Imperatives and Intonation: The Case of the Down-Stepped Level Terminal Contour

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1. Introduction

Imperatives are associated with a wide range of illocutions and can function as commands, requests, offers, advice, well-wishes, etc. (Schmerling 1982). Recent work on imperatives (Portner 2007, Kaufmann 2012, Condoravdi & Lauer 2012, von Fintel & Iatridou 2017, a.o.) aims to reconcile their diverse illocutions with a unified semantics, which consists of a compositionally determined denotation and a sentence type convention for their discourse effect. Some researchers have also argued that intonation plays a key role in deriving distinct interpretations associated with imperatives (Portner 2015, Keough et al. 2016, Oikonomou 2016). However, it remains an open question how exactly intonation interacts with the imperative convention, and how the observed interpretations are derived on the basis of intonation, the effect of imperatives on the context, their content, and contextual conditions.

In this paper, we present a case study that engages with these issues. We introduce a terminal contour that has so far received no attention in the context of imperatives and speech act theory. The contour is traditionally known as the 'calling contour' (Pike 1945) and is transcribable in ToBI as H* !H-L%. We will henceforth refer to it as DLT, short for down-stepped level terminal contour. The name reflects the tune's distinctive intonational profile and acknowledges that its meaning contribution makes it appropriate for uses that go well beyond calling someone. To give a more concrete sense of how the tune sounds, pitch contours of sample DLT imperatives are presented in Figure 1.[1]

Figure 1: Examples of DLT imperatives
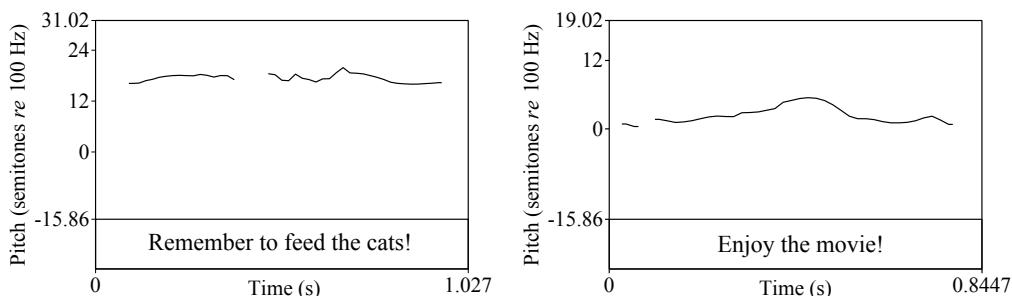
The primary goal of our study is to describe and to adequately capture the felicity patterns and the nuanced meaning contributions of DLT imperatives. Based on intuitive judgments and an experimental study described in Jeong & Condoravdi (2017), we establish that DLT is preferred with imperatives with certain types of illocutions but disallowed with others. We also demonstrate that the felicity of DLT imperatives is further dependent on a particular kind of contextual information that does not make any reference to illocutionary distinctions. Finally, we show that depending on the content and the context, the use of DLT imperatives gives rise to a variety of social and interactional meanings that differ greatly in flavor from each other.

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[1] The utterance corresponding to the first contour was produced by a female speaker and the one corresponding to the second was produced by a male speaker, during a pilot production study. The sound files for each can be found in the following repository: http://semanticsarchive.net/Archive/jhlOGFmY/

Based on these descriptive generalizations, we develop an analysis of DLT imperatives that aims to clarify the respective contributions of DLT intonation, imperatives as a distinct sentence type, their content, and their context of use. In particular, we propose an intonational convention for DLT that commits the speaker to there being no change in her action choices as a result of the utterance. Together with a specific theory of imperatives (Condoravdi & Lauer 2012) that posits a convention regulating the effect of imperative utterances on the context, the DLT convention is shown to be able to capture the observed felicity conditions of DLT imperatives, as well as the nuanced social and interactional meanings associated with them. The analysis is shown to have broader implications about the nature of the relationship between intonation and imperatives.

2. The felicity and interactional meanings of DLT imperatives

DLT is traditionally known as the 'calling contour', reflecting the initial observation that it occurs frequently with utterances used to summon someone (Pike 1945, Abe 1962). An example of such a use is shown in (1).

