       'We fed the child the apple.'

    c. ṭaʕmē-na   t-tiffāħa   la-l-walad.
       feed.PFV-1PL the-apple to-the-child
       'We fed the apple to the child.'

Beyond displaying the double object alternation typical of change of possession verbs like *ʕaṭa*, causatives of transitive verbs show a variety of additional parallels. These are discussed in the following section. Section then 5 describes the problem these parallels pose for both the dative shift and the alternative projection view of the syntax of ditransitive constructions, and a syntactic analysis of causatives that captures these parallels is then presented in section 6.

4 Parallels between causative and change of possession ditransitives

The object frame alternation for causatives of transitive verbs illustrated above behaves like the object frame alternation for change of possession verbs discussed in section 2 in every respect except passivization, which I return to following the other parallels below. First, the first object in the double object frame behaves like the primary object for the purposes of cliticization, as seen in (33a)–(33b) and (34a)–(34b). The secondary object may not be cliticized to the verb over

the primary object, as (33c) and (34c) show (cf. (10)–(11)). Note that the word *ʃantāje* 'bag' in (33) is feminine.

(33)   a.   l-xitjār   ħammal-u   ʃ-ʃantāje.
              the-old.man CAUSE.carry.PFV-ACC.3ms the-bag.
              'The old man had him carry the bag.'

       b.   l-xitjār   ħammal-a   la-ṣ-ṣabi.
              the-old.man CAUSE.carry.PFV-ACC.3FS   to-the-youth
              'The old man had the youth carry it.'

       c.   *l-xitjār   ħammal-a   ṣ-ṣabi.
              the-old.man CAUSE.carry.PFV-ACC.3FS the-youth
              ('The old man had the youth carry it.')

(34)   a.   mārija ʒall-it-u   ṣ-ṣħūn.
              Maria   CAUSE.wash.PFV-3FS-ACC.3MS the-dishes
              'Maria had him wash the dishes.'

       b.   mārija ʒall-it-a   la-zōʒ-a.
              Maria   CAUSE.wash.PFV-3FS-ACC.3PL to-husband-her
              'Maria had her husband wash them.'

       c.   *mārija ʒall-it-a   zōʒ-a.
              Maria   CAUSE.wash.PFV-3FS-ACC.3PL husband-her
              ('Maria had her husband wash them.')

The double object alternation for derived causative verbs also parallels the double object alternation for basic change of possession verbs in that the indirect object is not accessible for wh-movement in the double object frame. The indirect object can only be wh-moved in the form of the corresponding PP in the prepositional frame, as (35) and (36) illustrate (cf. (12)). I repeat here the point mentioned in connection with the change of possession counterpart of these examples in (12) that *mīn* 'who' can be grammatically construed as the subject in (35a) and (36a), in which case (35a) asks who had the old man carry the bag and (36a) asks who had Maria wash the dishes. But *mīn* is blocked from being construed as the indirect object in these strings.

(35)   a.   *mīn ħammal   l-xitjār   ʃ-ʃantāje?
              who CAUSE.carry.PFV the-old.man the-bag
              ('Who did the old man have carry the bag?')

       b.   la-mīn ħammal   l-xitjār   ʃ-ʃantāje?
              to-who CAUSE.carry.PFV the-old.man the-bag
              'Who did the old man have carry the bag?'

(36) a. *mīn ʒall-it   mārija ṣ-ṣḥūn?
          who CAUSE.wash.PFV-3FS Maria   the-dishes
          ('Who did Maria have wash the dishes?')

      b. la-mīn ʒall-it   mārija ṣ-ṣḥūn?
          to-who CAUSE.wash.PFV-3FS Maria   the-dishes
          'Who did Maria have wash the dishes?'

Further, the double object frame of causative verbs differs from the prepositional frame in being subject to scope freezing, as (37) and (38) illustrate (cf. (13)). The universal quantifier in secondary object position cannot scope over the primary object in the double object frame in (37a). As a result, that sentence may only mean that there is one particular youth to whom I gave every bag. But the secondary object in the prepositional frame in (37b) may scope over the preceding primary object, so that (37b) may mean that I had each of the youths carry a different bag. The examples in (38) display the same pattern.

(37) a. ḥammal-t   ṣabi   kill ʃantāje min ʃ-ʃanāti.
          CAUSE.carry.PFV-1S youth each bag   of   the-bags
          'I had a youth carry each of the bags.' (one youth got all the bags to carry)

      b. ḥammal-t   ʃantāje la-kill   ṣabi   min ṣ-ṣibjān.
          CAUSE.carry.PFV-1S bag   to-each   youth of   the-youths
          'I had each of the youths carry a bag.' (each bag went to a different youth)

(38) a. l-imm   ʒall-it   walad kill ṣaḥn   min ṣ-ṣḥūn.
          the-mother CAUSE.wash.PFV-3FS child each plate of   the-plates
          'The mother had a child wash each of the plates.' (one child got all the plates to wash)

      b. l-imm   ʒall-it   ṣaḥn   la-kill   walad min l-ūlād
          the-mother CAUSE.wash.PFV-3FS plate to-each   child of   the-children
          'The mother had each child wash a plate.' (each plate went to a different child)

Section 2 discussed examples modeled after those in Barss & Lasnik (1986) that show that in ditransitive constructions, the primary object c-commands the secondary object. These empirical points can be replicated for causative ditransitive constructions. For example, in both frames of the causative construction, a quantificational initial object may bind a pronoun in the following object (39a)–(39b) but not vice versa (39c)–(39d). The latter are ungrammatical on the relevant reading, where the quantifier and pronoun are co-indexed.

(39) a. ḥammal-t   kill   ṣabi   ʃantājit-u.
          CAUSE.carry.PFV-1S every youth bag-his
          'I had every youth carry his bag.'

b. ħammal-t   kill   ʃantāje la-ṣāḥib-a.
    CAUSE.carry.PFV-1S every   bag   to-owner-its
    'I gave every bag to its owner to carry.'

c. *ħammal-t   ʃantājit-u la-kill   ṣabi.
    CAUSE.carry.PFV-1S bag-his   to-every youth
    (*'I gave his bag to every youth to carry.')

d. *ħammal-t   ṣāḥib-a   kill   ʃantāje.
    CAUSE.carry.PFV-1S owner-its every bag
    ('I had its owner carry every bag.')

Further, *ħammal* and other causative ditransitives display the same behavior in the *each… the other* construction as change of possession ʃaṭa 'give': a quantifier may function as antecedent for *tāni(je)* 'second/other' only when it precedes it, as (40) shows.

(40) a. ħammal-t   kill   ṣabi   ʃantājit   t-tāni.
         CAUSE.carry.PFV-1s every   youth bag   [of] the-other
         'I had every youth carry the other's bag.'

     b. ħammal-t   kill   ʃantāje la-sāḥib   t-tānje.
         CAUSE.carry.PFV-1S every   bag   to-owner [of] the-other
         'I gave every bag to the other's owner to carry'

     c. *ħammal-t   ʃantājit   t-tāni   la-kill   ṣabi.
         CAUSE.carry.PFV-1S bag   [of] the-other to-every youth
         (*'I gave the other's bag to every youth to carry.'

     d. *ħammal-t   ṣāḥib   t-tānje   kill   ʃantāje.
         CAUSE.carry.PFV-1S owner [of] the-other every bag
         (*'I had the other's owner carry every bag.')

These facts indicate that as in the case of change of possession ditransitives, ditransitives formed by causativization display two object frames in which the first object c-commands the second. The strong similarities between change of possession constructions and causative constructions call for an analysis that captures the similarities. Before moving on to that analysis, I mention one point in which change of possession verbs and causatives are not fully parallel, namely passivization. Unlike change of possession constructions ((8)), causative constructions resist passivization, regardless of complement frame ((41)–(42)), and regardless of the transitivity of the underlying verb, shown in (43a) for unaccusative *sakat* 'fall silent' and (43b) for unergative *ḍaħak* 'laugh'. I return to this restriction in section 6.

(41) a. *ṣ-ṣabi   t-ḥammal   ʃ-ʃantāje.
          the-youth PASS-CAUSE.carry.PFV   the-bag
          ('The youth was made to carry the bag.')

      b. *ʃ-ʃantāje   t-ḥammal-it   la-ṣ-ṣabi.
          the-bag   PASS-CAUSE.carry.PFV-3FS   to-the-youth
          ('The bag was made to be carried by the youth.')

(42) a. *marwān   t-ʒalla   ṣ-ṣḥūn.
          Marwan   PASS-CAUSE.wash.PFV   the-dishes
          ('Marwan was made to wash the dishes.')

      b. *ṣ-ṣḥūn   t-ʒall-it   la-marwān.
          the-plates PASS-CAUSE.wash.PFV-3PL   to-Marwan.
          ('The plates were made to be washed by Marwan.')

(43) a. *l-walad   t-sakkat   baʕdēn.
          the-child PASS-CAUSE.fall.silent.PFV   afterwards
          ('The child was made to fall silent afterwards.')

      b. *l-ūlād   t-ḍaḥḥak-u   ktīr.
          the-children PASS-CAUSE.laugh.PFV-3PL   a lot
          ('The children were made to laugh a lot.)

