10

On the optimal interpretation of *yes* and *no* in Dutch

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10.1 Introduction

Yes and *no* are two of the most frequently uttered words in conversation. Their meanings might appear straightforward, but an examination of everyday discourse will reveal examples such as the ones given in (1) and (2).

(1)   You ran a six minute mile? **Yeah** right.

(2)   A: You have a big stain on your shirt.
       B: **No**...Really?!

The basic meaning of *yes* (or *yeah*) is to give an affirmative answer to a polar question. More generally, it may be also used to express agreement with the interlocutor. In (1), however, *yeah* is used to indicate disbelief on the part of the speaker about the truthfulness of the other person's statement. Similarly, *no* is prototypically used to give a negative answer to a polar question, or more generally to express denial or disagreement, but the use of *no* by speaker B in (2) reveals that speaker A is stating the obvious and that A's proposition is therefore redundant. In both (1) and (2) *yeah* and *no* are uttered with a marked intonation (sarcasm), but this is not necessary for *yes* or *no* to deviate from their basic function.

Much like in English, Dutch *ja* 'yes/yeah' and *nee* 'no' do not always appear to carry the basic meanings attributed to them in isolation, which are identical to the basic meanings of English *yes* and *no*.

(3)   A: Ik   heb   een   nieuwe   auto.
        I   have a   new   car
        'I have a new car.'

B: **Ja?**
yeah
'Oh really?'

(4) A: Mijn   broertje   heeft   gisteren   zijn   been   gebroken.
my   little.brother   has   yesterday   his   leg   broken
'My little brother broke his leg yesterday.'

B: **Nee!**
no
'Are you serious?'

(5) A: Ik   vind   dat   echt   niet   leuk.
I   find   that   really   not   fun
'I really don't like that.'

B: **Nee**.
No
'Yeah.' ('No')

In (3), *ja* expresses something along the lines of "Oh really?" There is no question to answer and nothing to agree with. Instead, *ja* is uttered as a question to indicate mild surprise and to request more information. *Nee* in (4) is used to display surprise and unhappiness over the announcement made by the other speaker. *Nee* in (5) is not meant to object to the statement uttered by speaker A. Instead, it is uttered by speaker B to express agreement with speaker A's statement, or merely to acknowledge the fact that the statement was made. Neither *ja* in (3) nor *nee* in (4) and (5) correspond to the basic meanings of *ja* or *nee*, which are identical to the basic meanings of *yes* and *no* in English.

If *ja* and *nee* are not always used to express their basic meaning, how are they used? Can all meanings be related to a single core use or meaning? Are *ja* and *nee* lexical or grammatical items, or perhaps both? And if the meaning of *ja* and *nee* can vary, how do hearers arrive at an appropriate interpretation of *ja* or *nee*?

This chapter explores the use of the discourse markers *ja* and *nee* in Dutch by means of a corpus search in the Spoken Dutch Corpus. Since *ja* and *nee* appear to receive many different interpretations, we used Optimality Theory (OT) to model the interpretation of *ja* and *nee* by hearers (cf. Hendriks and de Hoop 2001; Hendriks et al. 2010; Zwarts 2004; Hogeweg 2009b). Because the relation between form and meaning is not static, but rather variable, particularly for polysemous words such as *ja* and *nee*, hearers have to arrive at an appropriate meaning for a specific form through a process of optimization. OT visualizes the process of evaluation of possible interpretations by means of a set of constraints. The optimal candidate, and thus the appropriate interpretation, is the candidate that satisfies the set of constraints best.

Bidirectional OT holds that hearers do not only take into account their own perspective, but also the speaker's perspective, and vice versa (Blutner 2000; Blutner,

de Hoop, and Hendriks 2006; Hendriks et al. 2010). Bidirectional optimization can lead to the formulation of form–meaning pairs. A form–meaning pair is optimal when there is no better pair with a better form or a better meaning. We will account for the way in which hearers respond to positively or negatively framed utterances in Dutch in a bidirectional OT model and briefly compare it to the English answering paradigm to demonstrate that the OT model can also be extended to and account for answering paradigms found in other languages.