(1)   Speaker calling out from the kitchen
        Anna! (H* !H-L%)   Dinner's ready! (H* !H-L%)

The tune has subsequently been looked at in connection with many vocative, phrasal, and declarative examples, resulting in more comprehensive analyses about its conditions of use and its potential meaning contributions (Liberman 1975, Leben 1976, Ladd 1978, Pierrehumbert & Hirschberg 1990, Truckenbrodt 2012; see Jeong & Condoravdi 2017 for an overview). However, it has not yet been systematically examined in the context of imperatives and speech act theory.[2]

The starting point of this study is the observation that DLT appears frequently with a particular subset of imperative uses, and that the pairing between DLT and imperatives is subject to systematic restrictions. DLT is felicitous with imperatives that signal particular illocutions, but infelicitous with others. In this section we consider the conditions that lead to felicity or infelicity of DLT with imperatives. For the rest of the paper, we assume that the conventional effect of DLT is associated with the sequence H* !H-L% as a whole, a view espoused in the earlier works on the tune (see also Constant 2012 and Goodhue et al. 2015 for similar approaches to intonational units). We leave open the question of whether our analysis can be recast in a more decompositional framework (Pierrehumbert & Hirschberg 1990, Truckenbrodt 2012), which breaks down the tune and its meaning contribution into more elementary units.

2.1. The apparent illocution dependency

DLT standardly occurs with well-wish uses such as (2a, b), mnemonic advice and request uses such as (2c, d),[3] and certain warning uses such as (2e). In fact, for well-wish uses like (2a), DLT seems to be the most preferred intonation. In contrast, DLT sounds infelicitous with command uses such as (3a), offer uses such as (3b), and non-mnemonic request or advice uses such as (3c, d). Judgments of infelicity are marked with # and likely illocutions are labelled on the right.

(2)   a.   Enjoy your dinner! (H* !H-L%)   [well-wish]
        b.   Have a nice trip! (H* !H-L%)   [well-wish]
        c.   (Speaker dangling the lunchbox from afar; addressee about to leave)
             Don't forget your lunchbox! (H* !H-L%)   [mnemonic advice]
        d.   (Speaker exiting; talking to the house-sitter)
             Don't forget to feed the cats! (H* !H-L%)   [mnemonic request]
        e.   (Speaker walking behind her friend down the basement steps; Ladd 1978)
             Watch out for the broken steps! (H* !H-L%)   [warning]

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[2] Ladd (1978) includes imperatives with the calling contour and highlights the fact that the tune is suitable for uses that function as reminders. However, his discussion misses the potential significance of the imperative sentence type.

[3] 'Mnemonic imperatives' are imperatives containing 'mnemonic verbs', like *remember* and *forget* (Crone 2017).

(3) a. Hand in the assignment by Friday! (#H* !H-L%)   [command]

  b. Take a cookie! (#H* !H-L%)   [offer]

  c. Please help me out! (#H* !H-L%)   [request]

  d. Avoid the highway! (#H* !H-L%)   [advice]

The examples in (2) vs. those in (3) carve out the boundary between imperative illocutions that can be felicitously paired with DLT vs. those that cannot. Crucially, this boundary crosscuts the traditional illocutionary distinctions posited for imperatives. It also does not align with the more general distinction between directive and non-directive uses of imperatives. While mnemonic requests are felicitous with DLT, other directive uses, such as orders and non-mnemonic requests, disallow DLT. This suggests that whatever the effect of DLT is, it does not make a direct reference to illocutionary distinctions. The apparent illocution-dependent felicity patterns of DLT imperatives shown in (2) and (3) will thus have to be derived from a more abstract requirement imposed by the intonation.

2.2. Contextual constraints

DLT imperatives are also subject to further contextual constraints. Even the illocutions that are in principle compatible with DLT can be infelicitous with it depending on the context.[4] The two pairs of identical imperatives in (4) illustrate the role of context. The imperative *Remember to feed the cats!* functions as a mnemonic request in both (4a) and (4b). However, it is felicitous with DLT only in context (4a), in which it is inferred that the speaker will be taking no further action, but infelicitous with DLT in context (4b), in which the speaker follows up with a promise for a further reminder. Likewise, the imperative *Get well soon!* functions as a well-wish in both (4c) and (4d). However, it can felicitously host DLT only in the context of a minor ailment, but not in the context of a serious illness.