The data above indicates that the object frame alternation seen with ditransitive causative verbs has the same properties as the object frame alternation seen with basic change of possession verbs, although something prevents causative verbs from passivizing in Arabic. These parallels call for a parallel syntactic analysis of the object frame alternation for the two verb classes. This in turn restricts the hypothesis space for analyses of the object frame alternation in ways I discuss in detail in the following section.

5 The prepositional frame does not reflect the base argument hierarchy

The causative constructions discussed in section 3 are significant for the analysis of the double object alternation because neither of the two prevalent analyses of the double object alternation discussed in section 2 extends readily to causative constructions. The reason is that both analyses attribute base structure status to the prepositional frame. In the dative shift analysis, the prepositional frame is the base structure from which the double object frame is derived and in the alternative projection view, the prepositional frame exists alongside the double object frame as an independent construction. The prepositional and double object frames are schematized in (44a) and (44b) (for the examples in (1b) and (1a) respectively). The alternative projection approach maintains that the two frames encode slightly different thematic relations. Taysir in

(44a) is a goal of (potentially metaphorical) movement, while in (44b) he is a possessor (see the discussion of *send* in section 1). Larson argues that the two frames do not in fact encode different thematic relations once we acknowledge that there are actually two prepositional frames, and only one—encoding change of possession—serves as the base for the double object frame.

(44)   a. $[_{VP}$ give$_i$ $[_{VP}$ the keys t_i $[_{PP}$ to Taysir]]]
        b. $[_{VP}$ give$_i$ $[_{VP}$ Taysir t_i the keys]]

Causative constructions in Arabic show the same double object alternation as change of possession constructions, schematized in (45); (45a) schematizes (23b) and (45b) (23a).

(45)   a. $[_{VP}$ CAUSE + carry$_i$ $[_{VP}$ the bag t_i $[_{PP}$ to the youth]]]
        b. $[_{VP}$ CAUSE + carry$_i$ $[_{VP}$ the youth t_i the bag]]

Here, the double object frame shows same order of objects that occurs in the underived active counterpart (see (22a)), lending some prima facie support to the idea that the double object frame is basic and the prepositional frame derived. This raises the question of whether anything about causative constructions indicates that the indirect object bears a different thematic relation to the event it participates in when it is a primary object than when it is a secondary object, which would support an alternative projection account, or, if not, any evidence that the prepositional frame is the base structure from which the double object frame is derived (contrary to the order in the basic transitive counterpart), which would support a dative shift account. I claim in what follows that the answer to both questions is 'no'. Rather, the evidence discussed here supports the view that the double object frame (45b) is basic and the prepositional frame (45a) is derived, and on analogy that (44b) underlies (44a).

Dowty (1991) identifies a set of criteria that determine the mapping of arguments to the grammatical functions 'subject' and 'object', which in turn align with structural prominence. 'Proto-agent' properties include volition (tantamount, I believe, to Ramchand's 2008 notion of 'initiator'), sentience (animacy), causation (being causally responsible for the event), motion (or expending effort), and autonomous existence (independent of the event). 'Proto-patient' properties include undergoing a change of state, incrementality (where subparts of a proto-patient correspond to temporal increments of the event), causal affectedness, lack of motion, and lack of independent existence (see Dowty 1991: 572–574). Dowty claims that the relation between proto-roles and grammatical functions is governed by the Argument Selection Principle in (46).

(46)   ARGUMENT SELECTION PRINCIPLE: In predicates with grammatical subject and object, the argument for which the predicate entails the greatest number of Proto-Agent properties will be lexicalized as the subject of the predicate; the argument having the greatest number of Proto-Patient entailments will be lexicalized as the direct object. Dowty (1991: 576)

Subjects are more structurally prominent than objects (Givón 1976; Keenan 1976; Keenan & Comrie 1977; Comrie 1981); in concrete graph-theoretical terms, the subject asymmetrically c-commands the object. In the active, the argument with more proto-agent properties is mapped to the subject grammatical function, and the argument with more proto-patient properties is mapped to object, making the proto-agent more structurally prominent than the proto-patient. In the passive, on the other hand, the argument with more proto-patient properties is mapped to subject, and the argument with more proto-agent properties is 'demoted' (vis a vis the active) to an oblique grammatical function structurally subordinate to the subject. Generalizing this alignment of thematic roles and grammatical functions, an ordering of arguments in which a more strongly proto-agent argument is structurally more prominent than a more strongly proto-patient argument corresponds to the basic 'active' frame, from which an inverse 'passive' order, if it is available, is a deviation.

In what follows, I argue that neither an analysis of causatives in which the two complement frames are distinct base structures nor an analysis in which the double object frame is derived from the prepositional frame is compatible with the Argument Selection Principle in causative constructions. The behavior of causative constructions points instead to an analysis in which the prepositional frame is a derivative of the double object frame. I show that for causative derivatives of transitive verbs, the indirect object is subject to the same selectional restrictions in both frames, namely those that apply to the subject of the underlying transitive verb. This point militates against an alternative projection analysis of the object alternation in causative constructions, which would claim that the two frames represent different thematic configurations, and against a dative shift analysis, which would generate the PP—here the proto-agent of the underlying verb—subordinate to the proto-patient, contrary to the Argument Selection Principle. I unpack these claims in detail in what follows.

Consider first the question of whether the indirect object in the prepositional frame has a different theta role than in the double object frame, that would justify its being base generated lower than the theme in the prepositional frame. Beginning with *ħammal* 'cause to carry', both frames in (23a) and (23b), repeated in (47a) and (47b) below, are judged as equivalent to the analytic causative construction in (47c) headed by *xalla*, corresponding to English 'make' or 'have'. All three examples in (47a)–(47c) are judged to entail the basic transitive sentence in (47d).

(47) a. l-xitjār   ħammal   ṣ-ṣabi   ʃ-ʃantāje.
           the-old.man CAUSE.carry.PFV the-youth the-bag
           'The old man had the youth carry the bag.'

      b. l-xitjār   ħammal   ʃ-ʃantāje la-ṣ-ṣabi.
           the-old.man CAUSE.carry.PFV the-bag   to-the-youth
           'The old man had the youth carry the bag.'

c. l-xitjār   xalla   ṣ-ṣabi   ji-ħmil   ʃ-ʃantāje.
the-old.man make.PFV the-youth 3MS-carry.IMPFV the-bag
'The old man had the youth carry the bag.'

d. ṣ-ṣabi   ħamal   ʃ-ʃantāje.
the-youth carry.PFV the-bag
'The youth carried the bag.'

Further, if an inanimate object is ungrammatical in the double object frame, it is also ungrammatical in the prepositional frame. That is, the prepositional frame is not more permissive of inanimate terms than the double object frame.

(48)   a. #l-xitjār   ħammal   l-ʕarabāje ʃ-ʃantāje.
             the-old.man CAUSE.carry.PFV the-cart   the-bag
             #'The old man had the cart carry the bag.'

    b. #l-xitjār   ħammal   ʃ-ʃantāje la-l-ʕarabāje.
             the-old.man CAUSE.carry.PFV the-bag   to-the-cart
             #'The old man had the cart carry the bag.'

The fact that the paraphrase by (47c) and the entailment to (47d) hold for both frames in (47a) and (47b) indicates that both frames exemplify the same thematic configuration. These entailments and the lack of any contrast between (48a) and (48b) indicates that there is no reduction in agency of the carrier (the youth) going from the double object frame in (47a), where that argument is structurally higher than than the bag, to the prepositional frame in (47b), where it is a structurally lower oblique argument, nor any increase in proto-agent properties of the bag going from the double object frame to the prepositional frame. In both cases, the youth has more proto-agent properties than the bag, which has more proto-patient properties. While the youth and the bag both exist independently of the event, the youth is animate (sentience) and performs an act that causes the bag to change location (causation). The bag, on the other hand, is inanimate, undergoes a change of state (namely location), and is (therefore) causally effected by the carrying. These considerations indicate that the double object frame shows the 'active' alignment of proto-roles to grammatical functions according to the Argument Selection Principle, suggesting the prepositional frame is derived.

Similar remarks can be directed at the example of *ʒalla* 'cause to wash'. Both frames in (24a) and (24b), repeated in (49a) and (49b), are paraphrasable as (49c) and all three entail (49d). Here too, Maria's husband is animate and the dishes inanimate. Maria's husband acts on the dishes which causes a change of state of the dishes from dirty to clean. The animacy requirement for the indirect object persists in both frames, as (50) shows. That is, the semantic features of the indirect object do not vary across the two object frames. Once again, the double object frame shows what the Argument Selection Principle casts as the basic order of indirect and direct object, not the prepositional frame.

(49) a. mārija ӡall-it   zōӡ-a   ṣ-ṣħūn.
          Maria CAUSE.wash.PFV-3FS husband-her the-dishes
          'Maria had her husband wash the dishes.'

      b. mārija ӡall-it   ṣ-ṣħūn   la-zōӡ-a.
          Maria CAUSE.wash.PFV-3FS the-dishes to-husband-her
          'Maria had her husband wash the dishes.'

      c. mārija xall-it   zōӡ-a   ji-ӡli   ṣ-ṣħūn.
          Maria make.PFV-3FS husband-her 3MS-wash.IMPFV the-dishes
          'Maria made her husband wash the dishes.'

      d. zōӡ   mārija ӡala ṣ-ṣħūn.
          husband Maria wash the-dishes
          'Maria's husband washed the dishes.'