Section 10.2 presents our corpus study and proposes a categorization of the different uses of *ja* and *nee* in spoken Dutch. An Optimality Theory account of the way in which *ja* and *nee* are used in Dutch and how hearers arrive at the optimal interpretation of *ja* or *nee* in context will be presented in section 10.3. Finally, section 10.4 will present a bidirectional OT account of the Dutch answering paradigm and compare it to the way in which speakers of English respond to positively or negatively framed utterances.

10.2 Corpus study of *ja* and *nee* in spoken Dutch

10.2.1 *Methodology*

For our corpus study of *ja* and *nee* in Dutch, we have used the *Corpus Gesproken Nederlands* (Spoken Dutch Corpus, CGN) that consists of roughly 9 million words of spoken Dutch, all of which had been orthographically transcribed. It contains fifteen different types of data, ranging from spontaneous dialogue to television broadcasts to recited texts. Although the corpus contains both data from the Netherlands and Flanders, this study only uses speech from speakers from the Netherlands.

The conversational data of the CGN was most relevant to this study, as *yes* and *no* occur much more often in dialogue than in monologue or writing (cf. Tottie 1991). The data used in this study was taken from the telephone recordings of the CGN (adding up to 156 hours of recorded dialogue, each separate session being roughly ten minutes). Because speakers are (usually) unable to see each other during telephone conversations, their conversations do not include informative visual cues such as for instance nodding, head shaking, eye contact, or facial expressions. In telephone conversations, speakers have to use sound in order to reveal their (dis)agreement and emotions and to indicate that they are still paying attention to what the other person is saying. This can, for instance, be done by making sounds like "hm mm" or by audible breathing, but also by saying *yes* or *no*. It can therefore be assumed that telephone data includes a bigger range of possible uses of *ja* and *nee* than face-to-face conversational data, or at least that certain uses of *ja* and *nee* (for instance the "I'm listening" use of *ja*) will be more frequent in telephone conversations than in face-to-face conversations.

To eliminate the problems the search engine had because of the high frequency of *nee* and especially *ja*, two sets of fifty sessions were randomly selected from the

telephone data. The orthographic transcriptions of each subset of sessions were then searched for instances of the words *ja* and *nee*. In roughly 500 minutes of dialogue *ja* was uttered 6257 times and *nee* 1087 times. In order to arrive at a subcorpus of 100 utterances of both *ja* and *nee*, every 62nd *ja* and 10th *nee* were selected. The 100 utterances of, respectively, *ja* and *nee* were closely examined, after which they were grouped according to the way in which they were used. To later expand the subcorpus with an additional 100 *ja*s and 100 *nee*s, another 1023 utterances of *ja*, and 596 utterances of *nee* were reduced to 100 each by selecting every 10th instance of *ja* and every 6th instance of *nee*. The additional data was categorized according to the different uses of *ja* and *nee* identified on the basis of the annotation of the first 100 *ja*s and *nee*s.

10.2.2 Results

An overview of the categories of *ja* and *nee* that were established and the amount of times each use was found in the subcorpus can be found in Tables 10.1 and 10.2.[1]

TABLE 10.1 **The different uses of *ja* and the number of occurrences of each use in the subcorpus**

Uses of *ja*	Number of occurrences
Affirmative answer to a question (closed or leading)	23
Affirmative reaction to a statement	77
"Continuer"	28
To indicate topic shift	12
To conclude a topic	5
To introduce a direct quote	4
To underline or emphasize own statement / turn	17
To express emotion	7
Thinking / contemplative *ja*	20
Total	193

For the sake of completeness, prohibitive *nee* has been included, even though no examples of this use of *nee* were found in the data. Prohibitive *nee* (e.g., when a five-year-old kid starts climbing a tree and his mother shouts *Johnny, nee!* 'Johnny no!') can certainly be found in Dutch. However, telephone conversations between two adults are a context in which this type of response to an action is expected to occur only rarely.

