Modifying result states in Turkish[*]

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Abstract This study investigates the properties of a durative modifier that exclusively targets result states in Turkish. We call this modifier RSM, standing for Result State Modifier. What is peculiar about RSM is that it can express the actual duration of a result state, as well as a non-actual duration for an actual result state. Our goal is to describe the conditions under which these two interpretations are licensed and to provide a compositional analysis of how these interpretations are derived. We argue that dispositions play a key role in the way RSM can describe a non-actual duration for an actual result state.

Keywords: Turkish, result states, durative modifiers, intentions, dispositions

1 Introduction

Turkish has a temporal modifier that exclusively targets result states. We set aside its morphological complexity and label it as RSM, standing for Result State Modifier. (1a) illustrates its morphological complexity, and (1b) shows how we gloss it throughout the paper.

(1) a. beş saniye -liğ   -in   -e
        five second MEASURE 3.SG.POSS DAT
        'for five seconds'

   b. beş saniye-**liğine**
        five second-RSM
        'for five seconds'

RSM tells us something about the duration of a result state. For example, RSM in (2a) asserts that the crashed state of YouTube lasted for two hours. Hence, RSM in the inchoative sentence in (2a) comes with an **actuality entailment** regarding the duration of the result state of YouTube being crashed. This is diagnosed by the

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infelicitous follow-up in (2b), which contradicts what is asserted in (2a). This is how we will diagnose the presence of an **actual duration entailment** throughout the paper.

(2) a. YouTube iki saat-**liğine** çök-tü.
    YouTube two hour-RSM crash-PST.3SG
    Lit: 'YouTube crashed for two hours.'
    ⊨ S: *YouTube being in a crashed state*
    ⊨ S *was two-hour-long*

  b. #… ama bir saat sonra geri geldi.
    '… but it came back after an hour.'

Notably, RSM does not always describe the actual duration of a result state. For example, although the sentence in (3a) entails that the box ended up on the table as understood from the infelicitous follow-up in (3b), it does not have an actuality entailment regarding the duration of this result state. A follow-up sentence asserting that the box remained on the table less than two hours does not contradict (3a), as shown in (3c). Hence, we do not have the actual duration entailment here.
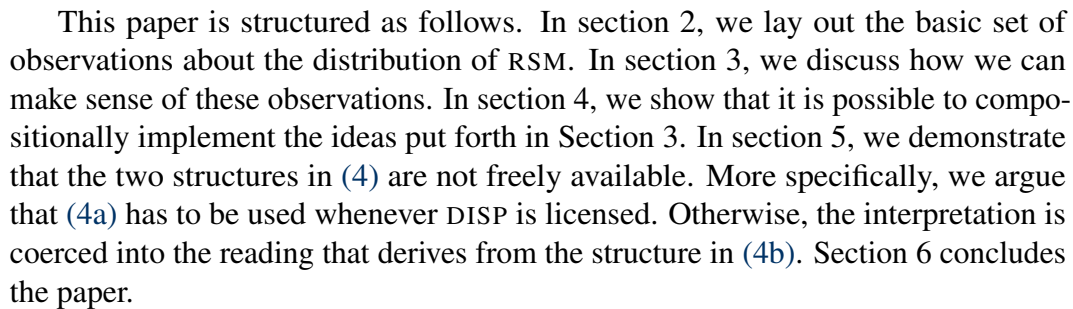
(3) a. Melis kutu-yu iki saat-**liğine** masa-ya koy-du.
    Melis box-ACC two hour-RSM table-DAT put-PST.3SG
    Lit: 'Melis put the box on the table for two hours.'
    ⊨ S: *the box being on the table*
    ⊭ S *was two-hour-long*

  b. #… ama kutu hiç masanın üzerinde olmadı.
    '… but the box was never even on the table.'

  c. … ama beş dakika sonra annesi odasına götürdü.
    '… but her mother took it to her room after five minutes.'

Intuitively, in (3a), RSM seems to encode the **intended duration** for the result state. Therefore, the sentence in (3a) appears to mean that Melis put the box on the table, *wanting* it to be there for two hours. This raises an important question: how is it that while a result state is entailed in (3a), a modifier that talks about its duration fails to state its actual duration?

We propose to capture this dual behavior of RSM by positing that RSM phrases like *iki saatliğine* 'for two hours' may correspond to one of the structures in (4). The head that we label DISP, standing for disposition, is what will enable the 'intended duration' interpretation. On the other hand, when DISP is absent, we predict the

actual duration entailment. Crucially, there are cases where DISP is precluded, simply because it is contextually undefined. Our main goal is to explicate under which conditions DISP may or may not be licensed. In other words, we will identify under which conditions the structure in (4b) is the only possibility, hence forcing the actual duration entailment.

