

## From temporal to concessive meaning: a semantic analysis of ‘still’\*

Aynat Rubinstein  
*The Hebrew University of Jerusalem*

Elena Herburger  
*Georgetown University*

**Abstract** We develop a new proposal about the historical connection between the durative and concessive readings of English *still* and Hebrew *ʕadain*, a connection that shows striking parallels in the two languages. Building on a corpus study of Hebrew (Rubinstein forthcoming), we argue that durative ‘still’ precedes the concessive ‘still’ and that the latter first arises in bridging contexts (and earlier than previously thought). In contrast to previous literature, our proposal places the temporal-to-concessive development squarely in the semantics. We argue that concessive ‘still’ emerges when an originally durative ‘still’ gets “infected” with a concessive meaning that is expressed explicitly in the rest of the sentence.

**Keywords:** *still*, *ʕadain*, durative adverbs, concessive adverbs, semantic change, diachronic semantics

### 1 Introduction

Among the various uses of English *still* we focus on two central ones in this paper, that of *still* as a temporal adverb with a durative interpretation, illustrated in (1a), and that of *still* as a concessive adverb, exemplified in (1b).<sup>1</sup>

- (1) a. Kim is **still<sub>d</sub>** living with her parents.  
b. Kim **still<sub>c</sub>** traveled to Sardinia.

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<sup>1</sup> There are additional readings of *still* that we will set aside for the time being, including what are called the marginal spatial and the marginal degree readings (König 1977; Ippolito 2007) and a discourse-related reading discussed by Beck (2016). We come back to the question of how a more inclusive semantic analysis of ‘still’ fits with our claims about historical development in the final section of the paper. *Still* also functions as a manner adverb meaning ‘motion-less, devoid of movement’ (as in *stand still*, *still waters*).

Strikingly, similar to English *still*, Hebrew *ʕadain* also displays a series of uses, most important of which are its durative and concessive uses, as in (2a) and (2b), respectively:

- (2) a. *qim ʕadain gara im ha-horim.*  
 Kim ADAIN lives with the-parents  
 ‘Kim is still<sub>d</sub> living with her parents.’
- b. *qim ʕadain nasʕa le-sardinia.*  
 Kim ADAIN traveled to-Sardinia  
 ‘Kim still<sub>c</sub> traveled to Sardinia.’

In (1a) and (2a), ‘still’ is durative (henceforth d-still) in that it expresses that the state of Kim’s living with her parents continues at the reference time, the time of utterance (see among others Löbner 1989; Michaelis 1993; Krifka 2000; Ippolito 2007; Greenberg 2009; Beck 2020). In (1b) and (2b), in contrast, ‘still’ is not interpreted duratively but concessively (henceforth c-still); it intuitively expresses that Kim traveled to Sardinia despite there being some reason to think she would not.<sup>2</sup> Our main aim is to get a better understanding of the relation between d-still and c-still, both in terms of their meaning and their history.

In addition to their salient meaning difference, c-still is well known to have a wider distribution than d-still. C-still readily combines with event predicates, including predicates describing punctual achievements, as we can see in (1b) and (2b). In contrast, d-still is only possible with stative predicates and eventive predicates that have been negated, as in (3a), which effectively stativizes them (Michaelis 1993; Mittwoch 2019). We thus find that while (3a) can have both a durative and a concessive reading, only the concessive reading is available for its non-negated counterpart in (3b). We believe the same is true of English *still*, as reflected in our translations of these sentences.

- (3) a. *hi ʕadain lo mats’a dira.*  
 she ADAIN NEG found apartment  
 ‘She still<sub>d/c</sub> hasn’t found an apartment.’
- b. *hi ʕadain mats’a dira.*  
 she ADAIN found apartment  
 ‘She still<sub>c</sub> found an apartment.’

Research on the relationship between d-still and c-still in the synchronous grammar has sought a unified meaning for the adverb that is able to accommodate its various uses (e.g., Michaelis 1993, Beck 2020). From a diachronic perspective,

<sup>2</sup> This is sometimes also referred to as an adversative use of *still* (Michaelis 1993).

From temporal to concessive ‘still’

however, it is well-established that d-still predates c-still, not just in English (König & Traugott 1982) but also in Hebrew (Tsirkin-Sadan 2019). One of our goals in this paper is to better understand the emergence of c-still. As illustrated in the following quote from König & Traugott 1982, the idea has been that this development is rooted in pragmatic reasoning: asserting that an event takes place while another event continues leads according to these authors to the inference that the second event occurs *despite* the first one occurring.

The change from a temporal to a concessive meaning is common in the languages of the world. There is a strong affinity between the notions of “continuation” and “concessiveness” ... The assertion that “q continues” given another fact p gives rise to the generalized conversational implicature that this persistence is remarkable or unexpected and that therefore p and q do not normally go together. This conversational implicature later comes to be conventionally associated with the temporal adverbs. (König & Traugott 1982: 178)

In this paper we aim to understand the connection between durativity and concessiveness better. Based on corpus facts from Hebrew, we argue that c-still arose from d-still when the concessiveness that surrounded it in the rest of the sentence came to be understood as part of the meaning of *šadain* itself. Although our focus will be on Hebrew data, we can use the English example in (4) to illustrate our idea about the environment triggering the temporal-to-modal change.

- (4) For e’en though vanquished, he could argue **still**. (O. Goldsmith, *Deserted Village*, 1770)

What characterizes the early examples where the durative adverb can be parsed as being concessive is that they include explicit concessive markers (boxed here and in the examples to come), and that *still* can often also be read as expressing temporal duration (in (4), his ability to argue continued). Our proposal is that the concessive meaning, which is semantically entailed by the sentence as a whole, can, through examples like these, become associated with ‘still’, and that, over time, ‘still’ acquires the ability to appear with a concessive meaning without there being concessiveness marked elsewhere.

