

Is Instrumental Causee Possible in Azerbaijani?

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Abstract. This paper focuses on the availability of instrumental PPs in the ditransitive and causative of ditransitive verbs. While base ditransitive verbs only allow PPs to be marked with inanimate NPs, causative of ditransitive base verbs also accept animate NPs. The aim of this paper is to investigate whether these animate NPs marked with instrumental PPs can be the causee of the causative of ditransitive sentences, and to give an argument structure analysis within the Lexical Mapping Theory.

Keywords. causativization; instrumental causee; argument structure; syntax; Turkic languages; Azerbaijani; Lexical Functional Grammar; Lexical Mapping Theory

1. Introduction. Although many languages do not allow morphological causatives to be derived from ditransitive verbs, Azerbaijani does allow this to some extent (Kroeger 2004). However, a problem arises when a ditransitive verb is causativized, due to a clash between the case marking/grammatical function of the indirect object (henceforth secondary object) and that of the causee.

A base ditransitive verb in Azerbaijani requires three arguments, one of which is the recipient in the dative case. In causatives of transitive verbs, the causee is likewise in the dative case. So, when a ditransitive verb is causativized, there is a clash: it is not possible for both the recipient and the causee to appear in the dative case. In this case, the causee is marked differently, with a post position such as *ilə* ‘with, by, via’ or *vasitəsilə* ‘by means of, through’. The causee then appears as an oblique, not an indirect object following the Noun Phrase Accessibility Hierarchy (NPAH) (Keenan & Comrie 1977).

As it is syntactically and semantically complex, causativizing a ditransitive base verb is not preferred by Azerbaijani native speakers. However, causative of ditransitives are possible provided that the fourth argument is marked with a post position, rather than the dative marker. A complication arises in the fact that the same PPs may also be used to express an instrumental adjunct, meaning ‘by, with, via’. This raises the question whether the apparent PP causees are indeed causees, or just instrumental adjuncts. Although semantic stipulations of the instrumental causee is interesting, it is out of scope of this paper.

Earlier works on Azerbaijani causatives either do not discuss the instrumental causee, or provide a clear syntactic analysis. The main purpose of this paper is to discuss the mentioned puzzle, and introduce the argument structure analysis within the framework of Lexical Functional Grammar (LFG: Bresnan & Kaplan (1982); Bresnan (2001); Dalrymple (2001); Falk (2001); Bresnan et al. (2016); Asudeh and Toivonen (2015)). This paper is comprised of data, theoretical framework, and analysis sections.

2. Data. The grammatical function of the causee depends on the valence of the base verb in Azerbaijani. When an intransitive verb is causativized, the causee would be marked in the accusative.

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- (1) Uşaq-lar gül-dü
child-PL laugh-PST.3
'The children laughed.'
- (2) Leyla uşaq-lar-ı gül-dür-dü
Leyla child-PL-ACC laugh-CAUS-PST.3
'Leyla made the children laugh.'

As the causer must be the subject, *Leyla* becomes the new subject in (2), while the previous subject *uşaqlar* 'children' becomes the causee and marked in the accusative. As the grammatical function of the causee is the direct object in (2) the procedure occurs without a problem.

When a transitive verb is causativized, the causee would be marked in the dative, as the accusative marker is no longer available for a third argument.

- (3) Əli kitab oxu-du
Ali book read-PST.3
'Ali read a book.'
- (4) Aygün Əli-yə kitab oxu-t-du
Aygün Ali-DAT book read-CAUS-PST.3
'Aygün made Ali read a book.'

The new argument is introduced as the causer and mapped to the subject in (4), while the subject in (3) becomes the causee marked in the dative. The theme argument *kitab* 'book' in (3) do not alter at all. However, the causee may be optional when in the dative, as in (5).

- (5) Aygün kitab oxu-t-du
Aygün book read-CAUS-PST.3
'Aygün made (someone) read a book.'

The causative morpheme *-t* suggest a causation, the causer is present and there is an implied causee, and yet there is no explicit argument. The hearer would know that Aygün made or caused someone to read a book in (5) but not know that this someone is Ali, as in (4). The optionality of dative is not limited to the causee. It applies to all dative arguments.