(4) a. DISPP
          ╱   ╲
       DISP   DURP
              ╱   ╲
           DUR   two hours

     b. DURP
         ╱   ╲
      DUR   two hours

This paper is structured as follows. In section 2, we lay out the basic set of observations about the distribution of RSM. In section 3, we discuss how we can make sense of these observations. In section 4, we show that it is possible to compositionally implement the ideas put forth in Section 3. In section 5, we demonstrate that the two structures in (4) are not freely available. More specifically, we argue that (4a) has to be used whenever DISP is licensed. Otherwise, the interpretation is coerced into the reading that derives from the structure in (4b). Section 6 concludes the paper.

2 When is RSM licensed?

Accomplishments and achievements are two classes of verbs that can provide result states (Dowty 1979; Parsons 1990; Talmy 1991; Landman 1992; Rappaport Hovav & Levin 1998; Ramchand 2008). RSM is sensitive to the possibility of a result state being present. (2a) entails that YouTube ended up in a crashed state, and (3a) entails that the box ended up on the table. We argue that RSM is a special type of durative modifier that requires such result states. What constitutes evidence for this claim is the observation that RSM is entirely incompatible with activity denoting verbs which lack result states.[1] An illustrative example is in (5).

(5) Selin (#**iki saat**-**liğine**) koş-tu.
     Selin two hour-RSM run-PST.3SG
     'Selin ran (for two hours)$_{\text{intended}}$.'

On the other hand, as predicted, when an activity is delimited as in (6), RSM becomes fully acceptable. This corroborates our characterization of RSM as a result

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[1] Turkish has another durative modifier, e.g. *iki saat boyunca* 'for two hours', which indicates the actual duration of activities and states. Quite expectedly, it is incompatible with accomplishments and achievements unless they are coerced into iterative construals.

state modifier.

(6) Kutu-yu iki saat-liğine oda-ya taşı-dı-lar.
     box-ACC two hour-RSM room-DAT carry-PST-3PL
     Lit: 'They carried the box to the room for two hours.'
     ⊨ S: *the box being in the room*
     ⊭ S *was two-hour-long*

Accordingly, we take RSM to be a sublexical modifier of result states, which is indicative of its very low attachment in the logical form.[2] What is peculiar about RSM is its dual behavior mentioned in the introduction. Sometimes, it talks about the **actual duration** of a result state as in the inchoative sentence in (7a) while at other times it talks about a **non-actual duration** as seen in the causative sentence (8a). We are able to identify this contrast by comparing the appropriateness of the follow-up sentences in (7b) and (8b).

(7) a. Hava on dakika-lığına karar-dı.
         sky ten minute-RSM darken-PST.3SG
         Lit: 'The sky darkened for ten minutes.'
         ⊨ S: *the sky being dark*
         ⊨ S *was ten-minute-long*

     b. #... ama üç dakika sonra açıldı.
         '... but it cleared after three minutes.'

(8) a. Melis kutu-yu iki saat-liğine masa-ya koy-du.
         Melis box-ACC two hour-RSM table-DAT put-PST.3SG
         Lit: 'Melis put the box on the table for two hours.'
         ⊨ S: *the box being on the table*
         ⊭ S *was two-hour-long*

     b. ... ama beş dakika sonra annesi odasına götürdü.
         '... but her mother took it to her room after five minutes.'

Hence, what is responsible for the actuality of the duration in (7) and the non-actuality of the duration in (8) remains unexplained. One could argue that in cases where there is no actuality entailment regarding the duration of a result state, the result state itself is non-actual, as we see in 'non-culminating accomplishments' (Tatevosov 2008; Martin 2015; Alexiadou, Martin & Schäfer 2017; Martin & Schäfer 2017; Martin 2019; Gyarmathy & Altshuler 2020). We observe that RSM is able

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2 We leave an in-depth investigation of whether RSM is compatible with stative adjectives and stative verbs to future work.

to modify both possible and actual result states, namely, it is not parasitic on the presence of an actual successful culmination. Rather, it is sensitive to the possibility of culmination. For example, although there is no culmination in (9a), we can still use RSM to talk about how long the box is expected to stay on the roof in case it ends up there.

(9) a. Kutu-yu iki saat-liğine çatı-ya fırlat-tı-lar.
         box-ACC two hour-RSM roof-DAT throw-PST-3PL
         Lit: 'They threw the box onto the roof for two hours.'
         ≈ they threw the box onto the roof, <u>wanting it to be there for two hours</u>
         ⊭ The box ended up on the roof.

     b. … ama sert rüzgardan, kutu çatıya hiç ulaşmadı.
         '… but because of the strong wind, the box never made it to the roof.'

Since the result state in (9a) is not actual, the expected duration of this state could not have been actualized, either. However, the non-actuality of the duration is not dependent on whether the result state is actual or not. We observe that even when the result state is actual, an actuality inference regarding its duration may easily be cancelled, as shown in (10b). This shows that the absence of actual duration entailment cannot be due to a possibility modal in the CAUS head (Koenig & Davis 2001; Beavers 2010; Beavers & Koontz-Garboden 2020), for this would predict the absence of actual duration entailment only when culmination itself is cancellable.