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[1] It is expected that the relative frequency of continuer *ja* and *nee* is higher in telephone conversations than in face-to-face interaction.

TABLE 10.2 **The different uses of *nee* and the number of occurrences of each use in the subcorpus**

Uses of *nee*	Number of occurrences
Negative answer to a question (closed)	31
Negative reaction to a statement	19
Preface to self-correct	13
To return to a topic	20
To express emotion	5
To express a prohibitive	0
Affirmative answer to a question containing a negation (leading)	11
Affirmative reaction to a statement containing a negation	64
Continuer when the preceding discourse contains a negation	19
To underline or emphasize own statement / turn when it contained a negation	7
Non-negation *nee* without a negation in the preceding discourse	5
Total	194

10.2.3 *Discussion*

10.2.3.1 *The uses of* ja   The function that first comes to mind when people are asked about the interpretation of *ja* is that it can be used as an affirmative answer to a polar question. The question can either be neutral or leading, as illustrated by (6) and (7), respectively.[2]

(6)   A: En uh   volgende week   heb   ik   nog een   afspraak
           and   next   week   have I   an-other   appointment
           met   dr   gemaakt.
           with   her   made
           'And I made another appointment with her for next week.'

      B: Met   Henriët?
         with   Henriët
         'With Henriët?'

      A: **Ja.**
         'Yeah.'

(7)   A: Morgen   moet je   toch   werken   zeker?
         tomorrow   must you   PART   work   PART
         'Tomorrow you have to work, right?'

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[2] All examples in this section and the following are taken from the Spoken Dutch Corpus. To make the examples easier to read, interpunction was added and hesitations such as *uh* and unintended repetitions are omitted. Dutch uses many discourse particles that are hard to translate (see, for example, van Bergen et al. 2011; Hogeweg 2009b). They are abbreviated as PART (= particle) in the glosses. Square brackets indicate that there is overlap in turns.

B: **Ja.**
yeah
'Yeah.'

In both (6) and (7) there is only a small selection of possible answers to the first speaker's question: affirmative, in which case *ja* is either explicitly stated or implied in a full sentence (e.g., "(yes) if I want to be off on Friday"), negative, in which case *nee* is either explicitly stated or implied in a full sentence, or a more "neutral" answer along the lines of "maybe," or "I don't know." When answering affirmatively, it is possible for *ja* to be the entire answer, as in (6) and (7), or to be followed by a statement underlining or slightly modifying *ja*. The leading question in (7) is marked by a sentence-final particle *zeker* 'right' indicating that the speaker expects the answer to be *yes*. The communicative function of the particle is thus to solicit agreement and therefore B's answer *ja* is not just an affirmative answer. It also expresses agreement with the speaker's statement that only at the end was turned into a question by adding the particle (cf. Enfield et al. 2012).

Even though *ja* as an answer to a question is the most prototypical use, it occurs with a lower frequency than *ja* in response to a statement. The difference between giving an affirmative answer *ja* to a statement-as-a-question as in (7) and giving an affirmative reaction *ja* to a statement-as-a-statement as in (8) is only small (cf. Drummond and Hopper 1993) and it is the preceding context (a question or a statement) that makes the difference in categorization. The meaning of *ja* itself in these two cases appears to be the same.

(8) A: Ja   en   dan   kun   je   in Oxford   mooi 't
       yeah   and   then   can   you   in Oxford   nice the
       een   en   ander   bekijken en   bezoeken.
       one   and   other   look.at   and   visit
       'Yeah and when you are in Oxford you can visit some places.'

     B: **Ja.**
       yeah
       'Yeah.'

Both answer-*ja* and reaction-*ja* have "late" varieties, as it is always possible to respond to something that occurred earlier in the discourse, rather than in the immediately preceding turn. In "late" answers or reactions, it is no longer possible for *ja* to make up the entire turn. Additional information is then needed to communicate what exactly it is that *ja* refers to.

