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Titel: Some observations on the grammaticalization of the cause-time relation in Turkish...

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Some observations on the grammaticalization of the cause-time relation in Turkish *sonra* clauses

A. Sumru Özsoy

Turkish grammaticalizes the cause-time relation expressed by the *sonra* clauses. The postposition *sonra* is generally taken to express a temporal relation of "priority in time" of the event of the embedded clause in relation to that of the matrix clause. However, the nature of the suffix on the verb of the clause embedded in the postpositional phrase distinguishes between the temporal and causal relation between the events of the matrix clause and the embedded clause. While constructions in which the embedded verb is marked with the suffix *-DIktAn* express the temporal relation between the two events, constructions in which the verb of the embedded clause is marked with the suffix *-mAsIndAn* encode the causal relation between the event of the matrix clause and that of the embedded clause.

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0. Introduction

This paper presents some preliminary comments on the grammaticalization of the cause-time relation in Turkish as expressed by the *sonra* clauses, which are generally taken to express a temporal relation of 'priority in time' of the event of the embedded clause in relation to that of the matrix clause.

1. Causatives in Turkish

It is a well-known fact that Turkish employs different means of grammaticalizing the cause-effect relation between events. The most common way of expressing causality is by the use of the causative verbal suffix *-DIr* (Banguoğlu 2015, Ergin 2012, Gencan 1966, Göksel & Kerslake 2005, Kornfilt 1997, Özsoy 2004). *-DIr* has the effect of changing the valency of the verb to which it is attached, as in the example *Öğretmen öğrencilere şiiri okuttu* 'The teacher had the students read the poem'. Alternate causative constructions are the periphrastic expressions *sebep/neden olmak: Aniden inen yağmur bizim planlarımızı değiştirmemize sebep/neden oldu* 'The sudden rain caused us to change our plans'. The following sentential adverbs are listed by Ergin (2012) as other means of expressing causality in Turkish: *meğer* 'apparently', *binaenaleyh* 'therefore', *öyle ki* 'such that', *şöyle ki* 'namely', *nitekim*

'therefore', *halbuki* 'however', *kaldı ki* 'moreover'. The following constructions as well are mentioned by Göksel & Kerslake (2005) and Özsoy (2004) as expressing the cause-effect relation in Turkish:

(i)   the *-DAn* suffix,
(ii)   the postpositions *dolayı, ötürü, sayesinde, nedeniyle, yüzünden*
(iii) complementizer *diye*
(iii) converbs *-DIğI için, -DIğIndAn, -(y)AcAğIndan, -mAsIndAn dolayı, -mAsI yüzünden*

Some of the examples given by Göksel & Kerslake (2005) to illustrate the postpositional constructions expressing the cause-result relation are: *Bana kızdığın için öyle söylüyorsun* 'You are saying that because you are angry at me'. *Bu para yetmeyeceği için Gürkan'dan borç isteyeceğim* 'I will ask Gürkan for some money since this amount will not be sufficient'.

Significantly, while the different expressions of causality mentioned above all mark a cause-effect relation between two events, they are not interchangeable in most instances. While the marking of the verb with the causative suffix *-DIr* typically expresses direct causation, as in *Anne çocuğu yedirdi* 'The mother fed the child', the periphrastic expression *sebep/neden olmak* indicates the causation to be indirect, as in *Aniden inen yağmur bizim planlarımızı değiştirmemize sebep/neden oldu* 'The sudden rain caused us to change our plans.' The use of the periphrastic expression in the first case will express that the mother did not feed the child herself, but indirectly caused the child to eat, as in *Anne çocuğun yemek yemesine neden oldu* 'The mother was the cause of the child's eating'.

Similarly, marking the verb with the causative affix *-DIr* in the second example expresses not direct causation brought about by the pouring rain, but the immediacy of the consequence once the rain began pouring down: *Aniden inen yağmur bize planlarımızı değiştirtti* 'The sudden rain made us change our plans'.

2. The cause-time relation in language

It is well established in such disciplines as philosophy and psychology that one of the basic cognitive relations is the association between causality and temporality. In their discussion of the philosophical approaches to the concept of causality, Khoo & Chan & Niu (2002) mention Hume's (1740/1965 as cited) three conditions on the conceptualization of causality, which Hume labelled as the *cement of the universe*, as follows:

(i)   contiguity in time and place
(ii)   priority in time
(iii) constant conjunction between cause and effect

They further mention that Mill (1872/1973) argued against the condition of "constant conjunction" as being sufficient in inferring causation. According to Mill, only in the case that "constant conjunction" is "unconditional" can such a causal relation be inferred. Mill proposed a methodology by which the causal relation between A and B can be determined. His methodology subsumed the method of agreement, the method of difference, the method of residues, and the method of concomitant variations (Khoo & Chan & Niu 2002).