(4) a. (Speaker exiting; talking to the house-sitter)
      Remember to feed the cats! (H* !H-L%)   [mnemonic request]

  b. (Speaker giving out instructions to the house-sitter)
      Remember to feed the cats! (#H* !H-L%)   [mnemonic request]
      I'll leave a reminder note.

  c. (Speaker has a minor illness)
      Get well soon! (H* !H-L%)   [well-wish]

  d. (Speaker is seriously ill)
      Get well soon! (#H* !H-L%)   [well-wish]

One may conjecture that contextual aspects such as finality vs. non-finality of the utterance in the conversation (4a vs. 4b), or lightheartedness vs. seriousness (4c vs. 4d), somehow constrain the use of DLT. However, these appear to be neither necessary nor sufficient conditions for the felicity of DLT imperatives. For instance, warnings, such as *Watch out for the broken steps!*, generally do not seem to signal the final phase of the conversation, nor do they necessarily convey lightheartedness; nevertheless, they can host DLT. Therefore, contextual aspects such as finality and lightheartedness are likely to be epiphenomena of more abstract contextual information that determines the felicity of DLT imperatives.

A core contextual element that directly affects the felicity of DLT imperatives and can unify the diverse contextual constraints seen above is the extent of expected speaker control and future involvement in ensuring the fulfillment of the imperative. Our hypothesis is that DLT will be felicitous only when the context is such that the speaker has a reason to publicly signal that she does not have further action-relevant control over the realization of the content of the imperative. We take the content of the imperative to be the proposition corresponding to its fulfillment conditions. For instance, the content of (4a, b) is the proposition that the addressee remembers to feed the cats. According to our hypothesis, (4a) is compatible with DLT since the context is consistent with the speaker not doing anything further to help the addressee fulfill the content of the imperative (as she is leaving). In contrast, (4b) is incompatible with DLT since the speaker explicitly promises to do something further to help the addressee remember.

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[4] Ladd (1978) already observed the context-dependent felicity of the calling contour. However, his characterization of the contextual conditions is different from ours. For a more detailed comparison, see Jeong & Condoravdi (2017).

One crucial aspect of our hypothesis is that felicity is *not* taken to be based just on the objective state of speaker control in a given context. Rather, it hinges on inferences that interlocutors are likely to draw when reasoning about the speaker's intention in choosing to highlight her lack of future control. This is why (4d) is expected to be infelicitous with DLT as opposed to (4c). Although in both contexts the speaker is likely to be understood as having no further control over the addressee's health outcome, the utterance could well have a demoralizing effect if this information is highlighted when the addressee has a serious illness, which is why a speaker would not choose to convey it (see section 3.2 for more details).

2.3. Interactional and social effects of DLT

In addition to the felicity patterns of DLT imperatives, their social and interactional effects merit a closer look, as they seem to differ greatly in flavor depending on the context and illocution. For instance, DLT + well-wish uses (e.g., *Enjoy your dinner!*) often seem to communicate friendly and casual concern. In comparison, DLT + warning uses (e.g., *Watch out for the broken steps!*) seem to imply lack of urgency, or at least trust in the addressee to act accordingly without further help. Some of these nuances are hard to spell out and appear to depend heavily on the content of the imperative and the context.

Declarative sentences with DLT often seem to generate interactional and social effects that diverge significantly from those generated by DLT imperatives. They often function as admonitions, with a distinct flavor of off-handedness and 'I'm washing my hands off' type of inference, as seen in (5).

(5)   You can try, but he's not going to hear you! (H* !H-L%)

DLT imperatives, on the other hand, often seem to lack inferences about willful off-handedness and sound much more friendly. The challenge is to provide a unified account of DLT that can derive all of these apparently diverse interactional and social inferences on the basis of the difference in content, context, and sentence type.