- (6) Leyla Aslan-a hədiyyə gön-dər-di
Leyla Aslan-DAT present send-PST.3
'Leyla sent a present to Aslan.'
- (7) Leyla hədiyyə göndər-di
Leyla present send-PST.3
'Leyla sent a gift (to someone).'

A ditransitive verb like *göndər-* 'send' normally requires three arguments: agent, theme, and recipient/goal. In (6) all three arguments are expressed, whereas in (7) the dative argument is omitted. This seems to be a common occurrence, especially colloquially.

When it comes to causativizing ditransitive base verbs, there are certain conditions. It is possible to have a causative of a ditransitive verb where the causee is not expressed. As the ditransitive verb already requires a dative recipient argument in its argument list, having a causee in the dative is not possible. Therefore, omitting the causee would solve this issue.

- (8) Leyla Aslan-a hədiyyə göndər-di
 Leyla Aslan-DAT present send-PST.3
 ‘Leyla sent a present to Aslan.’
- (9) Əli Aslan-a hədiyyə göndər-t-di
 Ali Aslan-DAT present send-CAUS-PST.3
 ‘Ali made (someone) send a present to Aslan’

In (8) a ditransitive verb requires three arguments, one of which is the dative recipient *Aslan*. In (9) the ditransitive verb is causativized, and there are two evidences for it, the first being the causative morpheme *-t* is attached to the base verb; and the second being the subject in (8) (i.e., *Leyla*) is not the causee in (9), and the same goes for the secondary object having the same position in both (8) and (9). Furthermore, it is also possible to causativize a ditransitive verb where the causee is expressed in the dative, as long as the secondary object (i.e., the recipient) is not expressed. This would be similar to how causative of transitive verbs operate.

- (10) Əli Leyla-ya hədiyyə göndər-t-di
 Ali Leyla-DAT present send-CAUS-PST.3
 ‘Ali made Leyla send a present.’

In contrast to (9), the causee (i.e., *Leyla*) is expressed in the dative in (10), as the recipient argument (i.e., *Aslan*) is not present. As long as it is known that (9) and (10) are derived from (8), there is no ambiguity with regards to the optionality. However, as stand-alone sentences, both (9) and (10) would be ambiguous, as there would be no telling whether the dative argument is the causee or the recipient, both of which are the secondary objects.

Nevertheless, since having two dative arguments makes the sentence ungrammatical, a problem arises from the secondary object being explicit.

- (11) *Əli Leyla-ya Aslan-a hədiyyə göndər-t-di
 Ali Leyla-DAT Aslan-DAT present send-CAUS-PST.3
 ‘Intended: Ali made Leyla send a present to Aslan.’

(11) shows that if causativizing the ditransitive verb results in a dative causee, the sentence is ungrammatical. Consequently, the causee shifts from being the secondary object with the dative marker, to an oblique marked with an instrumental postposition, such as *ilə* ‘with, by, via’ and *vasitəsilə* ‘by means of’.

- (12) Əli Aslan-a Leyla vasitəsilə hədiyyə göndər-t-di
 Ali Aslan-DAT Leyla PP present send-CAUS-PST.3
 ‘Ali sent a present to Aslan by means of Leyla.’

(12) is the only way to have both the dative recipient and the causee with the causative of a ditransitive base verb. But then, another question stems from this treatment, whether the NP marked with instrumental PP is the causee, or just an instrumental adjunct.

- (13) Leyla Aslan-a poçt vasitəsilə hədiyyə göndər-di
 Leyla Aslan-DAT post PP present send-PST.3
 ‘Leyla sent a present to Aslan via post.’

- (14) #Leyla Aslan-a Sevda vasitəsilə hədiyyə göndər-di
 Leyla Aslan-DAT Sevda PP present send-PST.3SG
 ‘Intended: Leyla sent a present to Aslan by means of Sevda.’

Both (13) and (14) are non-causative; in (13) there is an instrumental adjunct consisting of an NP (i.e. *poçt*) and the PP *vasitəsilə*. Although having a similar instrumental adjunct, the acceptability of (14) is severely degraded. The distinction between (13) and (14) lies in the animacy¹. The NP used with the PP is inanimate in (13) yet animate in (14). To illustrate where the same construction works in the causative, consider the following sentences.