(50) a. #mārija ӡall-it   l-maṭar ṣ-ṣħūn.
          Maria CAUSE.wash.PFV-3FS the-rain the-dishes
         #'Maria had the rain wash the dishes.'

      b. #mārija ӡall-it   ṣ-ṣħūn   la-l-maṭar.
          Maria CAUSE.wash.PFV-3FS the-dishes la-the-rain.
         #'Maria had the rain wash the dishes.'

Another example that supports the proto-agenthood of the indirect object in both frames in causative constructions is that in (51).

(51) a. l-bēbi   mā raḍi   ji-ʃrab   d-dawā.
          the-baby not be.willing.PFV 3MS-drink.IMPFV the-medicine
          'The baby wouldn't take the medicine.'

      b. mā ʔadir-t   ʃarrib   l-bēbi   d-dawā.
          not be.able.PFV-1S CAUSE.drink.IMPFV the-baby the-medicine
          'I wasn't able to make the baby take the medicine.'

      c. mā ʔadir-t   ʃarrib   d-dawā   la-l-bēbi.
          not be.able.PFV-1S CAUSE.drink.IMPFV the-medicine to-the-baby
          'I wasn't able to make the baby take the medicine.'

The underlying verb *ʃirīb* 'to drink' (said of medicine, if it is a fluid) involves the act of swallowing; that is why the baby is in a position to refuse to take the medicine in the situation that (51a) describes. This verb cannot simply mean 'to apply a fluid to something'. One can apply water to a plant, for example, but the plant cannot drink it (52a), nor be caused to drink (52b). An

inanimate indirect object is no better in the prepositional frame (52c); the same selectional restrictions apply to the indirect object in both frames.

(52)   a. *n-nabāt   ʃirib   l-majj.
          the-plant drink.PFV the-water
          (*'The plant drank the water.')

       b. *ana ʃarrab-t   n-nabāt   l-majj.
          I   CAUSE.drink.PFV-1S   the-plant the-water
          (*'I had the plant drink the water.')

       c. *ana ʃarrab-t   l-majj   la-n-nabāt.
          I   CAUSE.drink.PFV-1S   the-water to-the-plant
          (*'I had the plant drink the water.')

The drinker must be an animate entity capable of performing a swallowing event (see Jackendoff 1987 for a decomposition of English *drink* along these lines), and this selectional restriction applies to the baby in the prepositional frame of the causative construction in (51c) as much as in the double object frame, while the act of swallowing affects the medicine in both (51b) and (51c), which changes state (from its starting location to a location internal to the baby). Not only do the same selectional restrictions apply to the indirect object in both frames of *ʃarrab* 'cause to drink', but those selectional restrictions are criteria of proto-agenthood, while the direct object meets criteria of proto-patienthood. These considerations point to the conclusion that the double object frame represents the 'active' order for which the prepositional frame is the 'passive'.

Causative derivatives of verbs of creation lend particular force to this argument, since there, the direct object has the additional proto-patient property of coming into existence by virtue of the act performed by the indirect object, lending more force to the expectation that it is projected below the indirect object in the base structure. Consider *kattab* 'cause to write' (from *katab* 'write') and *rassam* 'cause to draw' (from *rasam* 'draw').
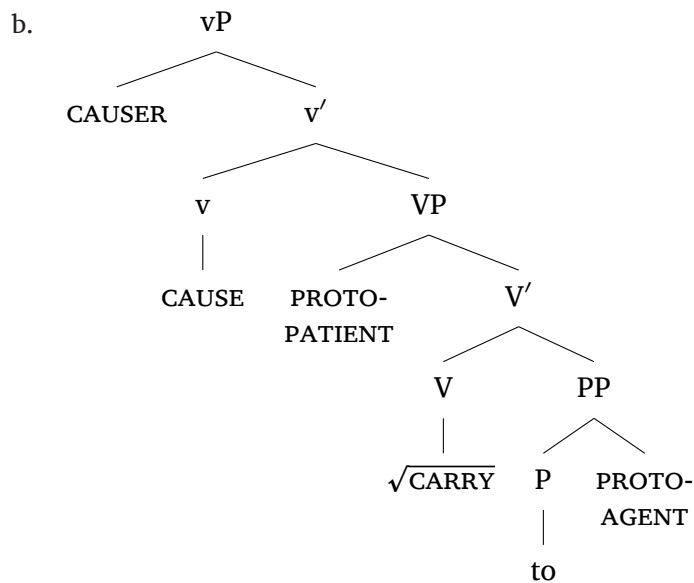
(53)   a. ṭ-ṭālib   katab   ʕaʃar ṣafaħāt.
          the-student write.PFV ten   pages
          'The student wrote ten pages.'

       b. l-muʕallme kattb-it   ṭ-ṭullāb   ʕaʃar ṣafaħāt.
          the-teacher CAUSE.write.PFV-3FS the-students ten   pages
          'The teacher had the students write ten pages.'

       c. l-muʕallme kattb-it   ʕaʃar ṣafaħāt la-ṭ-ṭullāb.
          the-teacher CAUSE.write.PFV-3FS ten   pages   to-the-students
          'The teacher had the students write ten pages.'

(54) a. l-binit   rasm-it   warde.
          the-girl   draw.PFV-3FS   flower
          'The girl drew a flower.'

      b. l-ʔānse   rassm-it   ṭ-ṭullāb   warde.
          the-teacher   CAUSE.draw.PFV-3FS   the-students   flower
          'The teacher had the students draw a flower.'

      c. l-ʔānse   rassm-it   warde   la-ṭ-ṭullāb.
          the-teacher   CAUSE.draw.PFV-3FS   flower   to-the-students
          'The teacher had the students draw a flower.'

Here, the direct object of the underlying verbs *rasam* 'draw' and *katab* 'write', beyond being inanimate, comes in to existence by virtue of the drawing and writing respectively, and its degree of completion measures out the event, while the existence of that which is drawn and that which is written is caused by the act performed by the indirect object referent, who is animate. The fact that the same thematic features accrue to the direct object in both frames indicates that it bears the same thematic relation to the event in question in both frames, and likewise for the indirect object. The fact that the indirect object referent performs the act that causes the direct object referent to come into existence incrementally in both frames makes the former a proto-agent and the latter a proto-patient. Here again, the double object frame shows the 'active' alignment of proto-roles to grammatical functions according to the Argument Selection Principle in (46), suggesting that the prepositional frame is a derived 'passive' order.

   The observations made above militate against a base structure for causative constructions in which the direct object is base generated in a higher position than the indirect object, since in each case the indirect object has more proto-agent properties than the direct object, being the agent of the underlying transitive verb. The base structure alignment direct object > indirect object does not observe the Argument Selection Principle in (46). But both the dative shift and the alternative projection view of the object alternation in change of possession verbs maintain that the prepositional frame is a possible base structure, for at least the prepositional frame itself (the alternative projection view) or for both frames (the dative shift view). Carrying this view over to causative constructions in Arabic implicates the tree in (55b) (modeled after that in (2)) for the prepositional frame of the causative verb *ḥammal* 'cause to carry' in (23b)/(47b), repeated in (55a). Here, the proto-patient *ʃ-ʃantāje* 'the bag' is syntactically superior to the proto-agent *ṣ-ṣabi* 'the youth'.

(55) a. l-xitjār   ḥammal   ʃ-ʃantāje   la-ṣ-ṣabi.
          the-old.man   CAUSE.carry.PFV   the-bag   to-the-youth
          'The old man had the youth carry the bag.'

b.

```
                          vP
                         /  \
                   CAUSER    v′
                            /  \
                           v    VP
                           |   /  \
                        CAUSE PROTO-   V′
                              PATIENT /  \
                                     V    PP
                                     |   /  \
                                 √CARRY  P   PROTO-
                                        |    AGENT
                                        to
```

Recall that the alternative projection view of change of possession constructions takes the object frame alternation to reflect a subtle difference in the thematic constitution of the construction. According to this view, in the double object frame of *give* in (1a), the primary object is a recipient, while in the prepositional frame in (1b) the corresponding PP is a goal. In none of the examples discussed above is there any indication that the PP argument in the prepositional frame of the causative has a different thematic role than the corresponding primary object in the double object frame. Both are subject to the selectional restrictions that the underlying transitive verb places on its respective arguments in both frames of the causative derivative. The fact that the proto-role features of the direct and indirect objects do not vary between the frames militates against an alternative projection view of causative constructions.

Recall, too, that Larson's (2014) dative shift analysis posits two different prepositional frames, one encoding change of possession and one encoding change of location (following Rappaport Hovav & Levin 2008). The double object frame is derived from the former. This analysis would correctly capture the semantic equivalence of the two frames in causative constructions. However, it puts the arguments of the causative in a base order that contradicts the Argument Selection Principle. As seen in (55b), it generates the proto-patient (the direct object) above the proto-agent (the indirect object), an alignment never observed for the underlying active transitive verb, with or without a preposition:

(56)   *ʃ-ʃantāje ħaml-it   (la)-ṣ-ṣabi.
       the-bag   carry.PFV-3FS (to)-the-youth
       (*'The bag carried (to) the youth.')