2.4. Experimental support

The observations and hypothesis presented above were systematically tested and corroborated via a perception experiment, which focused particularly on determining the felicity patterns of DLT imperatives in a controlled way. In the experiment, participants read a series of contexts which varied systematically in the implied degree of expected speaker control and future involvement. For each context, they chose the more likely utterance to occur in that context among two response options: an imperative sentence with DLT intonation (H* !H-L%) vs. the same sentence with non-DLT intonation (L* L-L% or H* L-L%), both prosodically manipulated from the same base recording.

The experimental results corroborated the generalizations in section 2.1. Imperatives with content biased towards well-wish and mnemonic request/advice illocutions predominantly favored DLT, whereas imperatives with content biased towards offer, advice, or command illocutions strongly disfavored DLT. It also corroborated the hypothesis in section 2.2: contexts favoring no expected speaker involvement were significantly more likely to favor DLT, other things being equal. Finally, participants' comments suggested that they often inferred social effects similar to those outlined in section 2.3. For more details, see Jeong & Condoravdi (2017).

3. Analyzing DLT imperatives: Two conventions

With the core empirical generalizations in place, we present our analysis in this section. A central question regarding the conventional contribution of DLT imperatives is whether it should be characterized at the level of 'DLT + imperative' unit as a whole, or whether the imperative and DLT can be analyzed independently of each other. We pursue the latter approach, as it is more parsimonious than the more holistic alternative. In section 4 we bring up some considerations that point to its empirical advantages.

If the sentence type and the intonation each have a separate effect, it is worth considering whether an existing analysis of imperatives and/or an existing analysis of DLT can be straightforwardly adapted to explain our data. With respect to the contribution of DLT intonation (i.e., the 'calling contour'), existing

analyses draw on notions such as 'calling' (Pike 1945), 'stylization' and 'familiar, ritualized practice' (Ladd 1978), 'salience' and 'information mutually inferable by the interlocutors' (Pierrehumbert & Hirschberg 1990). As discussed in Jeong & Condoravdi (2017), none of these notions capture the patterns of DLT imperatives we have seen, suggesting that a new analysis of DLT is needed. We propose such an analysis in section 3.2.

For the contribution of imperatives, we adopt the analysis of imperatives as creating preferential commitments by Condoravdi & Lauer (2012). One reason for this is that the conventional force that the analysis assigns to imperatives is both general enough to account for their functional heterogeneity and specific enough to derive the observed illocutionary force of particular uses. Another reason is that it proposes a commitment-based theory of conventional force that links commitment to effects on future developments of the world, which we consider to have a bearing on the contribution of DLT.

3.1. The imperative convention

Condoravdi & Lauer (2012) discuss two options for how imperatives give rise to preferential commitments. On the option that we adopt here, imperatives have a minimal denotation that corresponds to their content and they are associated with the convention of use in (6).

(6)   **Imperative convention**: If a speaker utters an imperative with content p, she thereby publicly commits herself to acting as though p is one of her highest ranked effective preferences.

According to (6), uttering (3a), *Hand in the assignment by Friday!*, for instance, commits the speaker to an effective preference for the addressee handing in the assignment by Friday. Effective preferences are, roughly, ranked preferences which guide an agent's actions and which emerge from resolving inconsistencies among the agent's many (potentially conflicting) desires. (See Condoravdi & Lauer 2016 for detailed discussion.)

Different illocutions arise from distinct contextual conditions interacting with the imperative convention. (3a), for instance, will be construed as an order in a context where the speaker has authority over the addressee, who is then obligated to make the content of the imperative true. In other directive uses, the speaker commits to a preference as a way of influencing the addressee's preferences and subsequent actions but without a concomitant obligation. Requests arise when the content of the imperative is assumed to be beneficial to the speaker and consistent with the addressee's preferences, advice when the content is assumed to be in the addressee's interests, warnings when the negation of the content is assumed to be detrimental to the addressee.

Condoravdi & Lauer (2012) propose that in addition to the core convention in (6), imperatives come with a second conventional component, which can be characterized as in (7).

(7)   **Minimal speaker involvement**: By virtue of uttering an imperative with content p, the speaker makes public an effective preference for p to be realized without her involvement.