When *ja* is part of a longer statement, that statement can merely elaborate on *ja*, but also intensify or weaken its meaning. In (9), for example, speaker B's answer to A's suggestion starts out affirmatively with repeating *ja*. The rest of the turn, however, weakens the agreement.

(9) A: Maar   dat   ging   dus   niet   helemaal   goed   met   de
        but   that   went   so   not   totally   well   with   the
        laatste   trein,   dus   je   moet   wel   even   kijken   of   ze
        last   train   so   you   must   PART   PART   look   if   they
        ook   werkzaamheden   hebben.
        also   construction   have
        'But it did not completely work out with the last train, so you really should
        check if there is any construction going on.'

    B: **Ja.   Ja.**   Nou,   ik   kijk   wel   even.   Anders   gaan
        yes   yes   well   I   look   PART   PART   otherwise   go
        we   met   de   auto.
        we   with   the   car
        'Yeah. Yeah. Well, I'll see. Otherwise we will just go by car.'

When it comes to *ja* or *yeah* following an utterance, a distinction can be made
between agreement tokens, in which case a response expresses agreement with
the preceding utterance, and acknowledgment tokens, which can be used by
speakers to signal that they listened to the preceding context without automat-
ically agreeing with its contents (cf. Jefferson 1985; Drummond and Hopper
1993). Example (9) demonstrates that *ja* does not necessarily signal agreement,
since the rest of speaker B's response indicates that she does not completely agree
with speaker A. It can be hard to determine whether *ja* is used as an indication of
agreement, or if it merely acknowledges the other speaker's statement, which is
why we have chosen to collapse the two uses under the single category of
"responding affirmatively."

    That *ja* can indicate both agreement with and acknowledgment of the preceding
discourse is also illustrated by the use of *ja* as a "continuer." When another person
is speaking, listeners want to indicate that they are still listening, paying attention,
and understand what is being said. One way of doing so is by saying *ja*. This
continuer use of *ja* often overlaps with the other speaker's turn. As Drummond
and Hopper (1993) propose, continuers are used to encourage the other speaker to
continue talking. This use of *ja* should therefore be seen as predominantly acknow-
ledging the other speaker's turn, although it is also used when the listener is
agreeing with what is being said. However, since there is usually no clear indication
whether continuer *ja* is also expressing agreement, it should not automatically be
interpreted as an agreement token. Whether or not the listener agreed with what
the speaker was saying will most likely become clear once they take the floor
themselves. We considered *ja* to be a continuer when it made up the whole turn
and was uttered in between or overlapping with turns of the other speaker's
continued topic, as in (10). Often, speakers used *ja* as a continuer multiple times
before taking the floor themselves.

(10) A: Dat   is hetzelfde als uh   dat   je   net d'rin
         that is the.same   if   that you   just in.there
         komt en   dat   je   dan uh als   je   d'r   net gaat
         come and that you then   if   you there just go
         wonen dat je   dan heel secuur bent
         live   that you then very careful are
         'That is the same as when you just move in somewhere and you are very
         careful at first.'

      B: [**Ja**]
         'Yeah.'

      A: [**en**] uiteindelijk zie   je   het niet meer.
         and   eventually   see you   it   no   more
         'and eventually you no longer see it.'

It should be noted that *ja* as a continuer can easily be replaced by nonverbal communication, most iconically nodding, or nonlexical items, for instance *uh huh* or *hm mm*. During a telephone conversation (the source of all data used in this study), however, nodding is very unproductive and has to be replaced by sound. Jefferson (1985) as well as Drummond and Hopper (1993) find that *yeah* can both indicate "passive recipiency" and be used when speakers are ready to take over the floor. Since in most cases continuer-*ja* was preceded or followed by more continuers, *ja* in Dutch telephone conversations does not seem to necessarily indicate high speakership incipiency (wanting to become the speaker) on the part of the listener either.