Both the alternative projection view and the dative shift view of change of possession constructions are motivated at least circumstantially by the fact that the preposition that shows up in the prepositional frame is locative (*to* in English and *la-* 'to' in Arabic). This fact lends itself to a

characterization that takes the recipient in change of possession constructions to be a kind of location (a 'human location' in Freeze's 1992 terms). However, this analysis of the preposition does not carry over gracefully to the causative constructions described above. There, the indirect object maintains its proto-agent properties even in the prepositional frame and the idea that it serves as a kind of location in those contexts requires a broadening of the notion of 'location' to an extent that deprives it of any predictive power. The fact that the same preposition marks the indirect object in change of possession and causative constructions in Arabic suggests that the preposition has a purely grammatical function in the double object alternation, and does not play any role in the semantic composition in those contexts, though it may function as a locative preposition elsewhere, as in (7).

As opposed to the dative shift and alternative projection analyses, an analysis that takes the double object frame to be basic preserves the order of arguments found in the underlying transitive construction, i.e., it preserves the order of arguments in active (22a) in causative (23), merely adding a causer. This idea promises to explain the semantic parallels between the two frames of causative constructions in a way that respects the Argument Selection Principle. It casts the double object frame as the 'active' frame from which the 'passive' prepositional frame is derived. To the extent these conclusions for causatives are sound, they imply a parallel analysis for change of possession constructions, which display the same syntactic behavior as causative constructions. And they imply, as mentioned above, that the preposition in the prepositional frame plays a merely functional role in the double object alternation, not a semantic one. The following section proposes a specific syntactic analysis of the causative construction and the derivation of the prepositional frame in Syrian Arabic, and extends it to the change of possession construction.

6 Analysis

In this section, I present an analysis of the causative construction that takes seriously the idea that the double object frame represents the 'active' order of arguments, and advance a proposal about how it is related to the 'passive' prepositional frame. Then I demonstrate that this analysis extends naturally to the parallel change of possession construction. I begin with a relatively standard analysis of the basic transitive construction in (22a), repeated in (58a) below, according to which the underlying verbal root heads a 'big-VP' projection. This in turn is the complement of 'little-v' (see Chomsky 1995; Embick 1997; Bruening 2001 and many others, as well as Kratzer 1996 for a related view). I take the root $\sqrt{\text{CARRY}}$ to have the denotation in (57), where y is the thing carried, x the carrier, and e an event in which x carries y. The subscript 'V' indicates that $\sqrt{\text{CARRY}}$ has syntactic category big-V. I follow Bowers (1993) in placing objects in specifier positions uniformly, and address later the question of whether the complement position of big-V is ever made use of (see discussion of (64) below). The arguments of $\sqrt{\text{CARRY}}$ are saturated successively; the specifier of VP saturates its internal argument, and the specifier of vP its external argument. This means that, in this case, little-v does not introduce any meaning of its own, but

merely functions as a syntactic *scaffolding* for licensing an argument of big-V, which is a binary relation. This aligns with Larson's (1988) notion of a 'VP shell' and deviates from the view expressed in Kratzer 1996 and others, who claim that the external argument is integrated by an agentivizing head ('Voice') and is not projected by the base verb. I expand on this point below. In (58b), the symbol **y** stands for the youth, the referent of *ṣ-ṣabi*, and **b** for the bag, referent of *ʃ-ʃantāje*. The subscript *e* designates the type of individuals, *s* the type of events.

(57) $\quad \llbracket \sqrt{\text{CARRY}_V} \rrbracket = \lambda y_e \lambda x_e \lambda e_s . \text{carry}(x, y, e)$

(58) a. ṣ-ṣabi   ħamal   ʃ-ʃantāje.
       the-youth   carry.PFV   the-bag
       'The youth carried the bag.'

b.
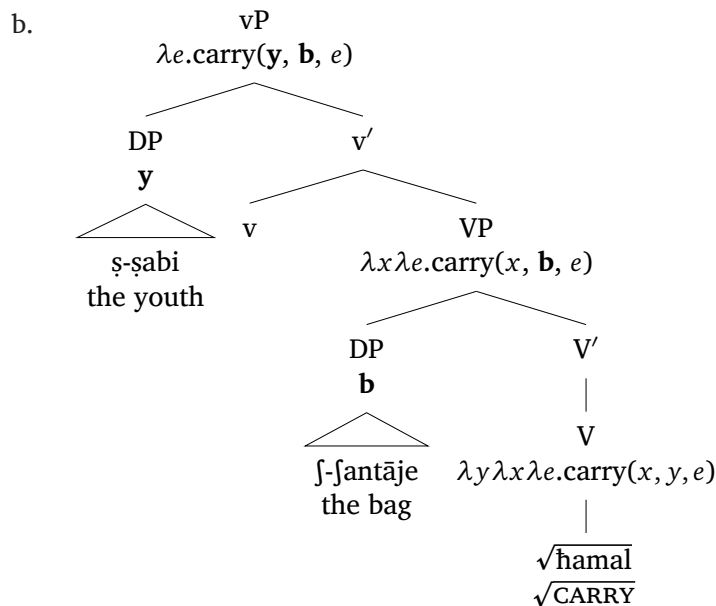
As for the causative counterpart *ħammal* 'cause to carry', I follow Bowers (1993), Marantz (1993), Collins & Thráinsson (1996), Ura (1996) McGinnis (1998), Bruening (2001), Pylkkänen (2002; 2008), Anagnostopoulou (2003), Woolford (2006) and many others in postulating an additional projection below vP to accommodate the additional argument of ditransitive constructions. This projection goes by various names in the literature cited above. I call it 'Appl[icative]P' after Marantz (1993) and Pylkkänen (2002; 2008). I follow McFadden (2006), Ramchand (2008) and others in placing this projection between vP and VP, though it corresponds syntactically to Pylkkänen's 'low ApplP', which introduces indirect objects and occurs below VP in her analysis (see also Cuervo 2003). Larson (2010) argues against the 'low ApplP' configuration; I assume what Pylkkänen calls 'high ApplP' is higher still, above vP (Boneh & Nash 2011; Michelioudakis 2012).

     The causativizing morpheme, defined in (59), whose morphological exponence is gemination of the middle radical of the base verb (perhaps as a reflex of extra prosodic weight, in light of

(31) and (32)), has category little-v (reflected in the subscript 'v' in (59)) and introduces the causer argument (corresponding to *x* in (59)) in [spec,vP]. In (59), the formula 'cause(*x,e′,e*)' says that *e* is an event of *x* causing *e′*, on analogy to 'carry(*x,y,e*)' in (57), which says that *e* is an event of *x* carrying *y*.

(59) $[\![\text{CAUSE}_v]\!] = \lambda P_{\langle s,t\rangle}\,\lambda x_e \lambda e_s\,.\,\exists e'\,P(e')\ \&\ \text{cause}(x,e',e)$

Since little-v hosts the causativizing morpheme, [spec,vP] is no longer available to host the external argument of the verbal root, as it does in the basic transitive construction illustrated in (58b). I propose that this is what motivates insertion of ApplP in causative constructions. This projection, which does not itself contribute meaning to the construction, hosts the external argument of the root when vP is not available for this purpose. ApplP is a purely functional 'VP shell' while little-vP is semantically contentful; it hosts the causative morpheme. These premises dictate the structure in (60b) for (23a), repeated in (60a) (**o** = the old man).

(60)   a.   l-xitjār   ħammal   ṣ-ṣabi   ʃ-ʃantāje.
             the-old.man   CAUSE.carry.PFV   the-youth   the-bag
   'The old man had the youth carry the bag.'