The rest of the paper is structured as follows. In section 2 we present findings from a historical corpus in which *šadain* has both durative and concessive uses. We then develop our analysis, beginning with the semantics of d-still vs. c-still in section 3.1. In section 3.2 we lay out our proposal about how the concessive reading arose in the bridging contexts revealed in the corpus study. We analyze the bridging contexts for c-still in detail in section 3.3. Section 4 discusses how our proposal relates to

current thinking about semantic change and section 5 situates it in the context of a unified lexical entry for ‘still’ proposed in the recent literature. We conclude with some possible directions for future research.

## 2 Bridging contexts

As noted at the outset, d-still is older than c-still. This is in keeping with a more general observation that when it looks like one word has both a temporal and a modal meaning the temporal interpretation precedes the modal one.

To gain a better understanding of the dynamics of the emergence of c-still, we can look at the range of uses exhibited by *ʕadain* in a historical corpus. In a previous study, Rubinstein (forthcoming) annotated a sample of instances of *ʕadain* in the Jerusalem Corpus of Emergent Modern Hebrew (JEMH; Rubinstein 2019), a corpus documenting the revival of everyday use of Hebrew in the late 19th and early 20th century. The JEMH corpus consists mainly of literary texts from Project Ben-Yehuda,<sup>3</sup> but also includes ephemera such as ads, announcements, and letters representing more everyday language use.<sup>4</sup>

Table 1 shows the breakdown of the different uses of *ʕadain* in the annotated sample of 778 instances (out of 2754 instances of this token in the corpus). In this sample, *ʕadain* is most often used to express temporal duration (669 of 778 instances). A sizable portion of the data (100 instances) can have both a durative and a concessive interpretation, as exemplified in (5) below. We call these *bridging contexts*.

Meaning	Count	In concessive construction
Durative	669	
Durative/concessive	100	79 (79%)
Concessive	4	4 (100%)
Other	5	
Total	778	

**Table 1** Sample of *ʕadain* in the JEMH Corpus (Rubinstein 2019), 1883-1951.

In the bridging example in (5), the main clause can be understood as describing an extended duration of a state, that of an issue remaining unresolved (‘a question mark accompanies it’), while the concessive adjunct contributes the information that there have been many attempts at resolving the issue. Overall, the sentence states

<sup>3</sup> <https://benyehuda.org/>.

<sup>4</sup> The JEMH corpus is freely available for download and can also be searched online, at <http://jemh.researchsoftwarehosting.org/>.

From temporal to concessive ‘still’

that the issue is unresolved *despite* numerous attempts to resolve it. This allows for a reading of the sentence in which *ʕadain* itself matches the concessive flavor of the overt concessive (*lamrot*) in the adjunct clause. The *still* in the translation seems to be interpreted similarly, as both durative and concessive.

- (5) ... lamrot hamon ha-pitronim še-kvar himtsi’u l-o, **ʕadain**  
... despite multitude DEF-solutions that-already invented for-it, ADAIN  
siman ha-še’ela melavehu  
mark DEF.question accompanies.it  
‘Although plenty of explanations have already been provided for it, it is still accompanied by a question mark.’ (Ahad Ha-ʕam, *ʕal štey ha-se ʕipim*, 1910)

While the number of ambiguous examples is sizable (100/778 in our sample), at this early stage there are a few examples where *ʕadain* seems unambiguously concessive (only four). One of them is shown in (6). In a discussion about whether or not the Hasmoneans spoke Hebrew, the author of this sentence argues that naming a place in Hebrew does not constitute evidence for speaking Hebrew. An overt concessive marker (*afilu im* ‘even if’) is present alongside *ʕadain*, which itself modifies a negated stative predication (‘is not evidence that ...’). The durative meaning of *ʕadain* is not pragmatically plausible here; the example is not concerned with how long something does or does not constitute evidence for what is said.

- (6) afilu im naniax ... eyn zo **ʕadain** re’aya še-hem gam  
even if we.suppose ... NEG.EXIST this ADAIN evidence that-they also  
dibru ʕivrit ...  
spoke Hebrew ...  
‘Even if we suppose [that it’s all true, and that the Hasmoneans gave this place a Hebrew name and not an Aramaic one] it still isn’t evidence that they also spoke Hebrew.’ (E. Ben-Yehuda, *Until when was Hebrew spoken?*, 1919)

In contemporary Hebrew the situation is quite different. One difference is that purely concessive uses seem to have increased. Tsirkin-Sadan (2019: 103) reports considerably higher percentages of purely concessive uses of *ʕadain* in a present-day spoken corpus, namely 20%.<sup>5</sup> Strikingly, of those 20% of unambiguously concessive uses, 52%—i.e., more than half—are reported to co-occur with *aval* (‘but’; p. 104),

<sup>5</sup> Tsirkin-Sadan (2019) sampled additional corpora, including written corpora, but provides only partial information about the distribution of *ʕadain* in them. In a sample of 1847 instances of the adverb in a 1965 journalistic corpus, Tsirkin-Sadan (2019) judged only 0.97% (18 instances) to be unambiguously concessive (p. 103). A large proportion of these, namely 83.33% (15 instances), occurred in an overt concessive construction.

which we can consider a marker of concessiveness. Another important difference between contemporary Hebrew and earlier forms of the language is that it is clear that concessive readings of *šadain* are at present possible with all sorts of predicates, including non-negated eventive ones (recall our example in (2b) above).<sup>6</sup>

Because of the dearth of concessive readings she observed in a 1965 corpus when compared to a 2015 corpus, Tsirkin-Sadan (2019) attributed the emergence of concessive *šadain* in Hebrew to the influence of concessive English *still* in the 1960s. However, based on examples like (6), Rubinstein (forthcoming) concludes that concessive uses were already possible earlier on. Moreover, Rubinstein's (forthcoming) study suggests that concessive interpretations of *šadain* tended to first enter the language in sentences that independently express concessiveness and where *šadain* combines with a stative predicate. (This is true of 79% of the ambiguous examples and 100% of the purely concessive ones we see in Table 1.)<sup>7</sup> As we will discuss below, we believe this finding helps shed light on how the concessive reading came into existence.