(10) a. Kutu-yu iki saat-liğine masa-ya koy-du-m.
          box-ACC two hour-RSM table-DAT put-PST-1SG
          Lit: 'I put the box on the table for two hours.'

      b. … ama beş dakika sonra annem odasına götürdü.
          '… but my mother took it to her room after five minutes.'

      c. #… ama kutu hiç masanın üzerinde olmadı.
          '… but the box was never even on the table.'

In this section, we have shown that RSM can only modify result states. Hence, it seems that it has to operate at a sublexical level. Furthermore, we have shown that a result state S being actual does not guarantee that the duration RSM describes for S is actual. In other words, RSM can describe a non-actual duration for an actual result state. Hence, we need an account that explains this modal-like behavior of RSM. Furthermore, we need to understand when this modal-like behavior of RSM is licensed.

3   A case for dispositions

In the previous section, we have established that RSM can sometimes be used to report a non-actual duration for an actual result state. We diagnose this modal-like reading of RSM based on the possibility of a follow-up like (11b) to a sentence like (11a).

(11)   a.   Melis kutu-yu iki saat-liğine masa-ya   koy-du.
             Melis box-ACC two hour-RSM table-DAT put-PST.3SG
             Lit: 'Melis put the box on the table for two hours.'
             ⊭ The box remained on the table for two hours.

        b.   … ama beş dakika sonra anne-si odasına götürdü.
             '… but her mother took it to her room after five minutes.'

We have also shown that such a follow-up is not always permitted, as illustrated in the example (12). We have taken the impossibility of cancelling the duration inference to constitute evidence for what we have labelled the actual duration entailment. As mentioned previously, the intuitive difference between the two situations is that Melis acts intentionally to cause a result state in (11a) whereas there is no comparable notion of intentional action in (12a).

(12)   a.   Hava on dakika-lığına karar-dı.
             sky   ten minute-RSM darken-PST.3SG
             Lit: 'The sky darkened for ten minutes.'
             ⊨ The sky remained dark for ten minutes.

        b.   #… ama üç dakika sonra açıldı.
             '… but it cleared after three minutes.'

Then, a preliminary hypothesis based on this contrast is that **intentions** play an important role in making the modal-like reading possible. Indeed, this expectation is confirmed by the sentence in (13a) which involves a causative change of state verb, yet has an inanimate subject that cannot have intentions. We observe that the actual duration inference in (13a) simply cannot be cancelled, as shown in (13b).

(13)   a.   Volkanik patlama şehri   bin   yıl-lığına küllerin   altına
             volcanic eruption city.ACC thousand year-RSM ashes.GEN under
             göm-dü.
             bury-PST.3SG
             Lit: 'The volcanic eruption buried the city under ashes for a thousand years.'

    b.   #… ama yarım asır sonra arkeologlar küllerden kurtardı.
          '… but archaeologists recovered it from the ashes after half a century.'

Therefore, the generalization seems to be that the presence of an intentional causer licenses the modal-like interpretation where RSM describes a non-actual duration for an actual result state. On the other hand, in the absence of an intentional causer (as in inchoative sentences and sentences with causers that cannot have intentions), we find that RSM simply describes the actual duration of actual result states.

This generalization, albeit simple and attractive, is not quite correct. We find subtle contexts where RSM has its modal-like interpretation, even though the actual result state it modifies does **not** come about due to intentional causation. For example, in the context provided in (14a), there is an actual result state which is not intentionally caused, and despite that, the duration expressed in (14b) can still be non-actual as diagnosed by the felicitious follow-up in (14c).

(14)   a.   Context: All by accident, I pressed a switch button on a spacecraft, causing the Mars passengers in the resting cabins to cryogenically freeze. That button, when pressed, freezes any human in the cabins, and automatically unfreezes them three months later. Luckily, we didn't have to wait that long. A crew member was able to unfreeze them shortly after they got frozen.

        b.   Mars yolcularını   kazara   üç   ay-lığına
            Mars passengers.ACC by.accident three month-RSM
            don-dur-du-m.
            freeze-CAUS-PST-1SG
            Lit: 'By accident, I froze the Mars passengers for three months.'
            ⊨ S: *Mars passengers being frozen*
            ⊭ S *was three-month-long*

        c.   … ama teknik ekip bir günde sorunu çözdü.
            '… but the technical team solved the problem in a day.'

The data above is quite informative in that it shows us that intentions are not the whole story. Piñón (1999) discusses counterparts of RSM in English, German, and Hungarian, and argues that the modal-like interpretation is licensed under intentional causation. Here, we argue that this account does not extend to the data in (14), for it shows that even in the absence of an intentional agent, we can have the modal-like interpretation, as diagnosed by the cancellability of the actuality inference regarding

the duration of the relevant result state. Given that RSM cannot simply be tracking intentions, *pace* Piñón (1999), we suggest that we need another notion that also subsumes agentive intentions. In what follows, we show that the relevant notion is *dispositions*.