   b.
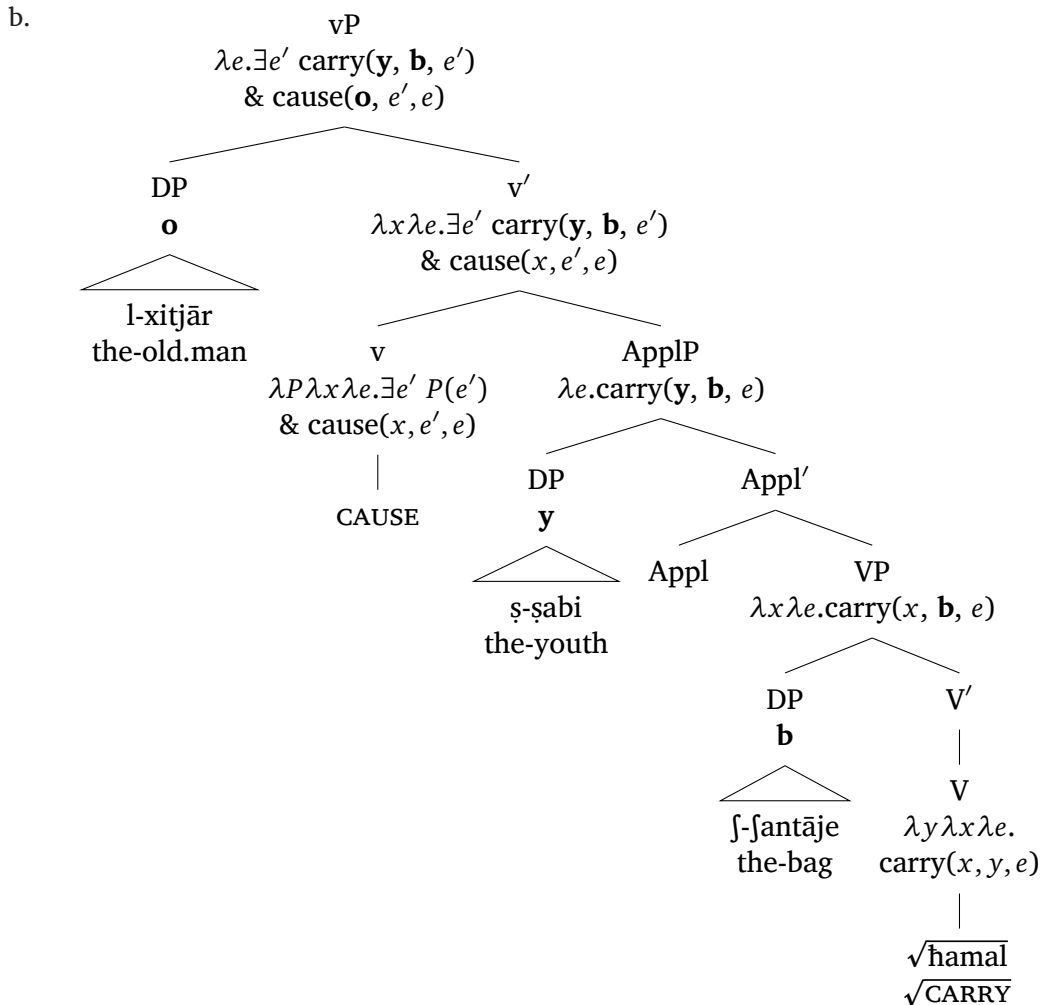
I follow Chomsky (1995) and others in associating the primary object properties discussed in sections 2 and 3 to licensing by little-v under Agree. This licensing relation extends from little-v to the nearest accessible unlicensed DP, and triggers movement of that DP to a secondary specifier of vP. Arabic displays verb movement to a functional projection above vP (Fassi Fehri 1993; Benmamoun 2000; Jarrah & Abusalim 2021), via intermediate head positions (Travis 1984), where it linearly precedes the object in the secondary specifier of vP. The external argument in the primary specifier of vP undergoes Agree licensing and movement to [spec,TP]. These movement steps are shown in (61); solid arrows designate DP movement and dashed arrows head (verb) movement. According to this analysis, the secondary object *ʃ-ʃantāje* 'the bag' is able to be licensed in situ. Evidently, both English and Arabic have a mechanism at their disposal that licenses the secondary object when little-v licenses the primary object. There is some debate about the nature of this mechanism. Collins & Thráinsson (1996), Ura (1996), McGinnis (1998), Michelioudakis (2012), Holmberg et al. (2019) and others claim that the secondary object in the double object frame (of change of possession constructions in English) is licensed under Agree with the head that introduces the primary object, here Appl. Baker (2015) claims it is assigned an oblique dependent case, and Hallman (2021) that it receives a default vP-internal case. Since Arabic does not differ from English in this respect and consequently does not present any new empirical insight into the matter, I leave this issue open for the present purposes.

(61)
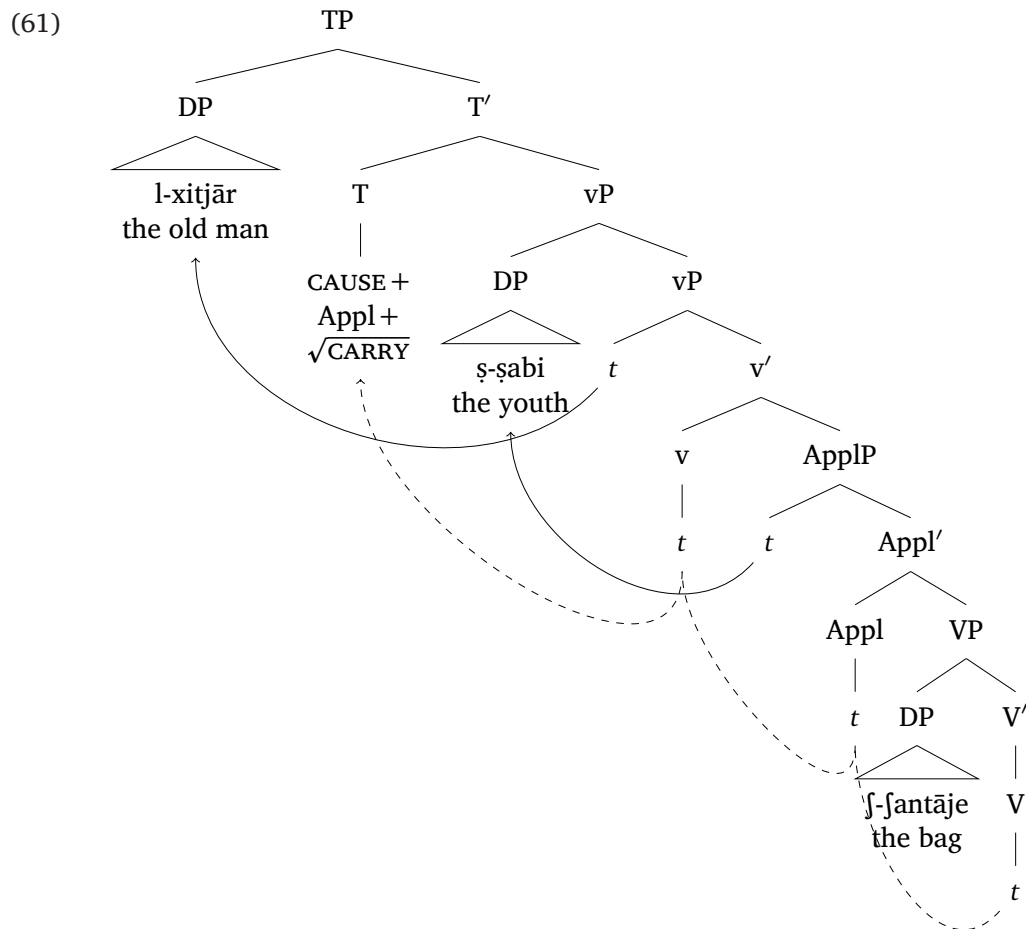
Turning now to the prepositional frame of causative constructions in Arabic, I borrow Larson's (1988) idea that the double object alternation is a kind of 'internal passive' construction, though in my analysis it is the prepositional frame that is the 'passive' derivative, not the double object frame. I model the internal passive after the analysis of passive constructions proposed by Hasegawa (1988), Mahajan (1994), Goodall (1997) and Angelopoulos et al. (2020), who claim that 'demotion' of the external argument of a transitive verb into a PP in the passive involves base generating that argument in a PP in its usual argument position. The PP-internal argument is licensed by P and therefore unavailable for other syntactic licensing processes, which then target the next lowest argument, triggering raising of an internal argument to subject position. Applied to the ditransitive structure in (23b), repeated in (62a), this means that the external argument of the root $\sqrt{\text{CARRY}}$ is base generated in a PP in the argument position [spec,ApplP], as illustrated in (62b). This preposition plays only a syntactic role and is semantically vacuous, so that the semantic composition of the prepositional frame proceeds exactly as in the double object frame, as illustrated in (62b). The preposition *la-* 'to' is selected by its syntactic context ApplP.

(62) a. l-xitjār   ħammal   ʃ-ʃantāje la-ṣ-ṣabi.
          the-old.man CAUSE.carry.PFV the-bag   to-the-youth
          'The old man had the youth carry the bag.'

   b.
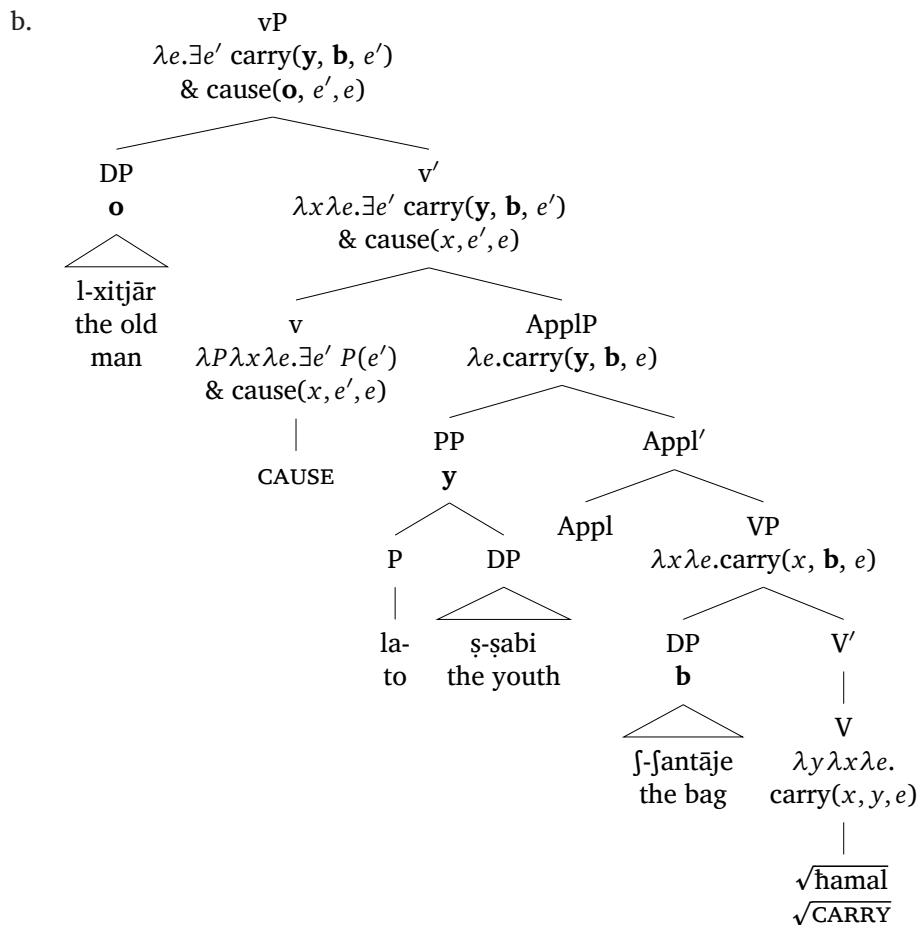
Since the external argument of the underlying root $\sqrt{\text{CARRY}}$ is case licensed within the PP it occurs in, it is now inert to the Agree relation extending from little-v; that relation instead finds the theme argument and triggers raising of the theme to the secondary specifier of little-vP. Verb movement occurs as before, illustrated in (63). See Roberts (2010) and Collins (2020) for a 'smuggling' analysis of the DP > PP order in ditransitives based on a PP > DP base order analogous to what I propose here.