Thus, while the addressee handing in the assignment by Friday is the speaker's preferential commitment in (3a), the speaker also publicizes an effective preference for this to happen without her involvement. Still, the preferential commitment for the addressee handing in the assignment by Friday (that the speaker incurs via (6)) is one that will have downstream repercussions on the speaker's action choices, for instance, if the addressee fails to make the imperative content true.

3.2. The DLT convention

The analysis of DLT should work in tandem with the imperative convention in (6) to derive the interpretations and felicity patterns associated with DLT imperatives. Refining the idea sketched in section 2.2, we propose that DLT is only compatible with imperative utterances which, given the context and the content, give rise to preferential commitments that are implied to not change the speaker's action choices. In other words, for DLT to be compatible with an imperative utterance, the context and the content have to be such that the action choices determined by the speaker's preferential commitment states before and after the utterance can be inferred to be the same. One type of case satisfying this condition is when the realization of the content is not under any agent's control, as in wish uses. Other

cases will depend on specific contextual assumptions and the commitment state of the speaker just before the utterance. We take DLT to be associated with a context-indexing convention that signals such an understanding of the context on the part of the speaker. This single convention will be shown to be able to predict not only the context-dependent felicity of DLT imperatives, but also their apparent illocution-dependent felicity, as well as their varying social effects.

Following Belnap (1991), the set of action choices associated with an agent can be conceptualized as a partition of the set of historical alternatives relative to a given world and time. We assume that an agent's commitment state C determines the set of the agent's action choices $\mathcal{A}_C$, and that a commitment state consists of the doxastic and preferential commitments incurred by an agent up to a given point in the discourse (Condoravdi & Lauer 2012).

Supposing u is an utterance with a DLT contour, C is the speaker's commitment state before u, and $C[u]$ is the commitment state that results from u, the DLT convention can be formulated as in (8).

(8) **DLT convention**: If a speaker utters an expression u with DLT, she thereby commits herself to $\mathcal{A}_C = \mathcal{A}_{C[u]}$.

In general, interlocutors commonly assume that an utterance u, by virtue of updating the speaker's commitment state, changes the speaker's subsequent action choices. DLT can be understood as signaling that the context is such that the new commitment arising from the utterance did not have an effect on the speaker's action choices. For instance, if a speaker utters (2a), *Enjoy your dinner!*, with DLT, the speaker is thereby committed to her set of action choices having remained the same, although the imperative sentence type has just resulted in a new preferential commitment. Such an understanding is compatible with the contextual preconditions for wish uses of imperatives, which are characterized by the speaker and the addressee's lack of control in realizing the content.

The effect of DLT might superficially resemble the minimal speaker involvement meaning component in (7), which is present in all uses of imperatives (Condoravdi & Lauer 2012). One may thus wonder why a separate DLT convention exists and what differentiates it from (7). The latter does not preclude speaker action but rather implies that it is dispreferred. The former, on the other hand, marks that the context, the speaker's current commitment state, and the content of the utterance are such that updating the commitment state does not change the speaker's action choices.

Let us now examine more closely if the analysis can successfully predict the descriptive generalizations we established in section 2.

3.3. Contextual constraints

Our account can capture the context-sensitive uses of DLT outlined in section 2.2. The DLT convention commits the speaker to there being no change in her action choices as a result of the new commitment incurred by the utterance. Making such a commitment can only be a reasonable move when it is supported by contextual assumptions. Therefore, imperatives with the same illocution and content may either allow or disallow hosting DLT, depending on whether the context is compatible with what is signaled by DLT. For instance, a mnemonic imperative like *Remember to feed the cats!* is predicted to be generally compatible with DLT, as long as the speaker takes no further action to aid the addressee's memory. In contrast, in contexts like (4b), what DLT signals is incompatible with the speaker's subsequent commitment to aiding the addressee's memory with a reminder note, hence the infelicity. Moreover, the speaker should have a motivation to mark this property of the context. As noted in the case of a minor vs. serious illness (4c vs. 4d), what really matters is whether it would be useful or appropriate for the speaker to highlight this particular contextual understanding.