In the example in (14), the button that causes cryogenic freezing has a disposition relevant for the duration expressed by RSM. The context in (14a) indicates that the button is programmed to freeze people in the cabins, once pressed, and keep them in that state for three months. It seems that what RSM is picking on is this disposition of the button towards causing a result state in which people in the cabins remain frozen for three months. However, an intervention is still possible, such as the technical team's intervention, allowing the actuality inference to be easily cancelled, as in (14c). Notice that this is fully parallel to the kinds of interventions that we have seen in other examples where the result state was intentionally caused. What is crucially different here is the fact that there is no intentional agent that acts to cause the relevant result state in the first place. However, for the purposes of licensing the modal-like interpretation for RSM, dispositions and agentive intentions appear to be on a par.

Thus, we propose that the modal-like reading of RSM is dependent on the presence of dispositions, which might be defined as generic properties, tendencies or intentions of entities in the world. These are generally intentions for animate beings but generic properties for inanimates (Copley & Martin 2014; Copley 2018). Copley (2018) makes the observation that intentions of animates and generic properties of inanimates behave uniformly in futurates. Futurates are clauses that "have future reference in the absence of future-oriented morphology, with a 'planned' or 'settled' flavor" (Copley 2018: p. 1). See the examples in (15).

(15) a. I make the coffee tomorrow.
      b. #I get sick tomorrow.
      c. The sun rises at 6:00 tomorrow.   (Copley 2018: p. 6)

(15a) is expected to be felicitous as a futurate because the intentional agent there has the ability to intend or plan to make the coffee tomorrow whereas (15b) is naturally infelicitous considering one does not usually plan to become sick. However, the felicity of (15c) is surprising, for the sun cannot have intentions or the volition to rise at a specific moment in time either. On the other hand, its generic property that it rises at 6:00 according to how nature works in general makes it possible to use the event of sun rising at 6:00 in a futurate. Copley (2018) therefore suggests that the relevant notion here is dispositions. In (15a), the agent has a disposition towards making coffee in the day that follows. Similarly, the sun has a disposition towards rising at 6:00 because of how nature works in general.

In a similar fashion, an intentional causer can have a disposition (i.e. intention) to cause a result state that lasts for a particular period of time, just like the button responsible for cryogenic freezing has a disposition to keep the people in the cabins frozen for three months. In light of the present discussion about dispositions, let us also reconsider (16), where the modal-like reading of RSM cannot be accessed. We can now understand why. The cause in (16) is inanimate, hence cannot have intentions. But more generally, it is impossible to construe a disposition ascribed to a volcanic eruption for burying a city for a specific amount of time, either. Hence, no disposition ascription is possible in this respect. We argue that whenever a disposition ascription is impossible, RSM will have to describe the actual duration for an actual result state.

(16) Volkanik patlama şehri   bin   yıl-lığına küllerin   altına
      volcanic eruption city.ACC thousand year-RSM ashes.GEN under
      göm-dü.
      bury-PST.3SG
      Lit: 'The volcanic eruption buried the city under ashes for a thousand years.'
      ⊨ The city remained buried under the ashes for a thousand years.

On the other hand, if the same verb is placed in a clause where an intentional causer is present who has a disposition for a result state to hold for a period of time, then the actual duration inference is easily cancellable, as shown in (17).

(17) a. Soyguncu-lar paray-ı   bir yıl-lığına bura-ya   göm-dü-ler.
          burglar-PL   money-ACC one year-RSM here-DAT bury-PST-3PL
          Lit: 'The burglars buried the money here for a year.'
          ⊭ The money remained buried here for a year.

      b. … ama polisler bir hafta sonra bulup sahibine verdiler.
   '… but the officers found and gave it to its owner a week later.'

Therefore, the absence of an actual duration entailment is dependent on the presence of a disposition ascription. Of course, this is relevant not only for causative change of state verbs, but also for inchoatives. Our theory predicts that inchoative sentences that feature RSM will generally exhibit actual duration entailment, for they often fail to make a suitable disposition available for the interpretation. However, this is only a tendency, not a rule. We can think of contexts where a theme has a disposition to undergo a change of state and remain in that state for a particular period of time. For example, take the context in (18a) where there is a lake that has a disposition towards being frozen for three months during winter every year. Such a disposition being contextually salient makes it possible for RSM to assume

its modal-like reading parasitic on dispositions. This is diagnosed by the possibility of the felicitous inference cancellation test in (18c).

(18)   a.   Context: In the city that you live in, there is a lake that freezes every year and remains frozen for three months starting from December to February. With this info in the common ground, you say:

        b.   Bu yıl göl yine üç ay-lığına don-du.
            this year lake again three month-RSM freeze-PAST.3SG
            Lit: 'This year, the lake froze again for three months.'
            ⊭ The lake remained frozen for three months.

        c.   . . . ama bu kez bir hafta sonra eridi.
            '. . . but this time, it melted after one week.'