### 3 The emergence of c-still

As we have seen, in a considerable majority of early examples in which *šadain* is interpreted concessively, concessiveness is expressed overtly by another element in the sentence. In this section we outline the semantics of d-still and of overt concessives (focusing for expository reasons on one construction in particular) and argue that c-still emerged as a result of “semantic reanalysis” of the entailments of sentences that contain both ingredients.

#### 3.1 Ingredients: d-still and concessive marking

In analyzing the lexical semantics of durative ‘still’ in English and other languages, multiple authors have endorsed an account with two components following Löbner (1989): an assertion that *P* holds at the reference time *t* and a presupposition that *P* also held at an adjacent interval, such that the eventuality “stretches” from a previous time *t'* until *t*.

One way to understand the semantics of d-still, following Ippolito (2007), is then to say that *still<sub>d</sub> P* denotes a set of times at which *P* holds of an eventuality *e*,

<sup>6</sup> Three of the four examples reported to be unambiguously concessive in Rubinstein (forthcoming) feature main clause predicates that are stative and could in principle also combine with a durative interpretation of the adverb. In one example, matters are less clear. The verb describes what can be considered an event (‘interfere’). However, the aspectual information seems to be that similar to a present participle, and perhaps imperfective.

<sup>7</sup> A range of concessive markers is found in these examples, including *lamrot* (‘despite’) as in (5), *afilu im* (‘even if’) as in (6), *aval/ela še-/ax* (‘but’), *omnam* (‘indeed’), and others.

From temporal to concessive ‘still’

and that it presupposes that this  $P$  also held of  $e$  at a prior moment. Because we are dealing with the same eventuality, it follows that only those predicates that describe state(-like) eventualities can combine with  $still_d$ , as only they describe eventualities that are stretchy enough (cf. Michaelis 1993). We will be referring to this temporal presupposition as  $\mathcal{T}$ , as seen in the second line of the lexical entry for d-still we provide in (7).<sup>8</sup>

$$(7) \quad \begin{aligned} &[[still_d/\zeta adain_d P]] = \lambda e \lambda t \lambda w \text{ In}(e, w) : \\ &\quad \exists t' < t \ \& \ P(e)(t')(w). \qquad \qquad \qquad [= \mathcal{T}] \\ &\quad P(e)(t)(w). \end{aligned}$$

Example (1a) is now interpreted as in (8), assuming the present time  $t_{now}$  is the reference time and  $w$  is the world of evaluation.<sup>9</sup> It asserts that Kim is living with her parents and presupposes that this eventuality (boldfaced in the formula) has been ongoing.

$$(8) \quad \begin{aligned} &\exists e \text{ In}(\mathbf{e}, w) : \exists t' < t_{now} \ \& \ \mathbf{KimLiveWithParents}(\mathbf{e})(t')(w). \\ &\quad \mathbf{KimLiveWithParents}(\mathbf{e})(t_{now})(w). \end{aligned}$$

Turning now to concessive markers, as we saw earlier, the earliest concessive readings of Hebrew ‘still’ seem to arise in sentences that mark concessiveness elsewhere in the sentence. Based on this, we hypothesize that concessiveness is in fact an ingredient in the emergence of c-still. As is well documented, languages may have a wide range of concessive markers, each with a subtly distinct semantic contribution (see König 1988; Lund 2017; Zussman 2013). Here we will be concentrating on the semantic contribution of one such marker, corresponding to English ‘(al)though’.<sup>10</sup>

$$(9) \quad \begin{aligned} &[[although/despite/lamrot Q]] = \lambda P \lambda e \lambda t \lambda w \text{ In}(e, w) : \\ &\quad \boxed{\exists e' [\text{In}(e', w) \ \& \ Q(e')(t)(w) \ \& \ \mathbf{SHOULDNT}_{e'}(P)(t)]}. \qquad \qquad \qquad [= \mathcal{M}] \\ &\quad P(e)(t)(w). \end{aligned}$$

8 Our analysis is consistent with a view where what are generally called presuppositions are backgrounded, not-at-issue entailments and where the logic remains bivalent.

9 We are glossing over details of argument association in this derivation as well as the composition of tense and aspect. It is interesting to note, moreover, that the sentence in (8) is in the present tense. As noted by Greenberg (2009), past tense sentences with durative ‘still’ are somewhat odd out of the blue unless there is prior mention of a reference time for the eventuality (e.g., *Kim was still living with her parents* ?? (in April)). We remain agnostic about the source of this fine-grained aspect of the meaning of d-still.