3.4. Illocution dependence

Our analysis can also derive the illocution-dependent felicity patterns of DLT imperatives noted in section 2.1, without having to stipulate which illocutions can be paired with DLT. First, the DLT convention predicts that well-wishes and mnemonic requests/advice would be the most prototypical speech acts associated with DLT. Well-wishes are standardly construed to be less up to individual action choices but more up to circumstances outside the interlocutors' control. Mnemonic requests and advice

are standardly uttered in contexts in which they serve as reminders. Such contexts are generally ones in which the speaker has already made the relevant commitment, and hence the update in her action choices dependent on this commitment has already happened. In either one of these types of uses speakers can choose to highlight such a contextual understanding, motivated by a variety of social reasons.

Second, the DLT convention also predicts that illocutions such as advice, requests, offers and orders are generally infelicitous with DLT. This is because speaker action is standardly expected with such illocutions. For instance, for offer uses such as (3b), *Take a cookie!*, the speaker is standardly expected to accommodate an addressee taking up the offer via future actions (e.g., presenting a plate of cookies). In addition, speakers with the intention of signaling these illocutions generally have reasons not to draw attention to their lack of future involvement, even when the context is characterized by such a property.

For request uses, the speaker is expected to at least *act as though* she can do something further to facilitate the realization of her goal. The situation is similar for advice uses, where the speaker is expected to give out additional instructions, if requested, to facilitate the realization of the addressee's goal. Speakers in advice contexts are generally assumed to be more knowledgeable than the addressees, which implies that the realization of the content of the advice can be facilitated to some extent by their expertise. Therefore, they have a reason to *not* publicly signal a lack of update in their action choices, as this would generate inferences about the speaker actively wanting to avoid further assistance even though she is in a position to give it.

For command uses, the speaker again has a reason to not actively highlight any lack of update in action choices, as that may lead to unwanted inferences about lack of speaker authority. The speaker may want to at least 'on the record' leave the door open for sanctioning the addressee in the future, even when her underlying, private intention is not to bother further and to not follow up on her order, or even when she has full confidence that the addressee will fulfill the imperative. This line of reasoning explains why military orders such as (9b), *Soldiers, march!*, are also infelicitous with DLT, although they are characteristically used in contexts in which the speaker need not do anything further to make the soldiers march.

Finally, even illocutions such as commands, offers, etc. can felicitously host DLT when they function as reminders. Imperatives with any type of content can be used as reminders if they evoke an earlier utterance with the same force. For instance, an imperative like *Hand in the assignment by Friday!* would function as a reminder order if an instructor issues it again at the end of the class after having already issued it during the class. DLT is felicitous in such a context. Our analysis can naturally explain why this would be the case. As with mnemonic imperatives, since the relevant update to the speaker's action choices in connection to the command (and the commitment it induces) already took place with the first utterance, there may well be no further update upon repeating it. Thus, the speaker may explicitly signal this to emphasize that her latter utterance serves as a reminder.

To recapitulate, while on the surface DLT imperatives seem compatible with certain illocutions and not with others, this is *not* because illocutions are directly allowed or proscribed by DLT imperatives. Rather, it is because DLT signals a certain contextual understanding that is compatible with the contextual preconditions for only certain types of illocutions but not for others.

3.5. Social meanings

Our analysis can also derive the range of observed social and interactional meanings of DLT utterances. There are various reasons and motivations as to why the speaker may want to publicly signal a lack of update in her action choices. Hence, listeners may draw a variety of inferences about the speaker's motivations depending on the content, context, sentence type, etc. This leads one to expect differences in the flavor of DLT across different combinations of these elements.

For instance, we noted that DLT combined with a well-wish imperative often conveys positive interactional meanings such as friendly concern and politeness. Well-wishes arise when the context is understood to involve a lack of both speaker and addressee control for the realization of the imperative content. In the context of a well-wish then, conveying (via DLT) that the utterance resulted in no change in one's action choices makes clear the speaker's understanding that she is on an equal footing with the addressee; when it comes to the realization of the well-wish, she also does not have control over it

and thus won't presume that she does. Thus, it ends up signaling non-presumptuousness and friendly concern, promoting a mutual understanding of a wish outside the interlocutors' control.