4   A compositional implementation

Recall that we assume that RSM phrases like *iki saatliğine* 'for two hours' may spell out one of the structures in (19).[3]

(19)   a.   DISPP   b.   DURP

               DISP   DURP   DUR two hours

                    DUR two hours
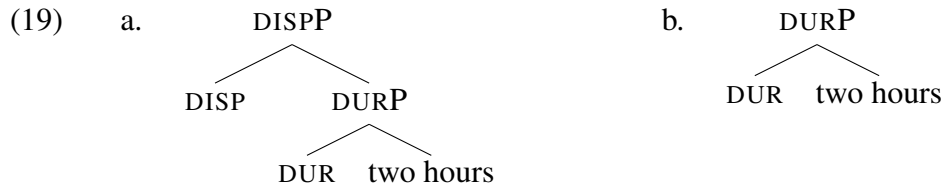
We argue that both of these structures are sublexical modifiers which combine with syntactic nodes that denote result states. For concreteness, we borrow the RESP approach in Ramchand 2008, where the result state corresponds to a RESP projection in the logical form of a complex event.[4]

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3 There are two ways to implement this. We could take the Disposition head in (19a) to have no overt morphological reflex and *-liğine* to spell out the Duration head. Alternatively, *-liğine* can be a portmanteau in the sense of Nanosyntax (Starke 2009; Caha 2009) that can match the syntactic structure [DISPP DISP [DURP DUR]] or match any subtrees it contains, i.e. [DURP DUR]. The two options have the same empirical coverage. Notably, neither option takes into account the overt morphological complexity of *-liğine*, which we need to leave to a future occasion.

4 We take the Q that appears as a sister to RES to denote a property, which may syntactically correspond to a root or a PP.

(20)

DISPP
  DISP   DURP
          DUR   two hours

RESP
  DP   RES   Q

(21)

DURP
  DUR   two hours
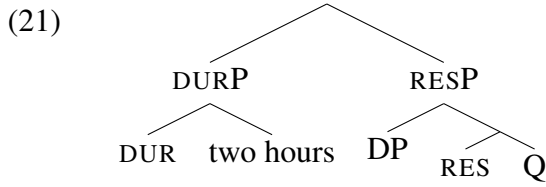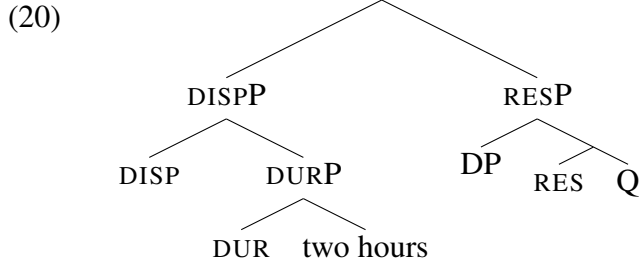
RESP
  DP   RES   Q

DUR takes a time interval t and returns a set of states which are t-long, as shown in (22). Given this semantics for DUR, we predict actual duration entailment for all actual result states in logical forms where DURP directly combines with a RESP.

(22) $[\![\text{DUR}]\!] = \lambda t.\ \lambda s.\ s$ is t-long

Let us, for concreteness, take all causative change of state events, also feature a CAUSE head taking RESP as its complement. The meanings we adopt for CAUS and RES heads are provided in (23).[5]

(23)   a. $[\![\text{CAUS}]\!] = \lambda P_{\langle s,t \rangle}.\ \lambda e.\ \exists s:\ e \rightarrow s\ \&\ P(s)=1$
        b. $[\![\text{RES}]\!] = \lambda Q.\ \lambda x.\ \lambda s.\ Q(x)=1$ in s

Consider the sentence in (24) below and its partial logical form in (25).

(24)   Volkanik patlama şehri   bin   yıl-lığına küllerin   altına
        volcanic eruption city.ACC thousand year-RSM ashes.GEN under
        göm-dü.
        bury-PST
        Lit: 'The volcanic eruption buried the city under ashes for a thousand years.'

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5 The $\rightarrow$ in the meaning of CAUS is the 'leads to' relation adopted from Ramchand 2008. However, it should be noted that the implementation here is not entirely faithful to the Ramchandian event composition.