(63)
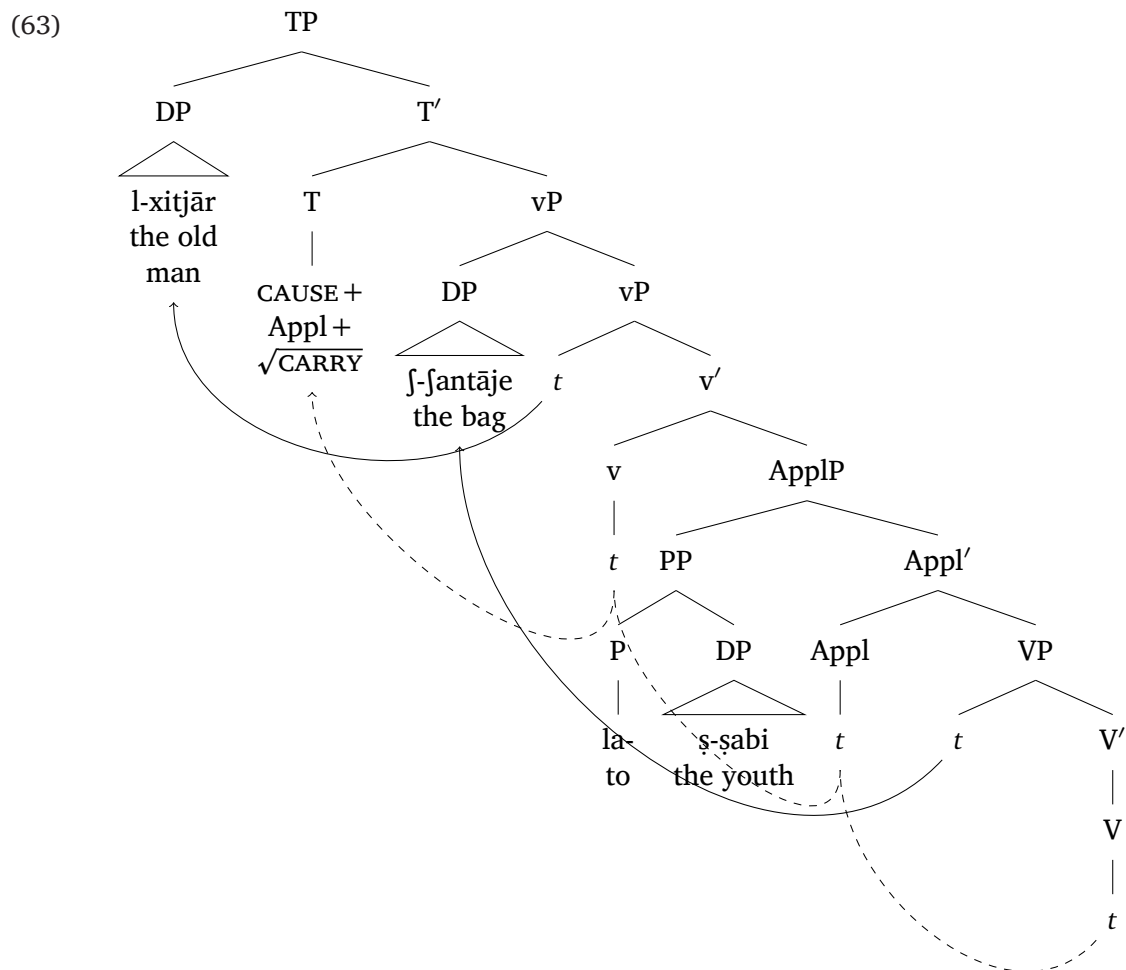
The verb *ħamal* 'carry' may license a location argument designating the place where the theme is carried to, as shown in (64a). This argument is preserved in the causative derivative, in both the double object frame (64b) and the prepositional frame (64c).

(64) a. ṣ-ṣibjān   ħaml-u   ṣ-ṣōfa   la-ʒuwwa   l-bēt.
          the-youths   carry.PFV-PL   the-sofa   to-inside   the-house
          'The youths carried the sofa into the house.'

b. l-mudīr   ḥammal   ṣ-ṣibjān   ṣ-ṣōfa   la-ʒuwwa l-bēt.
   the-boss CAUSE.carry.PFV the-youths the-sofa to-inside the-house
   'The boss had the youths carry the sofa into the house.'

c. l-mudīr   ḥammal   ṣ-ṣōfa   la-ṣ-ṣibjān   la-ʒuwwa l-bēt.
   the-boss CAUSE.carry.PFV the-sofa to-the-youths to-inside the-house
   'The boss had the youths carry the sofa into the house.'

These examples show that the locative PP *la-ʒuwwa l-bēt* 'into the house' does not monopolize one of the three argument slots made available by the VP-shell structure consisting of VP, ApplP and vP. I conclude from this that the locative PP is generated in the complement position of big-V, where it does not interfere with the generation of theme, agent and causer in VP, ApplP and vP respectively. See the discussion of (68)–(69) below for additional remarks on locative PPs.
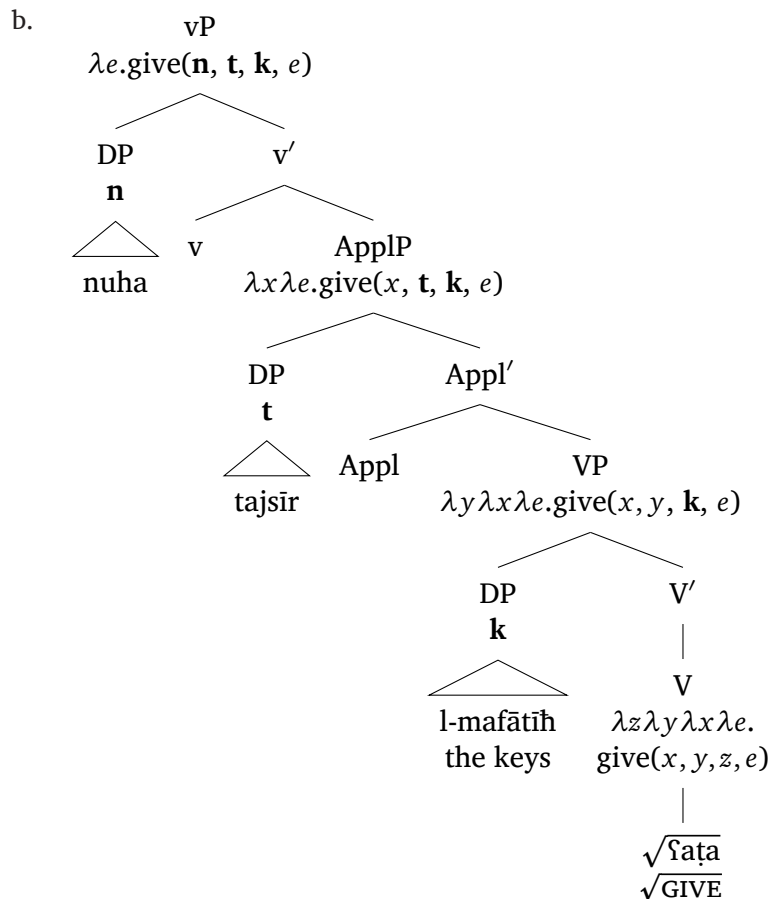
The analysis of causative constructions described above is recommended by the fact that it is in a position to accommodate the double object alternation for causative ditransitives and change of possession ditransitives in the same terms. A unified analysis is implicated by the parallels between the two kinds of ditransitive construction discussed in section 3. The proper analysis of change of possession constructions has been mired in controversy surrounding the attribution of theta roles to the two objects. The fact that a recipient argument is often marked by an allative or locative preposition cross-linguistically (as it is in Arabic) raises the possibility that a recipient is a species of location, and like other location arguments is subordinate to the theme in the base structure, motivating the dative shift analysis of the double object frame. The alternative projection view maintains that the double object and prepositional frames are different thematic configurations but difficult to distinguish because of the thematic resemblance between recipients and locations. I have endeavored to show above that that in Arabic causative constructions, the indirect object bears the same thematic relation to the underlying verb as the corresponding subject does in the basic non-causative counterpart, putting it above the theme on the argument hierarchy and implicating the order indirect object > direct object in the base structure of causative constructions. The fact that change of possession constructions pattern empirically just like causatives of transitive verbs in Arabic supports a parallel syntactic analysis. The analysis of causatives presented above derives the prepositional frame from the thematic hierarchy found in the double object frame, since this matches the thematic hierarchy of the underlying verb, modulo the addition of a causer. A parallel analysis of change of possession constructions, then, takes the double object frame to reflect the basic argument hierarchy in change of possession constructions, as described below.