- (15) Ali Aslan-a Sevda vasitəsilə hədiyyə göndər-t-di
 Ali Aslan-DAT Sevda PP present send-CAUS-PST.3
 ‘Ali sent a present to Aslan by means of Sevda.’

- (16) Əli Aslan-a poçt vasitəsilə hədiyyə göndər-t-di
 Ali Aslan-DAT post PP present send-CAUS-PST.3
 ‘Ali made Aslan send a present via post’ or ‘Ali made someone send a present to Aslan.’

Inanimate arguments are fine to be labelled as instrumental adjuncts, as in (16). Besides being the causee, the inanimate argument *poçt* ‘post’ works well as the instrumental adjunct in both interpretations of (16). As for the animate arguments, they can only be accepted with the PP marker when in the causative, as in (15), suggesting animate arguments have different roles than being just instrumental adjuncts. So, in this instance, *Sevda* may be accepted as the causee in (15).

Therefore, in the causative of ditransitive verbs, (i) the causee may not be expressed; (ii) the causee may be in the dative if the secondary object (i.e., the recipient) is not expressed; (iii) the causee may be expressed with the instrumental PP, if the secondary object is present.

Furthermore, there are other environments where the instrumental causee is available, such as double causatives of transitive base verbs.

- (17) Aygün Əli-yə kitab oxu-t-du
 Aygün Ali-DAT book read-CAUS-PST.3
 ‘Aygün made Ali read a book.’
- (18) Anar Əli-yə kitab oxu-t-dur-du
 Anar Ali-DAT book read-CAUS-CAUS-PST.3
 ‘Anar made someone make Ali read a book.’
- (19) *Anar Aygün-ə Əli-yə kitab oxu-t-dur-du
 Anar Aygün-DAT Ali-DAT book read-CAUS-CAUS-PST.3
 ‘Intended: Anar made Aygün make Ali read a book.’
- (20) Anar Əli-yə Aygün vasitəsilə kitab oxu-t-dur-du
 Anar Ali-DAT Aygün PP book read-CAUS-CAUS-PST.3
 ‘Anar made Ali read a book by means of Aygün.’

(17) is a regular causative sentence with the dative causee, (18) displays two causative morphemes

¹ To a certain extent, the noun phrase ‘post’ may exhibit a degree of ambiguity, potentially suggesting human involvement. Nonetheless, the crux of my argument hinges on distinguishing between two noun phrases, namely, *Sevda* and ‘post,’ rather than the inherent animacy of the noun phrases themselves.

in the predicate, without an additional causee. However, there are two interpretation of (18), the first being ‘Anar made someone make Ali read a book’ in which the second causee would be omitted; the second being ‘Anar made Ali read a book’ would be the same meaning with (17), suggesting the second causative morpheme has no effect on the argument structure. However, iteration of causative morphemes is out of scope of this paper, and so I will take the first interpretation of (18) assuming it is doubly causativized. As mentioned previously optionality of the grammatical functions other than the direct object is perfectly fine, so this construction is acceptable. Having two dative causees makes (19) ungrammatical, and finally, (20) is a double causative construction where the first causee is in the dative, and the second is marked with PP *vasitəsilə* ‘by means of.’ Causatives of ditransitive base verbs and double causatives of transitive base verbs are almost identical in terms of the number of arguments, and the grammatical functions that the arguments are marked in.

3. Theoretical Framework. The argument structure represents the participants of events and situations, together with the relations between these participants (Bresnan et al. 2016). Argument structure (a-structure) is treated as a separate level of representation in Lexical Functional Grammar. Lexical Mapping Theory (henceforth LMT) was developed in the late 1980s and early 1990s in the work of (Levin & Rappaport 1988), and later of (Bresnan & Kanerva 1989)’s. LMT maps between thematic structure (θ structure) and argument structure (henceforth a-structure). An a-structure includes a list of thematic roles following the thematic hierarchy.

(21) *Thematic Hierarchy: (Kiparsky 1987), (Bresnan & Kanerva 1989)*
agent > beneficiary > experiencer/goal > instrument > patient/theme > locative

To illustrate, the argument list of a base verb *göndər-* ‘send’ is as follows.