(25)
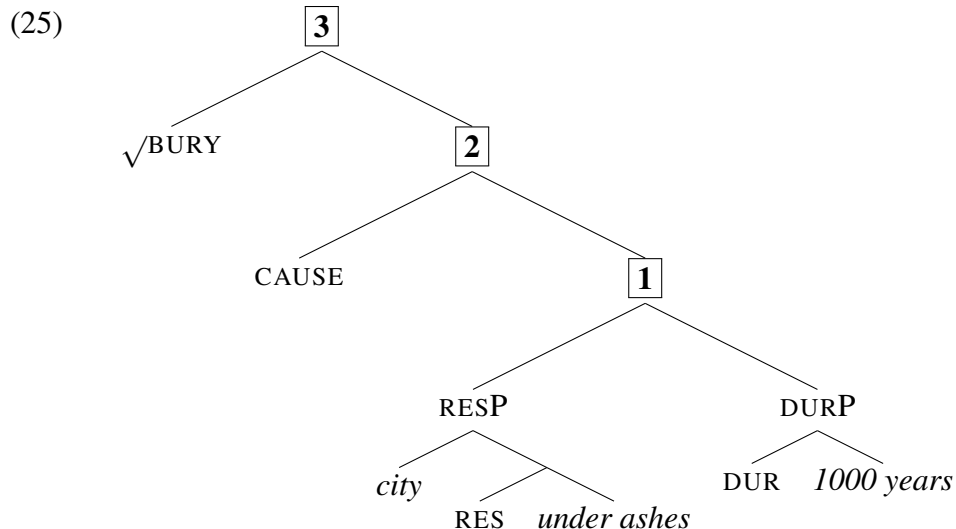
As shown in the derivation in (26), there is a state asserted to exist true of the predicate that we derive by intersecting the meanings of DURP and RESP. For explicitness, we assume that the verbal root, which in this case identifies the manner of the causing event, is intersected with the predicate of events that CAUSP denotes (cf. Beavers & Koontz-Garboden 2020). Finally, the subject will be introduced by a Kratzerian voice projection (Kratzer 1996), completing the logical form corresponding to the event structure. Therefore, given the standard non-modal meanings for perfective aspect and past tense, we fully predict the actual duration entailment.

(26)   a. $[\![\,\boxed{1}\,]\!] =$ (by PM)
          $\lambda s.$ the city is under the ashes in s and s is 1000-year-long.
       b. $[\![\,\boxed{2}\,]\!] =$ (by FA)
          $\lambda e.\ \exists s:\ e \to s\ \&\ [\![\,\boxed{1}\,]\!](s)=1$
       c. $[\![\,\boxed{3}\,]\!] =$ (by PM)
          $\lambda e.\ \exists s:\ e \to s\ \&\ [\![\,\boxed{1}\,]\!](s)=1\ \&\ \mathrm{bury}(e)=1$

As shown in (26), the derivation of the actual duration entailment is entirely parasitic on the derivation of an actual result state. Recall, however, that non-actual duration interpretation is available in the presence of actual result states. In other words, RSM allows us to report non-actual durations (e.g. intended durations) for actual result states. We argue that what makes this possible is the additional DISP head that combines with a DURP. The DISP head projects a DISPP, which directly combines with RESP. The modal meaning we give to the DISP head is provided in (27). We argue that DISP quantifies over the set of worlds compatible with the dispositions of a contextually salient entity, indicated as $[X_{\text{disp-holder in c}}]$ and asserts that in each such world there is a state true of the intersection of RESP and DURP.

Crucially, the meaning of DISP also passes up the meaning of RESP. This is what allows non-actual durations to be reported for actual result states.

(27) $[\![\text{DISP}]\!]^{c,\,w} = \lambda P_{\langle s,t\rangle}.\ \lambda Q_{\langle s,t\rangle}.\ \lambda s.\ Q(s){=}1 \wedge \forall w'$: w' is compatible with the dispositions of $X_{\text{disp-holder in c}}$ in w $\rightarrow \exists s'$ in w' such that P(s')=Q(s')=1

Consider the sentence in (28) and its partial logical form in (29).

(28) Kutu-yu iki saat-liğine oda-ya   koy-du-m.
box-ACC two hour-RSM room-DAT put-PST-1.SG
Lit: 'I put the box in the room for 2 hours.'

(29)
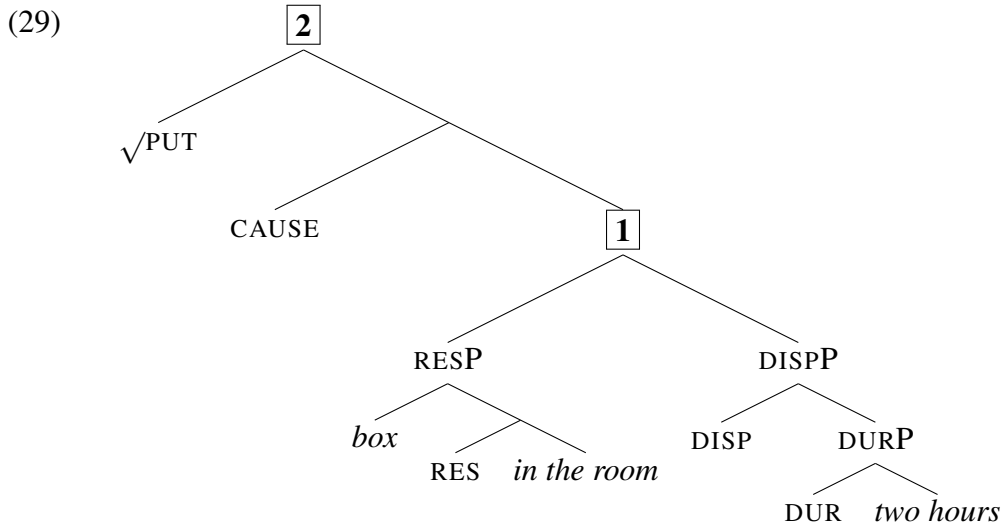
(30) a. $[\![\,\mathbf{1}\,]\!]^{w,\,c} =$ (by FA)
$\lambda s.$ the box is in the room in s & $\forall w'$: w' is compatible with the dispositions of $X_{\text{speaker in c}}$ in w $\rightarrow \exists s'$ in w' such that the box is in the room in s' and s' is two-hour-long

b. $[\![\,\mathbf{2}\,]\!]^{w,\,c} = \lambda e.\ \exists s: e \rightarrow s\ \&\ [\![\,\mathbf{1}\,]\!](s){=}1\ \&\ \text{put}(e){=}1$
the set of events e such that there is a state s such that e leads to s and the box is in the room in s and e is a putting event and
[in all worlds compatible with the dispositions of the speaker, there is a state in which the box is in the room for two hours]