On the assumption, again drawing from Larson's analysis, that change of possession verbs are basic three-place verbs, defined in (65) for *ʕaṭa* 'give', then *ʕaṭa* needs both vP and ApplP to license all of its arguments. In this case, both vP and ApplP are functional VP shells that project

the specifier positions that ʕaṭa's arguments occur in. The double object frame for ʕaṭa, illustrated in (6a), repeated in (66a), and its semantic composition is illustrated in (66b), where **n** = Nuha, **t** = Taysir and **k** = the keys. DP licensing and verb movement are as in causative constructions (not shown, cf. (61)).
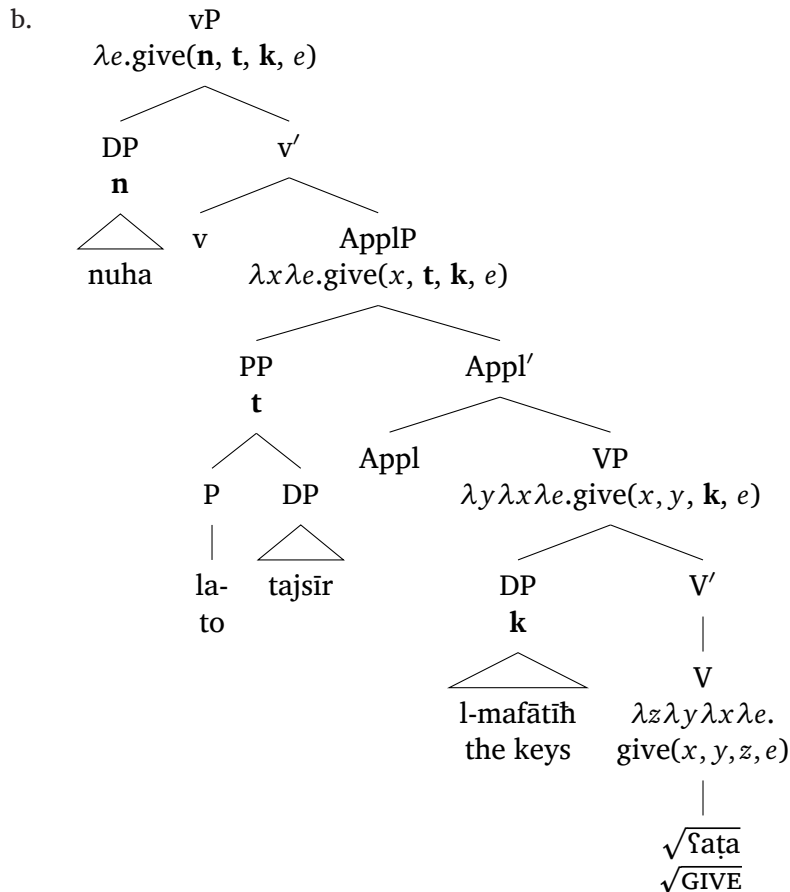
(65) $[\![\sqrt{\text{ʕAṬA}}\text{ 'give'}]\!] = \lambda z_e \lambda y_e \lambda x_e \lambda e_s \,.\, \text{give}(x, y, z, e)$

(66) a. nuha ʕaṭ-it   tajsīr   l-mafātīħ.
         Nuha give.PFV-3FS Taysir   the-keys
         'Nuha gave Taysir the keys.'

   b.

vP
$\lambda e.\text{give}(\mathbf{n}, \mathbf{t}, \mathbf{k}, e)$

DP **n** (nuha)

v′

v

ApplP
$\lambda x \lambda e.\text{give}(x, \mathbf{t}, \mathbf{k}, e)$

DP **t** (tajsīr)

Appl′

Appl

VP
$\lambda y \lambda x \lambda e.\text{give}(x, y, \mathbf{k}, e)$

DP **k** (l-mafātīħ, the keys)

V′

V
$\lambda z \lambda y \lambda x \lambda e.\text{give}(x, y, z, e)$

$\sqrt{\text{ʕaṭa}}$
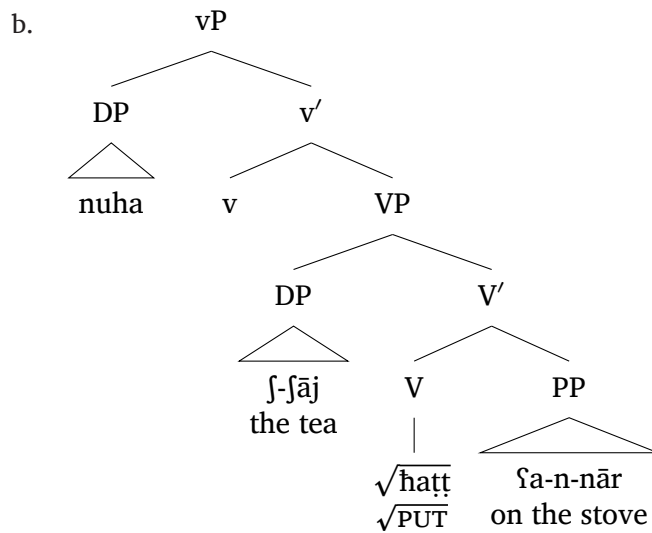$\sqrt{\text{GIVE}}$

The prepositional frame in (6b), repeated in (67a), again simply involves the possibility of generating the indirect object in [spec,ApplP] within a PP rather than as a DP, illustrated in (67b), as a consequence of which the theme moves to the primary object position on analogy to the same structure in causatives in (63).

(67) a. nuha ʕaṭ-it l-mafātīħ la-tajsīr.
      Nuha give.PFV-3FS the-keys to-Taysir
      'Nuha gave the keys to Taysir.'

b.

$$
\begin{array}{c}
\text{vP} \\
\lambda e.\text{give}(\mathbf{n}, \mathbf{t}, \mathbf{k}, e)
\end{array}
$$

- DP = **n** (nuha)
- v' :
  - v = nuha
  - ApplP: $\lambda x \lambda e.\text{give}(x, \mathbf{t}, \mathbf{k}, e)$
    - PP = **t**:
      - P: la-to
      - DP: tajsīr
    - Appl':
      - Appl
      - VP: $\lambda y \lambda x \lambda e.\text{give}(x, y, \mathbf{k}, e)$
        - DP = **k**: l-mafātīħ (the keys)
        - V': V: $\lambda z \lambda y \lambda x \lambda e.\text{give}(x, y, z, e)$
          - $\sqrt{\text{ʕaṭa}}$ / $\sqrt{\text{GIVE}}$

I clarify here that the analysis of the prepositional frame of causative (62b) and change of possession (67b) constructions is not intended to carry over to purely locative constructions, which do not alternate with a double object frame. Locative constructions display a base structure in which the proto-patient argument is generated above the location argument, as seen in (68b) for the locative sentence in (68a). I continue to assume that locative PPs occur in the complement position of big-V (see the discussion of (64) above). This analysis agrees in this respect with the dative shift and alternative projection analyses.

(68) a. nuha ħaṭṭ-it ʃ-ʃāj ʕa-n-nār.
      Nuha put.PFV-3FS the-tea on-the-stove
      'Nuha put the tea on the stove.'

b.

```
                    vP
                  /    \
                DP      v′
                / \    /  \
             nuha   v    VP
                       /    \
                     DP      V′
                    /  \    /  \
                ʃ-ʃāj   V    PP
                the tea |   /   \
                      √ḥaṭṭ  ʕa-n-nār
                      √PUT   on the stove
```

The interpretational ambiguity seen for *send* discussed in section 1, in which the prepositional frame allows either a recipient or a location-denoting PP argument, can be captured as a structural ambiguity. Example (69a) represents the prepositional frame of an underlying change of possession construction with the base structure in (67b), in which the PP indirect object is a recipient base generated in [spec,ApplP]. Example (69b) represents a locative construction with the base structure in (68b), in which the PP argument denotes a location. Note that in Arabic, the two structures correlate with different choices of preposition (recipient-marking *la-* 'to' in (69a) and location-marking *ʕa-* 'to' in (69b)), as in Hebrew and Russian according to Levin (2008).

(69) a. nuha   baʕt-it   r-risāle   la-tajsīr.
          Nuha   send.PFV-3FS   the-letter to-Taysir
          'Nuha sent the letter to Taysir.'

      b. nuha   baʕt-it   r-risāle   ʕa-london.
          Nuha   send.PFV-3FS   the-letter to-London
          'Nuha sent the letter to London.'