We also noted that warning uses of imperatives such as (2e), *Watch out for the broken steps!*, generate inferences about the lack of urgency in the warning. In fact, as Ladd (1978) first observed, DLT is incompatible with warnings in genuinely urgent situations (e.g., *Fire!* #H* !H-L%). Unlike well-wishes, warnings often occur in contexts in which the speaker can actually do something further to ensure that the addressee properly heeds the warning. Therefore, DLT is predicted to be felicitous only when the speaker wants to actively signal that the nature of the danger is such that the addressee can fend for himself/herself without any additional help from the speaker. Publicly signaling such an understanding is expected to be felicitous only when the addressee is not in any imminent danger, and can actually take care of herself.

Finally, we noted that DLT with declaratives such as (5), *You can try! But he's not going to hear you!*, frequently function as admonitions, often with the flavor of off-handedness. The DLT convention itself does not specify *why* the speaker construes the context to be such that her action choices do not change by virtue of the utterance; the precise reason for this has to be reconstructed from the context. It therefore naturally predicts that DLT will be productively used when the reason stems from the speaker's desire to signal that she will not be involved further in the addressee's affairs (although she could be, if she wanted to; in this sense the context again differs fundamentally from well-wishes). This may in turn be because the speaker deems the addressee to be too stubborn (i.e., she thinks that more guidance or help will not influence the addressee's decision and is thus futile), or because the speaker simply does not want to bother. These inferences, which contrast greatly with those associated with DLT well-wishes, naturally result in generating the flavor of off-handedness.

There is a lot more to be said about the precise contribution of the declarative sentence type in these examples, but space limitations prevent us from pursuing it further. See also Jeong & Condoravdi (2017) for an extension of our analysis to vocative and other phrasal utterances.

4. Implications for theories of imperatives and intonation

Our analysis of DLT imperatives has implications for the broader issue of the relationship between intonation and the imperative sentence type. There has been relatively little work on imperatives and intonation, especially compared to declaratives and intonation. Existing work on this issue can be categorized into two main approaches. The first views intonation as having a direct impact on the formulation of the imperative convention itself. The second approach implicates intonation in the activation of a more independent process that ends up generating particular illocutionary inferences. These diverging conceptualizations stem partly from the different meanings assumed for imperatives.

Portner's (2015) analysis is an example of the first approach. Maintaining the core idea behind his earlier analysis in Portner (2007), he claims that part of the conventional effect of imperatives is to propose an interlocutor's (speaker's or addressee's) commitment to the content of the imperative as a priority. This effect, however, is argued to be fine-tuned further, depending on the intonation accompanying the imperative. Portner observes that intonation affects the interpretation of imperatives. He distinguishes between *strong* imperatives (roughly, *must* readings), such as commands and requests, and *weak* imperatives (roughly, *may* readings), such as offers and invitations. He argues that weak imperatives are signaled by the rising tune (marked with ⇑), while strong imperatives are signaled by the falling tune (marked with ⇓). He takes this as an indication that the two are associated with distinct conventions: rising imperatives propose to commit the *addressee*, whereas falling imperatives propose to commit the *speaker* to treating the imperative's content as a priority. The approach is analogous to Gunlogson's (2003) analysis of rising vs. falling declaratives.

Keough et al. (2016) follow Portner's (2015) main analysis, but attribute different intonations to strong and weak imperatives. Based on experimental evidence, instead of falling vs. rising tunes, they associate L* L-L% with the former, and H* L-L% with the latter. Abstracting away from this difference, on both analyses, intonation has the function of fine-tuning, or fully specifying, the underspecified imperative sentence type convention, generating two distinct conventional effects.

(9)   a.   Have a cookie!   ⇑ (Portner 2015) / H* L-L% (Keough et al. 2016)   [weak (offer)]

        b.   Soldiers, march!   ⇓ (Portner 2015) / L* L-L% (Keough et al. 2016) [strong (command)]

Oikonomou's (2016) account is an example of the second approach. She follows Kaufmann (2012) in taking the denotation of imperatives to involve a modal operator with existential force. While Kaufmann (2012) generally takes this possibility reading to be strengthened to a necessity reading in the majority of imperative uses, Oikonomou (2016) brings intonation into the picture and has it play a role in deriving the strengthened reading. She aims to capture Portner's strong vs. weak distinction, especially the one between command/request vs. permission uses, in the following way: weak readings are possibility readings, reflecting the semantics of the imperative operator, while strong readings are necessity readings, arising as a result of strengthening via a scalar implicature.