As can be seen in (30b), we derive an actual result state of the box being in the room. In addition, there is a modal meaning, which DISP brings in. This is also part of the assertion but does not interact with the event composition in any way. The DISP head simply uses the information in DURP and RESP, accessing both, to build a modal claim and makes it part of the assertion. This correctly predicts that (28) entails that the speaker put the box in the room but does not entail that the box

remained in the room for two hours.

Hence, the semantics we give to DISP accounts for our main observations. First, we can now explain why the actuality inference regarding the duration of a result state is easily cancellable in the presence of a disposition holder. The DISP head intersects the meanings of DURP and RESP but only in possible worlds compatible with the dispositions of a relevant disposition holder. Second, since the DISP head does not interact with the event composition, actual result state entailments may persist regardless of duration inferences.

Finally, note that the denotation of DISP contains a contextually retrieved disposition holder which, crucially, is not syntactically determined to be the causer/agent. Recall, for example, that in (14), repeated below as (31), DISP seems to be picking up the disposition that belongs to the button/the cyrogenic freezer it initiates. Crucially, the syntax of (31) does not have a DP that corresponds to the button or the cyrogenic freezer. Hence, we tentatively propose that DISP must be allowed to retrieve a disposition from the context. [6]

(31)   a.   Context: All by accident, I pressed a switch button on a spacecraft, causing the Mars passengers in the resting cabins to cryogenically freeze. That button, when pressed, freezes any human in the cabins, and automatically unfreezes them three months later. Luckily, we didn't have to wait that long. A crew member was able to unfreeze them shortly after they got frozen.

       b.   Mars yolcularını   kazara   üç   ay-lığına
            Mars passengers.ACC by.accident three month-RSM
            don-dur-du-m.
            freeze-CAUS-PST-1SG
            Lit: 'By accident, I froze the Mars passengers for 3 months.'
            ⊭ Mars passengers remained frozen for three months

5   Is RSM **ambiguous?**

In the previous section, we have shown how we can derive the modal reading of RSM which allows us to report a non-actual duration for an actual result state. We have argued that this is made possible by the DISP head that builds a modal claim into the truth conditions. We have also considered some contexts where DISP head is not licensed (i.e. when no disposition ascription is possible). When this is the case, we

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6 The context sensitivity of DISP allows any contextually salient disposition holder to be inserted into the meaning of RSM. The question of whether this must be restricted in some way is beyond the scope of this paper and awaits further research.

need to have logical forms without DISP, from which we derive the actual duration entailment for actual result states.

Notably, the morphology does not tell us when the DISP head is part of the logical form or not. Therefore, it may appear that RSM phrases are ambiguous between a plain and modal durative interpretation. In this section, we argue that the ambiguity is only apparent and there is in fact a 'deterministic' interpretation of RSM phrases. The generalization is that the DISP head **is** part of the logical form whenever it is licensed. In other words, RSM phrases need to have the modal durative interpretation, whenever a unique salient disposition can be retrieved.

Recall that in all contexts where the DISP head is not licensed, RSM phrases describe the actual duration of an actual result state. For example, in (16), we have the entailment that the city remained buried under the ashes for a thousand years. Since a volcanic eruption cannot have a disposition towards burying a city for a specific period of time, the DISP head is clearly not licensed here. The only possible logical form will lack the DISP head, which explains why we have the actual duration entailment.

Notably, there are also contexts that do not allow us to use the DISP head, even though the causer is an intentional agent. For example, in (32b), the agent has a clear disposition towards stopping the water flow for two hours. Yet, when uttered in the context provided in (32a), the sentence in (32b) is judged false. The RSM phrase in (32b) accurately describes the intended duration for the result state but it is still not acceptable. The fact that (32b) is judged false suggests that the sentence entails that the water flow remained stopped for two hours, contrary to fact. This is verified by the sentence in (32c), which is acceptable in the context. This is fully predicted if the DISP head cannot be used, forcing the plain durative interpretation for the RSM phrase.