10 As noted above, additional markers are found in the historical corpus, which differ from ‘although’ in certain aspects. For example, the concessive marker ‘even if’ does not entail that the eventuality it describes holds in actuality. We leave the discussion of how d-still interacts with additional concessive markers for future research.

$$(10) \quad \llbracket \text{SHOULDNT}_{e'}(P)(t) \rrbracket = 1 \text{ iff } \forall w'' [w'' \in \text{Best}(e') \rightarrow \neg \exists e'' P(e'')(t)(w'')].$$

Where  $\text{Best}(e) =$

$$\{w : w \in \bigcap \text{Acc}_{\text{circumstantial}(e)} \ \& \ \neg \exists v [v \in \bigcap \text{Acc}_{\text{circumstantial}(e)} \ \& \ v <_{g(e)} w]\}.$$

According to this analysis, the ‘although’ clause needs to combine with a predicate  $P$  in order to give a propositional meaning. The ‘although’ clause presupposes that there is a contextually supplied  $Q$ -eventuality  $e'$  (“the problem”) such that in the worlds best circumstantially accessible from it, there is no eventuality  $e''$  where  $P$  is true at the reference time  $t$ .<sup>11</sup> We will be referring to this modal presupposition as  $\mathcal{M}$  (boxed) in what follows. Put informally, ‘although’ presupposes that something specific in the context, something that satisfies  $Q$ , makes us expect that  $P$  should not be true at  $t$ . What the sentence asserts, however, is that  $P$  does in fact hold at  $t$ . We can illustrate this meaning with a simple example like (11) (without ‘still’).

(11) Although it was difficult, they persevered.

This sentence asserts that some individuals persevered. It moreover presupposes that for some difficulty  $e'$  (‘the problem of it being difficult’) the best worlds that are circumstantially accessible from it are characterized by a lack of perseverance at the relevant past time. The result is a concessive meaning in which they persevered despite the difficulty.

- (12) a.  $\llbracket \text{although [it was difficult]} \rrbracket = \lambda P \lambda e \lambda t \lambda w \text{In}(e, w) :$   
 $\exists e' [\text{In}(e', w) \ \& \ \text{ItWasDifficult}(e')(t)(w) \ \& \ \text{SHOULDNT}_{e'}(P)(t)].$   
 $P(e)(t)(w).$
- b.  $\llbracket (12a) \rrbracket \langle \llbracket \text{they persevered} \rrbracket \rangle = \lambda e \lambda t \lambda w \text{In}(e, w) :$   
 $\exists e' [\text{In}(e', w) \ \& \ \text{ItWasDifficult}(e')(t)(w) \ \& \ \text{SHOULDNT}_{e'}(\text{TheyPersevered})(t).$   
 $\text{TheyPersevered}(e)(t)(w).$
- c. With tense and aspect (details not shown):  
 $\llbracket (11) \rrbracket^{w_0} = \exists e \text{In}(e, w_0) :$   
 $\exists e' [\text{In}(e', w_0) \ \& \ \text{ItWasDifficult}(e')(t_{\text{now}})(w_0)$   
 $\ \& \ \forall w'' [w'' \in \text{Best}(e') \rightarrow \neg \exists e'' \text{TheyPersevered}(e'')(t_{\text{now}})(w'')].$   
 $\text{TheyPersevered}(e)(t_{\text{now}})(w_0).$

### 3.2 Concession infecting ‘still’

Turning now to how c-still might have arisen, we propose that in the bridging examples the presupposition  $\mathcal{M}$  that originates with a concessive marker can also

<sup>11</sup> We extend this analysis to a concessive marker like ‘despite’, even when it combines with what looks like a quantifier or a referential expression. See (21) below.



From temporal to concessive ‘still’

come to be interpreted as a presupposition of ‘still’, supplanting  $\mathcal{T}$ . The result is a lexical item for ‘still’ that is “infected” with concessiveness (cf. Bréal’s 1897 notion of “contagion” in connection with the history of French *personne* and how it came to also have a negative meaning, cf. Herburger (to appear)):

$$(13) \quad \llbracket \text{still}_c / \text{S adain}_c P \rrbracket = \lambda e \lambda t \lambda w \text{ In}(e, w):$$

$$\boxed{\exists e' [\text{In}(e', w) \ \& \ Q(e')(t)(w) \ \& \ \text{SHOULDNT}_{e'}(P)(t)]}$$

$$P(e)(t)(w).$$

According to this analysis, c-still no longer comes with the presupposition  $\mathcal{T}$  but contributes the same concessive presupposition  $\mathcal{M}$  as ‘although’, but leaves it to context to provide a value for  $Q$ , thereby specifying “the problem”.

We can see the resulting analysis of c-still at work in our initial English example in (1b), *Kim still<sub>c</sub> traveled to Sardinia*. We assume that ‘still’ in this case combines with a predicate of events  $e$ , times  $t$ , and worlds  $w$  which is true of events of Kim traveling to Sardinia. The assertion is that at  $t$  it holds that a trip took place before  $t$ . In addition, the sentence presupposes that there is another eventuality,  $e'$ , which is a  $Q$ -eventuality and also an eventuality that prevents Kim’s traveling to Sardinia at the relevant time in the best accessible worlds. The context supplies the value for  $Q$ , specifying what kind of problem or obstacle Kim encountered (for example, an airline strike).

We are now in a position to analyze examples in which concession is expressed redundantly, so to speak, by both an ‘although’ adjunct and by c-still in the main clause, as in (14). As a first step, we assume that (14) is composed as in (15).

(14) Although there was an airline strike, Kim still traveled to Sardinia. (She took the train and then the ferry.)

(15)  $\llbracket \text{although} \rrbracket (\llbracket \text{there was an airline strike} \rrbracket) (\llbracket \text{still}_c \rrbracket (\llbracket \text{Kim traveled to Sardinia} \rrbracket))$

(16) shows the interpretation we derive for the main clause. (17) shows the interpretation derived for the ‘although’ adjunct. Finally, (18) shows how the two combine. According to this analysis, the sentence asserts that Kim traveled to Sardinia while presupposing that the airline strike was a potential impediment to that. (We use *AirlineStrike* as a shorthand for  $\llbracket \text{there was an airline strike} \rrbracket$ , and *KimTraveledToSardinia* for  $\llbracket \text{Kim traveled to Sardinia} \rrbracket$ .)