It has been argued that in deciding whether a particular event X caused an event Y, individuals typically engage in the counterfactual or contrary-to-fact reasoning (Mackie 1980). That is, the general reasoning is to associate the occurrence of A and the occurrence of B and ask whether B would have occurred had A not occurred. If the answer is negative, that is if A had not occurred then B would not have occurred, then the conclusion is that A caused B.

Languages possess different linguistic means to encode the cause-effect relation. These include lexical as well as structural ways of expressing both implicit and explicit causation. Goikoetxea & Pascual & Acha (2008), for example, in a study of the function of implicit causality in the processing of interpersonal verbs (e.g., to criticize, to help), i.e. verbs that describe interchanges between people and have a semantic content with causal attribution, have shown that general knowledge of causal inferences has an effect on the comprehension of discourse.

3. *Sonra* and causality

In Turkish, the postposition *sonra* is generally taken to express a temporal relation between the event of the matrix clause and that of its own clause. In the case that its complement is an embedded clause, the verb of the embedded clause is based on *-DIktAn*.

> (1) [*Biz yemek ye-dik-ten   sonra*] *dışarı   çık-tı-k.*
>   we food   eat-DIK.VN-ABL   after   outside go-PAST-1PL
>   'We went out after eating dinner.'

The temporal relation expressed by the *sonra* clause is one of sequentiality; i.e. the postposition *sonra* indicates that the event of the matrix clause has taken place after the event of the *sonra* clause.

Significantly, in addition to *-DIktAn sonra* constructions, which typically are associated with the temporal relation between the event of the matrix clause and that of the embedded clause, Turkish also licenses *sonra* constructions that express cause-effect relation. The following example is mentioned by Göksel & Kerslake (2005: 529) as an instance of the postposition *sonra* expressing causality: *Haydi ceketini giy. Üşürsün sonra 'Come on, put on your jacket. You'll get cold otherwise'*. The use of *sonra* in this construction expresses the inference that the weather is cold, and declares that unless the person addressed puts on her/his jacket, s/he will

be cold. *Sonra* therefore implicitly expresses the cause-effect relation between the act of (not) putting on a jacket and getting cold.

3.1. *Sonra* clauses and causality

Crucially, Turkish grammaticalizes the difference between the *sonra* constructions expressing a temporal relation that holds between the event of the embedded clause and that of the matrix clause and those that express the cause-effect relation. While in the former case, the verb of its embedded clause is marked with *-DIktAn*, in the latter case it is marked with *-mAdAn*. This is illustrated in the difference between the following pair:

(2) a. *Yeni   belge-ler   orta-ya   çık-tık-tan   sonra,   bütün   olay   tekrar*
        new   document-PL   open-DAT   go-DIK.VN-ABL   after   whole   affair   again
        incele-n-ecek.
        investigate- PASS-FUT3SG
        'After the disclosure of new documents, the whole affair will be re-examined.'

    b. *Yeni   belge-ler-in   orta-ya   çık-ma-sın-dan   sonra   bütün   olay*
        new   document-PL-GEN   open-DAT   go-MA.VN-ABL   after   whole   affair
        tekrar   incele-n-ecek.
        again   investigate- PASS-FUT3SG
        'Due to new documents having been disclosed, the whole affair will be reexamined.'

The two constructions (2a) and (2b) are not interchangeable; there is a difference in the presuppositions, hence the interpretation, of the two constructions. In (2a), in which the embedded predicate of the postposition *sonra* is marked with *-DIktAn*, what is expressed is the temporal relationship between the event of the embedded clause and that of the matrix clause. That is, the reexamination of the case as stated in the main clause will be realized after the event of uncovering new documents, which is an expected development in the course of the ongoing investigation. In other words, in (2a) the discovery of new documents regarding the case is expected, and when that happens the whole case will be reinvestigated.

The construction (2b), in which the embedded verb of the *sonra* postposition is marked with *-mAsIndAn*, on the other hand, has a completely different interpretation. The embedded clause now refers to a situation where the discovery of new documents, which was unexpected, will lead to the event of the matrix clause. That is, as a consequence of the unexpected discovery, the whole case will have to be reexamined. Contrary to (2a), the relationship between the event of the embedded clause and that of the matrix clause in (2b) is no longer a simple temporal relation of sequentiality, but one of causality, where the unexpected discovery leads to a reexamination of the case.