Instead of responding to another speaker's utterance, *ja* can be used to underline or emphasize a speaker's own immediately preceding statement. Liu (2013) investigated the use of the English discourse marker *yeah* by Chinese speakers of English (see also Fuller 2003). Liu found that the Chinese speakers used *yeah* for acknowledging information from the interviewer much more often than English native speakers (65 percent versus 12.5 percent), while the English native speakers used *yeah* relatively more often within a turn to confirm their own statements. In these cases, speakers are essentially agreeing with themselves. It goes without saying that this use of *ja* never appears turn-initially. However, when *ja* appears in sentence-final position, it will often be ambiguous as to whether it refers to the immediately preceding sentence by the same speaker, or to the preceding turn of the other speaker. This is largely due to the fact that in both interpretations, the speaker is essentially agreeing with, or affirming the same thing: the other speaker's statement or question. In the case of emphasizing-*ja* this happens indirectly, as it is used to emphasize the speaker's own statement that is in agreement with, or confirming the other speaker's statement or question.

Ja can also be used to indicate a topic shift, as is illustrated by (11). The conversation has landed on a particular house that is for sale, and speaker A states that she concluded earlier that the prices of the houses on that street were still rising. Speaker B answers *ja* (which can either be agreeing or merely acknowledging), but does not continue talking. After a short pause, speaker A then says *hmm*, probably because speaker B has not really responded to what she said. Speaker B then introduces a new, though somewhat related topic (since both topics mention houses).

(11) A: Nou,   d'r   heeft   ook   een   huis   daar   twee huizen vandaan
         well   there   has   also   a   house   there   two   houses away.from
         te   koop gestaan.   Dat heeft   wel   in de   krant   gestaan.
         to   buy   stood   that has   PART   in the   newspaper   stood
         Dit   niet. Maar   dat andere   wel.   En   toen dacht   ik   ook
         this not   but   that other   PART   and   then thought I   also
         al   nou die   stijgen nog wel.
         already well those rise   PART PART
         'Well, there was also a house for sale two doors away from that one. That
         one has been in the newspaper, but this one has not. And then I thought
         well, those prices are still going up.'

      B: Ja.
         yeah
         'Yeah.'

      A: Hmm

      B: **Ja**   ik ben   van de   week in   het huis   geweest
         yeah   I   am   of   the week in   the house   been
         van   die   Pakistaanse familie die   bij   mijn   deur   woont.
         of   that Pakistani   family   that   at   my   door   lives
         'A couple days ago I went into the house of that Pakistani family that lives
         next door to me.'

In (11), *ja* prefaces a topic shift. Crucially, all instances in which *ja* indicated a topic shift in our data were shifts to a new topic. This is in contrast with the topic shift function of *nee*, in which case the topic that is being shifted to is always old (see 10.2.3.2).

In terms of function and meaning, *ja* as an indicator of topic shift does not differ much from the other uses of *ja* described above. Topic shift-*ja* can also be seen as an acknowledgment token. However, instead of acknowledging a single preceding turn, as for instance continuer-*ja* or possibly affirmative reaction-*ja*, it acknowledges an entire chunk of preceding discourse, before moving on to a new topic.

Closely connected to the use of *ja* to indicate topic shift is *ja* used to conclude a topic. In that case *ja* acknowledges an entire chunk of conversation, but is not followed by more speech.

Sometimes *ja* can be used to express emotions such as for instance surprise, indignation, disbelief, or enthusiasm. The interpretation of emotion-*ja* depends on the context and intonation. When watching sports, for example, someone might enthusiastically yell "jaaaaaaa!" indicating that they are happy with what is happening.

Ja can be used to indicate that the speaker is thinking about or considering something. This can happen in the middle of a speaker's own turn, in which case it functions as a "filler," or in response to another speaker's statement or question, as in (12). Especially in the latter case, *ja* is intonationally stretched out.

(12) A: Maar   ja,   oké,   je   kan   beter   toch   maar   een   keertje
          but   yeah   okay   you   can   better   PART   PART   a   time
          soms   over   de   drempel   heen   stappen   of   zo.
          sometimes   over   the   threshold   over   step   or   something
          'But sometimes you are better off just doing it.'

      B: **Jaaa.**
          yeah
          'Yeah well.'