(16) Main clause:  
 $\llbracket \text{still}_c \text{ KimTraveledToSardinia} \rrbracket = \lambda e \lambda t \lambda w \text{ In}(e, w):$   
 $\exists e' [\text{In}(e', w) \ \& \ Q(e')(t)(w) \ \& \ \text{SHOULDNT}_{e'}(\text{KimTraveledToSardinia})(t)].$   
 $\text{KimTraveledToSardinia}(e)(t)(w).$

- (17) The ‘although’ adjunct:  
 $[[\textit{although AirlineStrike}]] = \lambda P \lambda e \lambda t \lambda w \textit{In}(e, w) :$   
 $\exists e' [\textit{In}(e', w) \ \& \ \textit{AirlineStrike}(e')(t)(w) \ \& \ \textit{SHOULDNT}_{e'}(P)(t)].$   
 $P(e)(t)(w).$
- (18) The whole sentence, derived by Function Application with (17) as the function and (16) as the argument:  
 $\lambda e \lambda t \lambda w \textit{In}(e, w) :$   
 $\exists e' [\textit{In}(e', w) \ \& \ \textit{AirlineStrike}(e')(t)(w) \ \& \ \textit{SHOULDNT}_{e'}(\textit{KimTraveledToSardinia})(t)]$   
 $\ \& \ \exists e' [\textit{In}(e', w) \ \& \ Q(e')(t)(w) \ \& \ \textit{SHOULDNT}_{e'}(\textit{KimTraveledToSardinia})(t)]$   
 $\ \& \ \exists e' [\textit{In}(e', w) \ \& \ Q(e')(t)(w) \ \& \ \textit{SHOULDNT}_{e'}(\textit{KimTraveledToSardinia})(t)].$   
 $\textit{KimTraveledToSardinia}(e)(t)(w).$

The presupposition of *still* (that there was a contextually relevant problem) figures twice because the main clause contributes both to the presupposition of *although* and also to its assertion. We take the ‘still’ presuppositions to project into the presupposition of *although*, resulting in a global presupposition shown in lines 2-4 of (18) above. Assuming that the hearer takes the value of *Q* to be provided by *the airline strike*, the second and third line in the presupposition become redundant. Rather than this being a problem, we think this redundancy matches the (unproblematic) redundancy we intuitively observe when we have both ‘although’ in the adjunct clause and ‘still’ in the main clause. When we now spell out the modal component of the presupposition (as in (19a)), we obtain (19b) as the single overall presupposition of the sentence:

- (19) a.  $\textit{SHOULDNT}_{e'}(\textit{KimTraveledToSardinia})(t) =$   
 $\forall w'' [w'' \in \textit{Best}(e') \rightarrow \neg \exists e'' \textit{KimTraveledToSardinia}(e'')(t)(w'')]$   
 b.  $\exists e' [\textit{In}(e', w) \ \& \ \textit{AirlineStrike}(e')(t)(w)$   
 $\ \& \ \forall w'' [w'' \in \textit{Best}(e') \rightarrow \neg \exists e'' \textit{KimTraveledToSardinia}(e'')(t)(w'')]]$

### 3.3 Bridging contexts in detail

We can now return to the historical record of how c-still develops. Recall that the syntactic structure of example (14), where we have a concessive clause and *still* in the main clause, is precisely the kind of linguistic context in which we find the first concessive uses of *ʕadain* in Hebrew. Example (5), which we repeat here, illustrates this:

- (5) ... lamrot hamon ha-pitronim še-kvar himtsi'u l-o, **ʕadain**  
 ... despite multitude DEF-solutions that-already invented for-it, ADAIN  
 siman ha-še'ela melavehu  
 mark DEF.question accompanies.it

From temporal to concessive ‘still’

‘Although plenty of explanations have already been provided for it, it is still accompanied by a question mark.’ (Ahad Ha-Šam, *Šal štey ha-sešipim*, 1910)

One crucial difference between bridging examples like (5) and (14), however, is that the bridging examples all seem to feature a stative predicate. As such, they also allow for a durative reading of ‘still’. This durative interpretation is available because the main predicate describes a state-like eventuality (‘be accompanied by a question mark’). Along with a durative interpretation of ‘still’, (5) also invites a second interpretation, on which *šadain* is infected with the concessiveness that surrounds it and where it is interpreted as c-still.

To illustrate how this might work, we start by analyzing the interpretation of the sentences assuming that *šadain* is read in its original durative meaning. (We use an English translation below instead of Hebrew for ease of presentation. *QuestionAccompaniesIt* is shorthand for  $\llbracket it \text{ is accompanied by a question mark} \rrbracket$  and *ThereArePlentySolutions* is shorthand for  $\llbracket plenty \text{ of solutions have been provided for it} \rrbracket$ ). We first show how the main clause composes in (20). (21) then illustrates how the interpretation of the concessive adjunct comes about.<sup>12</sup> The combination of the main clause with the adjunct is shown in (22):

- (20) Main clause:  
 $\llbracket still_d \text{ QuestionAccompaniesIt} \rrbracket =$   
 $\lambda e \lambda t \lambda w \text{ In}(e, w) : \exists t' < t \ \& \ \text{QuestionAccompaniesIt}(e)(t')(w).$   
 $\text{QuestionAccompaniesIt}(e)(t)(w).$
- (21) Concessive adjunct:  
 $\llbracket despite \text{ ThereArePlentySolutions} \rrbracket =$  (by FA with  $\llbracket despite \rrbracket$  as the function;  
 see (9) above)  
 $\lambda P \lambda e \lambda t \lambda w \text{ In}(e, w) :$   
 $\exists e' [\text{In}(e', w) \ \& \ \text{ThereArePlentySolutions}(e')(t)(w) \ \& \ \text{SHOULDNT}_{e'}(P)(t)].$   
 $P(e)(t)(w).$
- (22) The whole sentence (by FA, with (21) as the function and (20) as the argument):  
 $\lambda e \lambda t \lambda w \text{ In}(e, w) :$   
 $\exists e' [\text{In}(e', w) \ \& \ \text{ThereArePlentySolutions}(e')(t)(w) \ \& \ \text{SHOULDNT}_{e'}(\text{QuestionAccompaniesIt})(t)] \ \&$   
 $\exists t' < t \ \& \ \text{QuestionAccompaniesIt}(e)(t')(w) \ \&$   
 $\exists t' < t \ \& \ \text{QuestionAccompaniesIt}(e)(t')(w).$   
 $\text{QuestionAccompaniesIt}(e)(t)(w).$