Since this analysis gives causative ditransitives and change of possession ditransitives the same structure (distinct from that of locative constructions), any conditions on the syntactic behavior of one of these will carry over to the other, capturing the parallels observed in section 4. For example, being the primary object is associated with the Agree relation with little-v and the accompanying movement to the outer specifier of vP in both constructions in both frames. The term in this position in the surface structure may be cliticized to the verb in the form of a clitic pronominal suffix. This term is the indirect object in the double object frame (see (10a) for *ʕaṭa*

'give' and (33a) for *ħammal* 'cause to carry') and the direct object in the prepositional frame ((10b) for *ʕaṭa* and (33b) for *ħammal*).

The fact that the indirect object is not accessible for wh-movement in the double object frame (see (12a) for *ʕaṭa* 'give' and (35a) for *ħammal* 'carry') can be captured configurationally as a restriction on DP wh-movement from [spec,ApplP]. This restriction is unlikely to be a very deep property of ApplP since it is not universal. The Arabic examples illustrating movement of a DP indirect object are profoundly ungrammatical ((12a)/(35a)), while the English counterparts are merely quite marginal and their counterparts in German, among other languages, are perfectly grammatical. I conclude we are dealing with a relatively superficial language specific constraint, and defer its exact formulation to a study of the cross-linguistic dimensions involved. The restriction involved must at any rate pertain only to DPs, since indirect object PPs may undergo wh-movement from [spec,ApplP] according to the present analysis, as (12b) (for *ʕaṭa*) and (35b) (for *ħammal*) show.

The analysis proposed here also potentially provides some insight into the conditions on scope freezing. Based on Larson's (1988) dative shift proposal, Antonyuk (2015; 2019), Larson et al. (2019) and Antonyuk & Mykhaylyk (2022) claim that scope freezing is a result of movement of the indirect object over the direct object. That is, freezing correlates with movement. This explanation cannot be extended to the analysis presented here, where the double object frame, which shows scope freezing, is base generated in the linear order seen on the surface, and is not derived by movement. Bruening (2001) follows the alternative projection view and claims that the LF mechanism that assigns scope to DPs preserves their base c-command relations (indirect object > direct object in the double object frame), yielding frozen scope in the double object frame. In the prepositional frame, he claims, the direct object DP and indirect object PP are base generated in a mutual c-command relation, so either may scope over the other at LF. In the present analysis, the DP and PP are not themselves in a mutual c-command relation in the prepositional frame. However, since the indirect object occurs in a PP and that PP is base generated above the direct object DP, neither of the DPs c-commands the other in the base structure (see (62b) for *ħammal* and (67b) for *ʕaṭa*). I suggest that it is this lack of mutual c-command in the base structure that makes the prepositional frame scope flexible, much along the lines of Bruening's analysis. There is no asymmetry in the base order to be preserved at LF.

The lack of c-command between the two objects in the base structure of the prepositional frame is of course overturned in the surface structure by movement of the direct object DP over the indirect object PP to the outer specifier of vP. This step derives a surface structure for the prepositional frame in which the direct object asymmetrically c-commands the indirect object. As a result, in both frames, the first object asymmetrically c-commands the second in the surface order. The binding asymmetries between the two objects discussed in sections 2 and

4 appear to be sensitive to this surface hierarchy. In both change of possession and causative ditransitive constructions in both frames, the primary object may bind a possessive pronoun in the secondary object (see (14a)–(14b) for *ʕaṭa* 'give' and (39a)–(39b) for *ħammal* 'cause to carry') but not vice versa (see (14c)–(14d) for *ʕaṭa* and (39c)–(39c) for *ħammal*). The same explanation applies to the interpretation of *t-tāni(je)* 'the other', which must be c-commanded by its antecedent (see (15a)–(15b) for *ʕaṭa* and (40a)–(40b) for *ħammal*) and is ungrammatical otherwise, or at best has a literal reading meaning 'the second' (see (15c)–(15d) for *ʕaṭa* and (40c)–(40d) for *ħammal*).

In addition to providing a unified analysis of the double object alternation for both change of possession verbs and morphologically derived causative verbs in Arabic, this analysis makes a prediction about change of possession verbs that is borne out: although the change of possession verbs like *ʕaṭa* 'give', *ʕār* 'lend', *manaħ* 'award' and others are morphologically basic, they may not be causativized. That is, there is no verb *ʕaṭṭa* meaning 'cause someone to give someone something', or *ʕajjar* meaning 'cause someone to lend someone something', or *mannaħ* meaning 'cause someone to award someone something', etc. From the trees above it is evident why this is so. Beyond the basic unaccusative structure consisting only of VP and the transitive structure consisting of VP and vP, it is possible to extend the syntactic 'scaffolding' for the licensing of arguments by adding ApplP. However, the licensing of the three arguments of a basic ditransitive verb exhausts VP, ApplP and vP. vP is needed to license the verbal root's external argument, and so cannot be employed to host the causative morpheme and its external argument. Consequently, this lexical gap supports the analysis of the double object alternation in ditransitive verbs proposed above.

Recall that change of possession and causative ditransitives differ in one point, namely the possibility of passivization. Change of possession verbs can be passivized (8) but causative verbs cannot (41)–(43). If the analysis fleshed out above is correct, this difference must be correlated with the one syntactic difference between the two constructions postulated here, namely the presence of the causativizing morpheme in causative verbs and its absence in change of possession verbs. The model of passivization that the present analysis employs for the double object alternation involves 'demoting' the external argument, that is, base generating it either as a PP or as an altogether covert existential quantifier, as in the passive examples in (8). Since the external argument of the causative construction is projected by the causative morpheme in little-v, the unpassivizability of the causative verb can be framed as a resistance of the causative morpheme to demotion of its argument. Non-causative verbs have a vacuous little-v, which hosts an argument of the underlying big-V. That is, it is the causative morpheme in little-v that blocks passivization; vacuous little-v admits it. While this line of reasoning does not provide a straightforward answer to the question of why the causative morpheme resists passivization, it

links the absence of passive in causatives to the presence of the causative morpheme. This link is plausible precisely because the argument-to-be-demoted in passives is an argument of the causative morpheme in causative verbs, where passivization is blocked, but not in non-causative verbs, where passivization is possible.

While the explanations offered above for the parallels (and the one contrast) between causative and change of possession ditransitives warrant additional investigation, the fact that the analysis presented here gives the two constructions the same structure predicts that they will display parallel syntactic properties. Even the one difference, concerning passivization, is plausibly reducible to the one syntactic difference postulated here, namely the fact that the to-be-demoted external argument is an argument of the causative morpheme in one case and the underlying verb in the other. The analysis is also supported by the fact that ditransitive change of possession verbs cannot themselves be causativized, since they need a vacuous little-v to license their external argument, excluding the causativizing morpheme from that position. To the extent this analysis is successful in capturing the parallels between causative and change of possession constructions in Syrian Arabic, it supports the thesis that the double object frame is the underlying 'active' complement frame reflecting the base order of arguments in change of possession constructions, on analogy to the underlying proto-agent > proto-patient complement frame in causative constructions.

7 Conclusion

This paper has pursued the following line of reasoning: Syrian Arabic causative constructions display the same double object alternation as basic ditransitive (change of possession) constructions. However, the structure attributed to the prepositional frame of basic ditransitives by two prominent analyses of the alternation—the dative shift approach and the alternative projection approach—is not plausible for causative constructions because it generates the proto-agent argument of the underlying transitive verb in a position inferior to its proto-patient argument, reversing an otherwise principled thematic hierarchy. However, a plausible analysis of causative constructions, in which the external argument of the underlying transitive verb is base generated—whether as DP or PP—higher than the internal argument, naturally extends to basic ditransitives, capturing the parallel.

The general picture that emerges incorporates certain elements of both Larson's VP-shell theory, according to which predicate-internal structural tiers serve to host arguments of a single underlying relator (the verbal root), and certain elements of 'neo-constructionist' views along the lines of Harley (1997; 2004; 2012), Ramchand (2008; 2018), and many contributions to this volume, according to which those tiers are associated with pieces of meaning and therefore constrain interpretation. In the present study, big-V is always semantically contentful and licenses

a theme, and may also license arguments one by one in ApplP and vP. But moreover, it is possible for these syntactic heads to host semantically contentful morphemes. In the case at hand, the causative morpheme whose morphological exponence is gemination of the middle radical of the verbal root (or perhaps only the extra unit of weight in the first syllable of the causative vis a vis the base verb; see the discussion of (31) and (32) in section 3), is restricted distributionally to little-v. This puts the causative morpheme in competition with other terms that might need to be licensed there, meaning that roots that are already ditransitive cannot be causativized (analogously, Bondaruk & Rozwadowska 2024 claim that causers and experiencers compete for the same argument position in Polish). Potentially other semantic information might be hosted in vP and ApplP, blocking the use of these projections as VP shells for the licensing of arguments of VP, but introducing arguments of their own. The VP shell view must therefore be prepared to accommodate some neo-constructionism and, if the present analysis is correct, vice versa.

Abbreviations

ACC = accusative, DAT = dative, PFV = perfective, IMPFV = imperfective, PASS = passive, F = feminine, M = masculine, PL = plural, S = singular, 3/2/1 = third/second/first person.

Supplementary file

Appendix: VP shells or neoconstructionism? DOI: https://doi.org/10.16995/glossa.9110.s1

Competing interests

The author has no competing interests to declare.

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