      A: Ja   nou   ja.
          yeah   well   yeah
          'Yeah, anyway.'

When uttered in response to another speaker's turn, thinking-*ja* indicates a reluctance to agree. In (12), speaker B's stretched-out *ja* indicates that he is considering or thinking about speaker A's suggestion. In response, speaker A's diminishes his prior statement by saying *ja nou ja*. This suggests that thinking-*ja* is a "dispreferred response" (cf. Enfield et al. 2012). Even though B has not actually expressed disagreement, he has not agreed either. The only non-committing answer in this case would have been an acknowledgment-*ja*. Thinking-*ja* as a response is therefore not a neutral reaction.

Both emotive-*ja* and thinking/contemplative-*ja* are intonationally marked. In these examples, the meaning conveyed by the intonation contour appears to combine with the basic meaning of *ja*. In case of the enthusiastic *ja* response to a sports match, the speaker acknowledges (or even agrees with) what has happened on the field. In the example of contemplative *ja*, the speaker expresses their hesitation to agree.

In the subcorpus, four instances of *ja* were found that seemed to indicate that *ja* could be used to introduce a direct quote. An additional, specific search in the CGN yielded more such examples. One example is given below as (13).

(13) A: | Maar | Jolanda | die | vriend | was | er | dan | 't |
      |------|---------|-----|--------|-----|----|----|----|
      | but | Jolanda | that | boyfriend | was | there | then | the |

weekend	[hè].
weekend	PART

      'But Jolanda's boyfriend is there this weekend.'

    B: | [Oh] | ja. |
    |------|-----|
    | oh | yeah |

      'Oh that's right.'

    A: | Die | zien | elkaar | voornamelijk | in | 't | weekend. |
    |-----|------|--------|--------------|----|----|----|
    | those | see | each.other | especially | in | the | weekend |

      'They see each other mainly during weekends.'

    B: Ja.
      yeah
      'Yeah.'

    A: | En | ja | die | was | d'r | dan | nu | en | ze | zei |
    |----|----|----|-----|-----|-----|----|----|----|-----|
    | and | yeah | that | was | there | then | now | and | she | said |

ja	vind	'k	niet	zo	leuk	om	dan	al
yeah	find	I	not	so	fun	to	then	already

's ochtends	weg	te	gaan
in.the.morning	away	to	go

      'So he was there now and she said "I would prefer not to leave early in the morning."'

Example (13) suggests that *ja* can be used as a quotative marker. This use of *ja* has not been described in the existing literature on either Dutch *ja* or quotatives or polarity items in general. Foolen et al. (2006) describe Dutch *van* 'of' as a quotative and note that it is often followed by a particle, or interjection, such as *ja*. However, even though *ja* follows the quotative and, as such, appears to be part of the quote, it was not necessarily uttered by the person being quoted. In (13), it is even fairly unlikely that *ja* was part of the original statement. Example (13) also illustrates that *ja* can be used to introduce a quote without *van*, or any other quotative or particle. Since multiple quotatives can be used to introduce direct speech (e.g., Fleischman 1999), we assume that *ja* is itself also a quotative marker.

We hypothesize that the use of *ja* as a quotative marker can be explained by *ja*'s formal qualities. *Ja* usually appears at the beginning of a turn or sentence. In the subcorpus, *ja* was found sentence-initially in 86.5 percent of the cases (167 out of 193 occurrences. *Ja* in sentence-medial position is rare, especially considering that out of the sixteen instances of *ja* in sentence-medial position, four introduced direct quotes (the rest were examples of thinking or contemplative-*ja*, both of which are heavily intonationally marked). Quotative *ja* appears in sentence-medial position, usually without a pause. When *ja* is encountered in the middle of a sentence, this is marked.

Because *ja* occurs predominantly at the beginning of a turn or sentence, it has an inherent turn-initial quality. The majority of the sentence-initial *ja*s were also turn-initial. This, then, seems especially useful for introducing a direct quote. The quote was originally uttered as a sentence or turn in a different context and, as such, constitutes a new turn. The transition from the current turn to the quote (a new turn) can be signaled by *ja*. Closer examination of *ja* as a quotative marker has to await future research.