3.2. Inherent causality

In cases where the causal link between the event of the embedded clause and that of the matrix clause is inherent, i.e. is part of the world knowledge of the speakers due to common human experience, Turkish licenses both *-DIktAn* and *-mAsIndAn* constructions as possible expressions of the cause-effect relation. Note that by the term "inherent causality" I mean cases that satisfy the conditions of causality stated by Hume, i.e. priority in time, contiguity in time and place, and conjunction between cause and effect due to common human experience. Some examples are as follows:

(3)a. *Kaleci   dördüncü   gol-ü   ye-dik-ten   sonra,   takım*
    goal-keeper   fourth   goal-ACC   eat-DIK.VN-ABL after   team
    düzen-in-i   tamamiyle yitir-di.
    organization-POSS3-ACC   totally   lose-PAST3SG
    'After the goal-keeper could not stop the fourth goal, the team lost all control.'

   b. *Kaleci-nin   dördüncü   gol-ü   ye-me-sin-den   sonra,   takım*
    goal-keeper-GEN   fourth   goal-ACC   eat-MA.VN-POSS3-ABL   after   team
    düzen-in-i   tamamiyle yitir-di.
    organization-POSS3-ACC   totally   lose-PAST3SG
    'The goal-keeper's not being able to stop the fourth goal resulted in the team's losing all control.'

(4) a. *Bu sokak-ta   bina   sayısı   art-tık-tan   sonra,*
    this street-LOC building   number   increase-DIK.VN-ABL   after
    orta-ya   bir çok sorun   çık-tı.
    open-DAT   a lot   problem-PL   appear-PAST3SG
    'After the number of buildings increased on this street, a lot of problems arose.'

   b. *Bu sokak-ta   bina   sayısı-nın   art-ma-sın-dan   sonra*
    this street-LOC building   number-GEN   increase-MA.VN-POSS3-ABL after
    orta-ya   bir çok   sorun   çık-tı.
    open-DAT   a lot   problem-PL   appear-PAST3SG
    'The increase in the number of buildings on this street gave rise to a lot of problems.'

(5)a. *Şehir-ler-e   göç   art-tık-tan   sonra orta-ya*
    city-PL-DAT   migration   increase-DIK.VN-ABL   after   open-DAT
    bir çok sorun   daha   çıktı.
    a lot   problem   more   appear-PAST3SG
    'After the migration into the cities increased, a lot more problems arose.'

b. *Şehir-ler-e   göç-ün   art-ma-sın-dan   sonra orta-ya*
city-PL-DAT   migration-GEN   increase-MA.VN-POSS3-ABL after   open-DAT
bir çok sorun   daha   çıktı.
a lot   problem   more   appear-PAST3SG
'The increase of migration into the cities gave rise to a lot more problems.'

In (3)–(5), the relation between the temporal and cause-effect relations of the event of the *sonra* clause and that of the matrix clause is inherent in the situation referred to in each of the sentences. In (3), it is almost predicted that after four goals scored by the opponent, particularly when such a score is due to the goal-keeper's bad performance, a team would feel discouraged and lose discipline. Also, both (5) and (6) express situations in which the temporal and cause-effect relation between the event of the embedded clause and that of the matrix clause is undeniable; the increase in the number of buildings on a street or the number of inhabitants in a city is bound to give rise to a number of social and infrastructure problems. It is therefore predicted that both the (a) and (b) sentences are acceptable with only a slight semantic difference; the relation that is highlighted by the latter, i.e. the suffix *-mAsIndAn*, is the causal one, while in the (a) sentences it is the temporal relation. However, given that the events such as those expressed in (3)–(5) constitute part of the world knowledge of speakers of a language, and as such are shared by all the speakers, the (a) and (b) sentences which satisfy all the conditions of causality stated by Hume are hence interpreted to be semantic equivalents of each other.

3.3. *Sonra* and necessary condition of causality

Significantly, what the above discussion leads to is that in instances where no necessary condition can be construed between the event of the *sonra* clause and that of the matrix clause, i.e. cases in which at least one of the conditions of causality is not satisfied, the construction with *-mAsIndAn* should not be possible in Turkish. That this indeed is the case is illustrated by the difference between the grammaticality of the (a) and (b) sentences below, which are the example (1) repeated here as (6a) and its counterpart with *-mAsIndAn* in (6b).

(6)a *Biz yemek ye-dik-ten   sonra   dışarı çık-tı-k.*
we food   eat-DIK.VN-ABL after   outside go-PAST-1PL
'We went out after we had dinner.'

b. **Biz-im   yemek   ye-me-miz-den   sonra   dışarı   çık-tı-k.*
we-GEN   food   eat-MA.VN-POSS1PL ABL   after   outside go-PAST-1PL
'# We went out because we had had dinner.'