(22) *göndər-* ‘send’ \langle *agent* , *theme* , *recipient* \rangle

The a-structure features $[\pm o]$ and $[\pm r]$ constrain the mapping of thematic roles into grammatical functions. The minimal grammatical functions of arguments can be classified into natural classes in (23).

(23) *Feature Decomposition of Argument Functions: (Bresnan et al. 2016)*

	-r	+r
-o	SUBJ	OBL $_{\theta}$
+o	OBJ	OBJ $_{\theta}$

$[\pm r]$: (*un*)*restricted*
 $[\pm o]$: (*non*)*objective*

The feature $[-r]$ refers to semantically *unrestricted* grammatical functions. Only subjects and objects are allowed to be $[-r]$, while thematically restricted objects (OBJ $_{\theta}$) and obliques (OBL $_{\theta}$) are featured as $[\pm r]$, since they are semantically *restricted*. The feature $[-o]$ refers to grammatically *non-objective* functions, namely subjects and obliques. Whereas $[+o]$ refers to *objective* functions (i.e., OBJ and OBJ $_{\theta}$).

3.1. ARGUMENT STRUCTURE OF CAUSATIVIZATION. Causative morphemes were thought to have two-place predicate showing the link between the causer and the caused event (incorporation framework: Baker (1988), Li (1990)). However, Alsina (1992) claimed that certain lan-

guages display a three-place predicate, including the causer, the caused event, and the patient. In LMT, argument structure analysis of causatives has been treated based on *predicate composition*, which was developed in the works of Alsina & Joshi (1991), Alsina (1992, 1996), and later Butt (1995, 1997, 1998, 2014). Kibort (2001, 2007) generalised the mapping principle as ‘the ordered arguments are mapped onto the highest’ (i.e. the least marked) compatible function on *the markedness hierarchy*. This can be specified as in (24).

(24) *Mapping Principles*

a. Subject roles:

(i) $[-o]$ argument is mapped onto SUBJ when initial in the argument structure; otherwise;

(ii) $[-r]$ argument is mapped onto SUBJ

b. Other roles are mapped onto the lowest (i.e. most marked) compatible function on the markedness hierarchy.

Kibort (2007) offers a universal valency template for all non-derived predicates.

(25) *Universal valency template (Kibort 2007)*

$$\langle \text{arg}_1 \quad \text{arg}_2 \quad \text{arg}_3 \quad \text{arg}_4 \quad \dots \quad \text{arg}_n \rangle$$

$$[-O / -R] \quad [-R] \quad [+O] \quad [-O] \quad \dots \quad [-O]$$

Verb selects one or more argument slots and associated feature specifications. Each argument slot corresponds to a grammatical function based on the hierarchy of grammatical functions. For instance, assuming the arg_1 is selected, it must link to the highest available grammatical function, then arg_2 and others link to the remaining grammatical functions. Bresnan & Moshi (1990) and Her (2013) proposed the hierarchy of grammatical functions as in (26).

(26) SUBJ \rangle OBJ \rangle OBL $_{\theta}$ \rangle OBJ $_{\theta}$

Before proceeding to more complex discussions the demonstration of a-structure analysis for a ditransitive verb would be beneficial.

(27)

	AGENT	THEME	RECIPIENT	
SEND \langle	arg_1	arg_2	arg_3	\rangle
	$[-O]$	$[-R]$	$[+O]$	
	-----	-----	-----	
	SUBJ	OBJ	OBJ $_{\theta}$	

(27) initially shows how many arguments a verb requires, their features, thematic roles and finally the grammatical functions. As a ditransitive verb, ‘send’ requires three arguments that are listed from left to right, with the thematic roles associated with them on top. Based on the Universal Valency Template the arg_1 may have either $[-O]$ or $[-R]$. As the arg_1 is the agent, it must be mapped to the SUBJ; the rest follows the template with $[-R]$ for arg_2 mapped to the OBJ; and $[+O]$ for arg_3 mapped to the OBJ $_{\theta}$.

3.1.1. ARGUMENT FUSION AND ARGUMENT RAISING. Alsina & Joshi (1991) and Alsina (1992) proposed *argument fusion* as a causative predicate containing an argument which is co-indexing another argument in the embedded predicate. However, later Alsina (1996) acknowledged that there are causative predicates that do not display argument co-indexing, which later led another proposal, labelled as *argument raising*.