(32)   a.   Context: Because of excessive precipitation and lack of proper infrastructure, your house was flooded last month. Upon realizing that the water started to come into your house, you called the authorities for help, who said a vacuum truck would be there in two hours. So, you intended to stop the water flow by all means for a period of two hours. But you only managed to stop the water flow for half an hour. You tell your friend about this catastrophic event now:

        b.   #O   gün su-yu   iki saat-liğine dur-dur-du-m.
               that day water-ACC two hour-RSM stop-CAUS-PST-1SG
               Lit: 'That day, I stopped the water for two hours.'

    c.   O   gün su-yu   yarım saat-liğine dur-dur-du-m.
           that day water-ACC half   hour-RSM stop-CAUS-PST-1SG
           Lit: 'That day, I stopped the water for half an hour.'

The empirical facts suggest that the DISP head cannot be used in this context. But what explains this finding? There is an intentional agent with a clear disposition towards achieving a result state for a particular period of time. We argue that this is a situation where the agent's disposition is not the only one at play. There is a sharp difference from a state like 'the box being on the table for two hours'. The box and the table have no dispositions that can influence the duration of a result state that contains them. However, in the context involving the flood in (32a), there are different dispositions at play. At the very least, we additionally have the water flow, which itself is a force capable of influencing for how long the result state can be maintained. In other words, there is both a positive disposition towards the result state (i.e. the agent's) and a negative disposition towards the same result state (i.e. the water flow's). Therefore, even when the result state is achieved, its duration cannot be guaranteed by the speaker's intention alone.[7] Perhaps, we can interpret the impossibility of using the DISP head as the inability of retrieving a unique disposition towards that result state.

Hence, the plain durative reading of RSM is forced when the DISP head is not licensed. We have seen that there are at least two situations where the DISP head is not licensed: when no disposition ascription is possible, and when there is more than one disposition at play relevant for the duration of a result state. However, we have not yet shown whether the plain durative interpretation of RSM is available even when the DISP head is licensed. That is, can we have contexts where an intentional causer K causes a result state but the duration RSM reports is distinct from what K intended? This is not trivial because we diagnose the modal reading of RSM by a cancellation test. So, when the DISP head is licensed, speakers can and will choose to parse the sentence with the DISP head so as to make the follow-up sentence felicitous. However, we can still distinguish the actual duration from the intended duration within contexts where the intended duration is shorter than the actual duration.

For example, the context in (33a) makes it clear that the relevant result state lasted for one week although it was intended to last exactly three days. Nevertheless, the sentence in (33b) which tries to report the actual duration of Ali's stay in Ankara is judged false.

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7 There are situations that require more than one disposition in the realization of result states. These situations seem to be parallel to what is referred to as *colliders* in causal models (Copley 2021). As far as we can see, collider contexts force the plain durative reading of RSM.

(33)   a.   Last year, Ali went to a linguistics conference in Ankara, intending to stay there for exactly three days since the conference lasted for 3 days. However, he broke his leg in Ankara and had to stay in hospital for an additional four days. Hence, he stayed in Ankara for a week in total.

        b.   #Ali geçen yıl   bir hafta-lığına Ankara-ya   git-ti.
            Ali last   year one week-RSM Ankara-DAT go-PST
            Lit: 'Last year, Ali went to Ankara for a week.'

The context provided in (33a) makes it clear that the intended duration for the result state is exactly 3 days. However, Ali stayed in Ankara for a week after all. In this context, the sentence in (33b) is judged false, indicating that it cannot be interpreted as 'Ali initiated a state S of being in Ankara and S was one-week-long'. Even though other explanations may be possible here, it is clear that this reading cannot be generated when the DISP head is part of the structure. What the DISP head would do is to attribute the disposition towards staying in Ankara for a week to Ali. Given that this is a false attribution, the presence of the DISP head fully predicts the judgment for (33b). Crucially, the data at hand may be showing us that the DISP head must be used whenever it is licensed. Speakers apparently cannot posit a logical form for (33b) without DISP. If that were possible, the sentence in (33b) could be judged true.

To summarize our claims, RSM is not really ambiguous between a plain and a modal reading. It seems that its basic interpretation corresponds to the structure that features the DISP head. However, when the DISP head is not licensed, its interpretation seems to be coerced into a plain durative modifier without the DISP head. The finding that the DISP head must be used whenever it is licensed might follow from the intricate relationships between causality, result states and dispositions. A more thorough investigation, supplemented with cross-linguistic data, awaits further research.

6   Conclusion

This study investigated the distribution of the two readings of a durative modifier that only targets result states in Turkish. We called this modifier RSM, standing for Result State Modifier, and we showed that it can express the actual duration or a non-actual duration of a result state. We argued that only when the non-actual duration reading is unavailable, does the actual duration interpretation surfaces.

Our discussion demonstrated that the non-actual duration interpretation of RSM is generated when there is a disposition ascription available towards the duration of a result state. We proposed that the disposition ascription is mediated by a DISPP

projection. Furthermore, we defended the idea that the basic structure corresponding to RSM has to contain DISPP whenever it is licensed. More specifically, RSM is coerced into a plain durative modifier only when DISPP is not licensed, i.e. when there is no unique salient disposition holder salient in the context. The reason why DISPP is not simply optional in contexts where it is licensed remains as an important question for future research.

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