As can be noted, in contrast to (2a–b) above, in which such a logical causal relation can be construed between the unexpected discovery of new documents and the start of a new reexamination, no such relation can be construed for the events in (6a-b).

The relation between eating dinner and going out for a walk is therefore construed to be a temporal one. Sentence (6a) does not have a *-mAsIndAn sonra* counterpart; in fact the *-mAsIndAn sonra* construction is judged to be ungrammatical in Turkish. Consequently, only the *-DIktAn sonra* counterpart is licensed in such cases, as in the examples (1) and (6a).

Further evidence supporting the analysis of the *-mAsIndAn sonra* construction as not occurring where no causality can be construed between the event of the embedded clause and that of the matrix clause is illustrated in (7a–b).

(7)a. *İnsan öl-dük-ten hemen sonra vücud-un-da değişim-ler*
   person die-DIK.VN-ABL immediately after body-POSS3-LOC change-PL
   başl-ıyor.
   start-IYOR.PRES3SG
   'Changes start taking place in one's body shortly after one dies.'

b. **İnsan-ın öl-me-sin-den sonra vücud-un-da değişim-ler*
   person-GEN die-MA.VN-POSS3-ABL after body-POSS3-LOC change-PL
   başl-ıyor.
   start-IYOR.PRES3SG
   '# Changes start taking place in one's body because one dies.'

Note that (7) seemingly meets Hume's three conditions of causality—the temporal priority of the event of the embedded clause with respect to the event of the matrix clause, the contiguity in time and place and conjunction of the two events. However, the event expressed by the matrix clause is due to natural causes in this case, rather than intentional causation. *-mAsIndAn sonra* constructions therefore encode the cause-effect relation that in fact can be acted upon to reverse or to modify the outcome, if need be.

4. *-mAsIndAn sonra*

The contrast in the relative acceptability of the constructions in the following examples illustrates further differences between the *-DIktAn sonra* and *-mAsIndAn sonra* constructions.

(8)a. *?Son eser-i bir çok okur tarafından*
   last work-POSS3 a lot reader by
   eleştir-il-dik-ten sonra,
   criticize-PASS-DIK.VN-ABL after
   yazar inziva-ya çekil-meğ-e karar ver-di.
   author reclusion-DAT withdraw-INF-DAT decision give-PAST3SG
   'After his last work was criticized by many readers, the author decided to withdraw into seclusion.'

b. *Son   eser-i-nin   bir çok   okur   tarafından*
   last   work-POSS3-GEN   a lot   reader by
   eleştir-il-me-sin-den   sonra
   criticize-PASS-MA.VN-ABL   after
   yazar   inziva-ya   çekil-meğ-e   karar ver-di.
   author reclusion-DAT   withdraw-INF-DAT   decision give-PAST3SG
   'Because his last work was criticized by many readers, the author decided to withdraw into seclusion.'

In (8), given that an author's decision to withdraw into seclusion is a serious one, the unacceptability of the *-DIktAn sonra* construction is predicted. Formulating the two events, i.e. the readers's criticism and the author's decision to withdraw into seclusion, in terms of a mere temporal relation at the very least tones down the significance of the impact of the author's decision. By focusing on the cause of such a dramatic outcome, the *-mAsIndAn sonra* construction, on the other hand, highlights the significance of the outcome.

5. Conclusion

The above discussion intended to show how Turkish grammaticalizes the difference between simple temporal and temporal-causal relations expressed by the *sonra* constructions. Constructions in which the embedded verb is marked with *-DIktAn* express a temporal relation between the event of the embedded clause and that of the matrix clause, while constructions in which the verb of the embedded clause is marked with the *-mAsIndAn* suffix encode a causal relation between the two events. Further analysis into the various aspects of the expressions of causality in Turkish, particularly with respect to constructions of implicit causality, as investigated by Hartshorne (2014), and Garvey & Caramazzo (1974), as well as the cognitive representation of causality (cf. Barriere 2002) will indisputably reveal further interesting properties of causative constructions in the language, which in turn will also contribute to investigations into the representation and annotation of causality in the field of natural language processing (cf. Mirza & Tonelli 2014).

Abbreviations

ABL	ablative	LOC	locative
ACC	accusative	MA.VN	verbal noun in -MA
DAT	dative	PASS	passive
DIK.VN	verbal noun in -DIK	PL	plural
FUT	future	POSS	possessive
GEN	genitive	SG	singular
IYOR.PRES	present in - IYOR		

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