(10)   a.   (Alright...) Drive this Lamborgini!   [weak (permission)]
                          H*   L-L%   (Oikonomou 2016)

        b.   Drive this Lamborgini!   [strong (command)]
                        H*   H* L-L%   (Oikonomou 2016)

Crucially, accent placement, which results in distinct intonation patterns, determines the focus alternatives that either give rise to or block this scalar implicature. Broad focus, manifested as the placement of the nuclear pitch accent H* on 'Lamborgini' in (10b), generates an alternative that results in the implicature. Deaccenting, manifested as the absence of the pitch accent H* on 'Lamborgini' in (10a), generates a different kind of alternative and no implicature arises. Consequently, broad focus ultimately gives rise to strengthening of the meaning of the imperative, while there is no strengthening with deaccenting and the perceived reading corresponds to the basic meaning of the imperative. Oikonomou then provides evidence that strong imperatives are indeed typically produced with the former accent pattern, whereas at least a subset of weak imperatives (namely, permission uses) are produced with the latter accent pattern. In sum, on this analysis, intonation operates independently from the meaning of imperatives. Based on the kind of alternatives it generates, its effect is to determine the presence vs. absence of an implicature, which in turn affects the overall interpretation of the imperative utterance.

To recapitulate, the works discussed above have focused on deriving the strong vs. weak imperative distinction via intonational differences. Although our analysis of DLT imperatives deals with a fundamentally different type of illocutionary division, we believe it bears on the issues brought up by these works. In our analysis, the imperative convention does not make any reference to intonation. In a parallel fashion, the intonational (DLT) convention does not make any reference to a particular sentence type.[5] The convention associated with the sentence type and the one associated with the intonation are independent from each other. DLT has the same conventional effect with any sentence type it combines with, but it leads to different inferences depending on the type and conventional effect of its host. In short, the role of intonation in our analysis is context-indexing rather than convention-determining.

Although more systematic investigation is needed, we suggest that the strong vs. weak distinction may be derived in a similar fashion, by positing an independent, context-indexing intonational convention, rather than incorporating intonation into the sentence type convention. (Oikonomou (2016) can be considered as an example of such an approach; minimally, information structure is contextual information.) Our data provide indirect evidence for this in the following way. If a core parameter of the imperative convention such as the presence of speaker commitment were determined by intonation such as a falling contour (Portner 2015), then one would expect a consistent and necessary correlation between the two. However, the actual pattern is quite jagged and optional, such that DLT can combine with some strong imperatives but not others, and strong imperatives can host intonations other than a falling contour, such as DLT. See also Oikonomou (2016:sec. 3.6) for discussion of how the rising contour is neither necessary nor sufficient for the weak reading of imperatives to arise.

We conclude, therefore, that the effects of intonation on imperatives can be, and perhaps even need to be, captured without subsuming the former under the convention for the latter.

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[5] Although we have not directly argued that DLT does not affect the denotation of the imperative, we take this to be a reasonable assumption.

5. Conclusion

In this paper, we examined an understudied pairing between a sentence type and a terminal contour, namely, DLT imperatives. We first noted the conditions affecting the felicity of DLT imperatives and established a range of nuanced social meanings that can be associated with them. We then proposed an analysis that can account for these empirical patterns, by adopting an existing theory of imperatives (Condoravdi & Lauer 2012) and by positing an independent intonational convention that indexes certain aspect of the context. The analysis has implications for the broader issue of the relationship between intonation and the imperative sentence type, as it demonstrates that the intonational convention and the sentence type convention can be formulated independently of each other, and can thus operate autonomously. When they apply cumulatively, as in the case of DLT imperatives, the combined effects of the two conventions have interesting repercussions for the felicity patterns of the pair, as well as its interpretations.

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