<sup>12</sup> As noted above, we assume that the noun phrase sister of ‘despite’ has an intensional predicative meaning.

As can be seen in (22), when the concessive adjunct clause combines with the main clause we derive an interpretation that asserts that an issue that has been discussed remains unresolved (a question continues to accompany it, metaphorically). The sentence is furthermore predicted to carry rich presuppositional content. Because of the concessive clause, it presupposes the existence of plenty of solutions at the reference time; these solutions should have settled the issue, but they didn't. In addition, because of the durative interpretation of *ɣadain*, the sentence presupposes the continued presence of the question mark. As before, we assume that the presuppositions project to form one single conjunctive presupposition. (The temporal presupposition appears twice because the main clause saturates an argument in the presupposition and in the assertion contributed by the concessive adjunct. We may eliminate one of the redundant conjuncts.)

The status of the durative presupposition  $\mathcal{T}$  in (22) is weak. One reason is that the adjunct clause highlights the concessive perspective on the state of unresolvedness. Another is that the presupposition that this has been ongoing is already pragmatically entailed by the content of the adjunct clause: if plenty of solutions have been given to an issue, we understand that this issue is not a new one but has been present for a while—for at least the time during which there have been attempts to solve it.

We think it is plausible that given the feebleness of the presupposition  $\mathcal{T}$  and the fact that it is pragmatically entailed in examples like (22), 'still' may come to be interpreted as lacking  $\mathcal{T}$ . This results in the lexical entry shown earlier in (13), which then derives the following overall meaning for the sentence:

$$(23) \quad \lambda e \lambda t \lambda w \text{ In}(e, w) : \\ \exists e' [\text{In}(e', w) \ \& \ \text{ThereArePlentySolutions}(e')(t)(w) \ \& \\ \text{SHOULDNT}_{e'}(\text{QuestionAccompaniesIt})(t)] \ \& \\ \exists t' \prec t \ \& \ \text{QuestionAccompaniesIt}(e)(t')(w) \ \& \\ \exists t' \prec t \ \& \ \text{QuestionAccompaniesIt}(e)(t')(w) \\ \text{QuestionAccompaniesIt}(e)(t)(w).$$

The irrelevance of  $\mathcal{T}$  in the interpretation of *ɣadain* now makes room for a different presupposition; the concessiveness expressed by the 'despite'-clause takes on this role, resulting in  $\mathcal{M}$  supplanting the former  $\mathcal{T}$  as the presupposition of *ɣadain*. We assume that what drives 'still's' acquiring this new presupposition when it loses  $\mathcal{T}$  is a manner-driven pressure to enrich the meaning of *ɣadain* with a presupposition in order to justify its presence in the sentence. Once  $\mathcal{M}$  becomes part of a lexical entry, we have two ways of interpreting *ɣadain*; alongside d-still the lexicon also has the homophonous c-still.

As we illustrate in (24)-(26), when *ɣadain* is interpreted as c-still, the sentence in (5) is interpreted in a manner that parallels the interpretation that we saw earlier for the ("redundant") English example in (14).

From temporal to concessive ‘still’

- (24) Main clause:  
[[*still<sub>c</sub> QuestionAccompaniesIt*]] =  $\lambda e \lambda t \lambda w$   $In(e, w)$ :  
 $\exists e' [In(e', w) \& Q(e')(t)(w) \& SHOULDNT_{e'}(QuestionAccompaniesIt)(t)]$ .  
 $QuestionAccompaniesIt(e)(t)(w)$ .
- (25) Concessive adjunct: as in (21)  
 $\lambda P \lambda e \lambda t \lambda w$   $In(e, w)$  :  
 $\exists e' [In(e', w) \& ThereArePlentySolutions(e')(t)(w) \& SHOULDNT_{e'}(P)(t)]$ .  
 $P(e)(t)(w)$ .
- (26) The whole sentence (by FA, with (21)/(25) as the function and (24) as the argument):  
 $\lambda e \lambda t \lambda w$   $In(e, w)$  :  
 $\exists e' [In(e', w) \& ThereArePlentySolutions(e')(t)(w) \&$   
 $SHOULDNT_{e'}(QuestionAccompaniesIt)(t)] \&$   
 $\exists e' [In(e', w) \& Q(e')(t)(w) \& SHOULDNT_{e'}(QuestionAccompaniesIt)(t)]$ .  
 $QuestionAccompaniesIt(e)(t)(w)$ .

As proposed above, we assume that the hearer takes the value of  $Q$  to be provided by the ‘despite’ clause, resulting in a single concessive presupposition for the sentence.