Argument fusion approach may be applied to causative predicates derived from transitive verbs: as their a-structure must share arguments, as causee is also the subject of the embedded structure for the causative of transitive predicates. In contrast, argument raising may be applied to causative predicates derived from intransitive verbs: since they do not share any arguments, the causee is the direct object of the sentence, without having its own argument structure.

4. Analysis. In this section, I provide an argument structure analysis of causatives involving instrumental causees, based on the method of Dalrymple et al. (2019) which merges Butt’s (1995; 1997; 2014) approach to predicate composition and Kibort’s (2001; 2007; 2008) model of argument structure.

Butt (2014) suggested different argument structure frames for causatives of intransitive and transitive verbs, mentioned previously as argument raising and argument fusion. In contrast, Lowe & Birahimani (2019) suggested that the causative process should not be dependent on the transitivity of the verb to which it applies. They further argued that one process should account for causativization regardless of the transitivity of the base verb. Thus they augmented the Universal Valency Template of Kibort (2007) with an unspecified arg_4 position. The version of Kibort (2007) is given in (25), the augmented version of the template is in (28) below.

(28) *Lowe & Birahimani (2019)’s valency template*

$$\left\langle \begin{array}{cccccc} arg_1 & arg_2 & arg_3 & arg_4 & arg_5 & \dots & arg_n \\ [-O/-R] & [-R] & [+O] & [] & [-O] & & [-O] \end{array} \right\rangle$$

While the arg_4 slot is empty (i.e. unspecified) in (28), the template of Kibort (2007) assumes $[-O]$ for the same position. Therefore, the model of Lowe & Birahimani (2019) would predict the highest available grammatical function for the arg_4 slot. This works well for the causative of ditransitive verbs- as shown in (29), the arg_4 is filled by OBL. However for the causative of transitive verbs Lowe & Birahimani (2019)’s model would predict the same: OBL for the arg_4 slot. Whereas it should be OBJ_θ , as discussed.

(29)

	CAUSER	CAUSEE		AGENT	THEME	RECIPIENT	
CAUS <	arg ₁	arg ₄	<i>göndər- ‘send’</i>	arg ₁	arg ₂	arg ₃	>>
	[-O]	[]		([-O])	[-R]	[+O]	
	SUBJ	OBL			OBJ	OBJ _θ	

(30)

	CAUSER	CAUSEE		AGENT	THEME	
CAUS <	arg ₁	arg ₄	<i>oxu- ‘read’</i>	arg ₁	arg ₂	>>
	[-O]	[]		([-O])	[-R]	
	SUBJ	*OBL			OBJ	

4.1. SOLUTION. In Azerbaijani, there are three realisations of the causee depending on the valence of the base verb. When the base verb is intransitive, the causee is the direct object (i.e. OBJ); when it is transitive, the causee is the secondary object (i.e. thematic object: OBJ_θ ; when it is ditransitive, the causee is OBL.

This can be analysed within the LMT if the Universal Valency Template proposed by Lowe & Birahimani (2019) is emended by discarding the unspecified arg_4 slot and make the second argument of the CAUS predicate to be a variable position arg_{x+1} , where x is the valency of the

causativized predicate, and the causee is always one higher than the valency of the causativized predicate, as shown with (x+1).

$$(31) \quad \text{CAUS} \left\langle \begin{array}{ccc} \text{arg}_1 & \text{arg}_{x+1} & \text{PRED} \\ [-O/-R] & & \end{array} \right\rangle$$

$$x = \text{Val}(\text{PRED})$$

As mentioned Azerbaijani causatives display a three-place predicate composition, so CAUS have arg_1 as the causer, arg_{x+1} as the causee, and PRED as the event. PRED may have its own arguments, depending on its valence. Now the analyses below show how the arg_{x+1} changes depending on the valence of the base predicate.

$$(32) \quad \begin{array}{ccccccc} & \text{CAUSER} & \text{CAUSEE} & & \text{AGENT} & & \\ & | & | & & | & & \\ \text{CAUS} \langle & \text{arg}_1 & \text{arg}_2 & a\check{g}la- \text{'cry'} \langle & \text{arg}_1 & \rangle & \rangle \\ & [-O] & [-R] & & ([-O]) & & \\ \hline & \text{SUBJ} & \text{OBJ} & & & & \end{array}$$