In sum, when c-still is part of the derivation as in (26), the sentence comes to have a purely concessive meaning. The resulting lack of a presupposition of duration is effectively the only difference with respect to a version that employs d-still (the one seen in (22)). It is because the interpretation with d-still also expresses concessiveness and because the durative component can come to be derived pragmatically that the bridging examples foment a new interpretation of *ʕadain* as c-still. Since *ʕadain* when interpreted as c-still no longer carries  $\mathcal{T}$  as a presupposition, it is not restricted to modify stati(iz)ed predicates. Because *ʕadain* as c-still itself express  $\mathcal{M}$ , it can also occur on its own in a main clause and express concessiveness without the need of an accompanying concessive clause or phrase. The corpus studies we surveyed in section 2 suggest that it takes time for c-still to develop this independence. In particular, the corpus studies indicate that concessively-read *ʕadain* occurred alongside another concessive marker more often in the past than it does in contemporary corpora (see Tsirkin-Sadan 2019; Rubinstein forthcoming).

We have discussed at length one specific example in Hebrew. Because, however, our analysis relies on general considerations involving reasoning, “infection” or meaning transfer, and matters of presupposition, we think we should also be able to find it in other instances. From this perspective, the parallel we observe in English with *still* fits in well.

#### 4 Lessons about semantic change

In our discussion, ‘still’ is a lexical item undergoing change—it ends up acquiring a second interpretation, c-still, which exists now alongside d-still. In this process  $\mathcal{M}$  is an entailment that originates in a different lexical item in the sentence, namely the overt concessive marker (e.g., ‘despite’, ‘although’). This new bit of meaning can get associated with ‘still’ in the bridging contexts because precisely this kind of context supports the loss of its durative presupposition  $\mathcal{T}$ .

Our semantic analysis of the emergence of a concessive meaning for ‘still’ contrasts with the dominant view in the literature, exemplified in the quote from König & Traugott (1982) we cited earlier, which takes the change to be driven by pragmatic reasoning. The pragmatic approach builds on a conceptual affinity between “continuation” and “concessiveness”, an invited inference that would undergo conventionalization (Traugott & Dasher 2002; Eckardt 2006), but it does not spell out how this would work in detail.

The mechanism our analysis employs fits with the idea that meaning shifts are the result of a compositional re-distribution of meanings, a process which has been likened by Eckardt (2006) to solving an algebraic equation for a “‘missing bit’, ... the hypothetical new meaning  $x$  for the item-under-change” (p. 13). What our proposal adds is an account of how an item can come to have a “missing bit” to begin with; as we saw, in the bridging examples ‘still’ can come to be parsed as lacking  $\mathcal{T}$  as a result of an extra-linguistic entailment. Our analysis further shows how the new value can in fact be provided semantically by material elsewhere the sentence, as  $\mathcal{M}$  is entailed by the ‘despite’ phrase.

Given that  $\mathcal{T}$  and  $\mathcal{M}$  are both entailments (we remain agnostic as to whether they are presuppositions or backgrounded not-at-issue entailments), our proposal also supports the relatively recent idea that only *entailed meanings* are part of semantic change, to the exclusion of pragmatic inferences (Beck & Gergel 2015; Condoravdi & Deo 2014).

Two strands of research have developed the semantic perspective on language change, also known as *diachronic semantics*. The first proposes a *constant entailments* principle (Beck 2012; Beck & Gergel 2015), which states that language change arises in contexts that derive the same propositional content for a sentence under different interpretations of a given lexical item. Constant entailments were appealed to by Beck & Gergel (2015) to explain how the adverb *again* became ambiguous between a repetitive and counterdirectional/restitutive interpretation. According to their analysis, the repetitive interpretation became associated with the adverb when it was parsed in a new syntactic position, keeping constant the truth conditions of the sentence as they were when ‘again’ was counterdirectional (pp. 188 ff.). The second strand of research in diachronic semantics is the *semantic weakening* approach by

Condoravdi & Deo (2014); Deo (2015). This approach develops, within a formal semantic theory, the traditional insight that language change involves bleaching or generalization of meaning (Bréal 1897; Heine, Ulrike & Hünnemeyer 1991; Campbell 2013, among many others). Condoravdi & Deo (2014), in particular, argue that the historical development of the viewpoint aspect marker *-ta* in Indo-Aryan languages shows a trajectory of increasingly general meanings, such that its meaning at one historical stage semantically entails its meaning at a later stage.

Our analysis of the history of ‘still’ relates to both of these approaches. The concessive interpretation contributed by  $\mathcal{M}$  is a constant entailment of the bridging examples; it is constant regardless of whether it is contributed by an overt concessive marker, initially, at a stage in which ‘still’ is understood as d-still, or whether it comes from c-still by “infection” with  $\mathcal{M}$ . The loss of the durative presupposition  $\mathcal{T}$  may be related also to the semantic weakening approach, to the extent that the development of ‘still’ includes a representation in which it is devoid of presuppositional content. We have suggested that such a representation would provide the opportunity for the “infection” of ‘still’ with its new, concessive presupposition  $\mathcal{M}$ , where this infection would be encouraged by the salience of concessiveness and the requirement that ‘still’ be there for a communicative reason.

The test case of ‘still’ offers new insights about the motivation for semantic change and how it might be instigated, at least in some cases. Redundancy of entailed content, we have argued, may prompt part of the meaning of a word to be lost. The semantic gap can then be filled by contagion or infection with a meaning that is present in another part of the sentence.

## 5 One or two entries?

Our account of ‘still’ posits two separate lexical entries to explain d-still and c-still, repeated here:

- (27)  $[[still_d/\text{Sadain}_d P]] = \lambda e \lambda t \lambda w In(e, w):$   
 $\exists t' < t \ \& \ P(e)(t')(w).$   
 $P(e)(t)(w).$
- (28)  $[[still_c/\text{Sadain}_c P]] = \lambda e \lambda t \lambda w In(e, w):$   
 $\exists e' [In(e', w) \ \& \ Q(e')(t)(w) \ \& \ SHOULDNT_{e'}(P)(t)].$   
 $P(e)(t)(w).$

This is motivated by the meanings we observe and also by the historical development, which shows that d-still precedes c-still.