(32) shows that the base predicate is *ağla- 'cry'* which is intransitive, having only one argument in its argument structure, which is arg_1 . The a-structure shows the causative of the intransitive verb, this includes arg_1 , arg_{x+1} , and PRED, as discussed previously. There are two arg_1 positions: the first one on the left is the first argument of the matrix clause, and the second one is the first argument of the embedded predicate. The variable $x+1$ of the arg_{x+1} slot is filled with 2, as the base predicate is intransitive ($x = \text{valence of the causativized predicate} = 1$) and the next highest available slot is arg_2 . As there is no shared argument between matrix and embedded clause, arg_1 of the base predicate is raised to being the arg_2 of the matrix clause (i.e. the causative construction) and mapped onto the OBJ, as the causer must be mapped onto the SUBJ.

$$(33) \quad \begin{array}{ccccccc} & \text{CAUSER} & \text{CAUSEE} & & \text{AGENT} & \text{THEME} & \\ & | & | & & | & | & \\ \text{CAUS} \langle & \text{arg}_1 & \text{arg}_3 & a\check{c}- \text{'open'} \langle & \text{arg}_1 & \text{arg}_2 & \rangle \\ & [-O] & [+O] & & ([-O]) & [-R] & \\ \hline & \text{SUBJ} & \text{OBJ}_\theta & & & \text{OBJ} & \end{array}$$

(33) displays a transitive verb, having two arguments already in its own embedded structure. The variable $x+1$ is changed to 3 now, as it is always one higher than the valence of the base predicate ($x=2$). The mapping goes similarly, except for argument fusion. There is a shared argument between matrix and embedded clause, the causee (i.e. arg_3) is the patient of the matrix predicate and the agent of the embedded predicate. As the theme is marked onto the OBJ, the causee must be mapped onto the next highest available grammatical function, which is OBJ_θ .

$$(34) \quad \begin{array}{ccccccc} & \text{CAUSER} & \text{CAUSEE} & & \text{AGENT} & \text{THEME} & \text{RECIPIENT} \\ & | & | & & | & | & | \\ \text{CAUS} \langle & \text{arg}_1 & \text{arg}_4 & g\ddot{o}nd\ddot{a}r- \text{'send'} \langle & \text{arg}_1 & \text{arg}_2 & \text{arg}_3 & \rangle \\ & [-O] & [-O] & & ([-O]) & [-R] & [+O] & \\ \hline & \text{SUBJ} & \text{OBL} & & & \text{OBJ} & \text{OBJ}_\theta & \end{array}$$

And finally, (34) demonstrates the argument structure of causative of a ditransitive verb *göndər- 'send'*. The base verb has three required arguments ($x=3$), the recipient is mapped onto the OBJ_θ

and the causee ($x+1 = \text{arg}_4$) is marked onto the OBL.

This permits a consistent analysis of the function of the dative marker across uses: it always marks an OBJ_θ . This can be modelled within LFG by using *the constructive case* of Nordlinger (1998). Therefore, the lexical entry of the dative marker would be:

$$(35) \quad \begin{array}{l} -A \quad (\uparrow \text{CASE}) = \text{DAT} \\ \quad (\text{OBJ}_\theta \uparrow) \end{array}$$

(35) reads as when the morpheme A appears as the dative case, its grammatical function is OBJ_θ .

5. Conclusion. Availability of the causee depends on valence of the base verb. For ditransitive verbs, as DAT case marker is used for recipient, the only option for the SUBJ of the ditransitive sentence to become causee in the causative is to get a PP. Lowe & Birahimani's (2019) treatment of Kibort's (2007) universal valency template does not work in the Azerbaijani data, as the causee is realised as OBJ for intransitives, OBJ_θ for transitives, and OBL for ditransitives. The proposed valency template in (31) is better suited for the data, as it shows that arg_1 is fixed, while the variable argument slot arg_{x+1} where x is the valence of the causativized predicate. This means the second argument of the a-structure (i.e. causee) will always be one higher than the number of arguments the predicate (i.e. base verb) takes.

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