We remain open to the possibility that synchronically there is now just one lexical entry encompassing both d-still and c-still. While a unified analysis has not been easy to discern, Beck (2020) has recently advanced the following scalar proposal:

(29) A unified lexical entry for ‘still’ (Beck 2020: 9)

$$\lambda S.\lambda x^*.\lambda x.\lambda P_{\langle x,t \rangle} : x^* \prec_S X \ \& \ P(x^*).P(x).$$

According to this analysis, ‘still’ is a scalar particle that asserts the predication  $P(x)$  and presupposes that  $P$  holds of an anaphoric element  $x^*$  that precedes the argument  $x$  on a scale  $S$ . The substantive meaning difference between d-still and c-still hinges on a difference in the scales that are employed. D-still results from considering time intervals on a temporal scale:  $P$  holds at time interval  $t$  and it is presupposed that it also holds at an immediately preceding interval  $t^*$ . C-still, which Beck (2020) discusses in less detail, arises from considering worlds on a scale of closeness to an ideal, where the actual world of which  $P$  is asserted is ranked lower than the compared worlds of which  $P$  is presupposed to hold as well.<sup>13</sup> The lexical entry for ‘still’ in (29) promises a unified account of d-still and c-still, as well as additional uses of English *still* along with German *noch* (e.g., spatial and degree marginal uses, which we have not discussed here), which are argued to derive from the flexibility of choosing a scale  $S$  that fits the context.<sup>14</sup>

Appealing though it is to have one unified lexical entry for d-still and c-still, from a historical perspective such an approach obscures the fact that d-still is older than c-still. Nor does it help explain that the genesis of c-still involves bridging examples characterized by a concessive marker elsewhere in the sentence. To understand the historical relationship between the two interpretations of ‘still’ it seems helpful to distinguish two separate entries for d-still and c-still as we have proposed here. Whether synchronically these two entries have been supplanted by a more general entry or whether they continue to coexist is a matter that we believe we can remain agnostic about.

## 6 Conclusion

In this paper, we have studied two meanings of English *still* and Hebrew *ʕadain*, which show striking parallels. On one interpretation, d-still, they function as temporal adverbs with a durative interpretation, while on the other interpretation, c-still, they are understood as concessive adverbs. We have argued that d-still and c-still share the same assertive meaning but differ considerably in their not-at-issue meaning

13 It is not made clear in what ways the compared worlds are similar to the actual world and more generally what determines the nature of the ideal. These details are crucial for evaluating the proposal for c-still’s meaning.

14 Generalization, however, also conveys some risks. It should be noted that *noch* does not have the same distributional properties as ‘still’. While there are areas where the two overlap, *noch* has additive readings, which English *still* lacks. Moreover, *noch* lacks the concessive readings that we saw ‘still’ can clearly have. We hope to address the significant differences between *noch* and *still/ʕadain* in future work.



contributions. Whereas d-still presupposes that the described eventuality has been ongoing (we dubbed this  $\mathcal{T}$ ), c-still presupposes the existence of another eventuality (“the problem”) which leads us to expect that the assertion should not be true ( $\mathcal{M}$ ).

We have proposed an analysis of the development from temporal to concessive ‘still’ that is sensitive to the semantic entailments of sentences in which the concessive first emerges (in historical Hebrew corpora). Our analysis thus supports the diachronic semantics approach to language change, and further sheds light on the dynamics of change as resulting from loss of redundant entailed content. The diachronic semantics approach that we have taken and further developed contrasts with one that relies primarily on pragmatic inferencing. Despite being a dominant approach to language change, its lack of specificity makes it difficult to pin down. In the case of concessives, the idea that the mention of one type of eventuality in connection with another suggests that their co-occurrence is unexpected and gives rise to concessiveness seems difficult to square with the existence of initially-durative expressions that express causal connections. The durative adverb *while* is particularly interesting (and challenging) in this regard because though in English it has developed a concessive use, the etymologically related German *weil* has not; it now primarily functions as a causal expression (‘because’).

We envision a number of ways in which our analysis can be further developed. One is to examine its applicability to the historical development of other expressions that show both a temporal and a concessive meaning, including *yet*, *while*, and parallel expressions in other languages (König 1988). Relatedly, we would like to better understand why German *weil* developed differently.

Another issue that invites further work is the relation between the meaning of ‘still’ and its syntactic position. We hope to explore what we consider a discourse-marker use of ‘still’, exemplified in (30) for both *still* and *ʕadain*. One important characteristic of this use is that the adverb appears in a syntactically high, left-peripheral position that is not integrated with the rest of the sentence (see Rubinstein to appear on this use in contemporary Hebrew):

- (30) [Context: Kim says she is worried about taking days off to go to Sardinia because she needs to finish a book. The speaker encourages her to go by replying:]

*ʕadain*, *sʕi*                                      *le-sardinia!*  
ADAIN go.IMPERATIVE.FSG to-Sardinia

‘Still, go to Sardinia!’

One area to explore is whether d-still and c-still occupy the same syntactic positions and how this relates to their meaning.

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Rubinstein, Herburger

Aynat Rubinstein  
Department of Linguistics and  
Department of Hebrew Language  
The Hebrew University of Jerusalem, Mt. Scopus  
Jerusalem, 9190501 Israel  
[aynat.rubinstein@mail.huji.ac.il](mailto:aynat.rubinstein@mail.huji.ac.il)

Elena Herburger  
Department of Spanish and Portuguese  
Georgetown University  
3700 O Street, NW  
Washington, DC 20057 USA  
[herburge@georgetown.edu](mailto:herburge@georgetown.edu)