10.2.3.2 *The uses of* nee   The most iconic use of *nee* is as a negative answer to a polar question. In this use, *nee* expresses negation or denial and thus captures *nee*'s most basic meaning. Negative *nee* can be uttered in response to either a closed or leading polar question, much like *ja*.

In addition to negatively answering a question, *nee* can be used to negatively respond to a statement. In this use too, *nee* carries its basic meaning. Here, *nee* can also be used in isolation, although it is often part of a longer turn, as in (14).

(14)　A: Ik　hoorde bij　jou kabaal.
　　　　　I　heard　with　you noise
　　　　　'I heard noise on your end.'

　　　　B: **Nee**　dat　was　bij　jou.
　　　　　no　that was　with　you
　　　　　'No that was on your end.'

Parallel to answer-*ja* and reaction-*ja*, both answer-*nee* and reaction-*nee* have "late" varieties, in which case *nee* refers not to the immediately preceding turn, but rather to something earlier in the preceding discourse. As a late reaction or answer, *nee* cannot make up the entire turn, as it is necessary to indicate what exactly *nee* is referring to.

When looking at the frequency of *nee* as a negative response to statements, it can be concluded that it is not used very often (19 times), especially when compared to *nee* negatively answering a question (31 times) and the respective frequencies found for *ja* (23 times answering a question, 77 times responding to a statement). This finding appears to be consistent with Schegloff (2001) and other literature in the field of conversation analysis on dispreferred responses. The most basic type of a dispreferred response is disagreeing with another speaker's statement. Note that *nee* as an answer to a question should often not be considered a dispreferred response, as (neutral) polar questions simply inquire about truth conditions: "in the case of a polar question, confirmation is not the only projected outcome in the input context: reversing is also projected" (Farkas and Bruce 2009: 104).

An asymmetry has been found in the design of preferred versus dispreferred responses. Preferred responses tend to be straightforward, short, and unprefaced. Often, preferred responses take the form of just "yes," if a positive response is the preferred response. Dispreferred responses, on the other hand, tend to be delayed,

prefaced, and/or explained or elaborated upon (Clayman 2002; Kitzinger and Frith 1999; Pomerantz 1984; Pomerantz and Heritage 2012; Roberts et al. 2011; Sacks 1987; Schegloff 2001). As a result, turns with dispreferred responses do not usually consist of just a *no*. In fact, the word *no* is often not even explicitly uttered (Kitzinger and Frith 1999). Our data supports the idea that people prefer to avoid explicitly disagreeing with their conversation partners. As explained above, *nee* as a negative response to a statement is relatively infrequent and often does not constitute the entire turn.

Nee was used several times in the corpus as a preface to self-correct. In such a case, the speaker may break off the sentence, saying *nee* to indicate that what they said before was wrong (by negating it), and then proceeding. It might also happen that they do not self-correct with *nee* mid-sentence, but rather in a new sentence. In (15), *nee* is used to signal self-correct both mid-sentence and sentence-initially.

(15) A: Maar   daar   zit   dan   ook   een   bestuur   bij   en   nu
         but   there sits   then   also   a   board   with   and   now
         bestaat   dat   uh   't zit   iets uhm   **nee**   die   die
         exists   that   it sits   something no   that that
         die   Theo Driessen is   geloof ik   honderd   jaar
         that   Theo Driessen is   believe I   one.hundred year
         geleden geboren of   overleden. **Nee** geboren waarschijnlijk.
         ago   born   or   died   no   born   probably.
         'It also has a board and now it exists, *no* that Theo Driessen guy died or was born 100 years ago I think. *No*, born, probably.'

The speaker initially starts saying that the celebration he mentioned earlier is held because a music institute has existed for a certain number of years, but then remembers the real reason is that the first director, Theo Driessen, has either been born or passed away 100 years ago. He corrects himself one more time and states that it is in fact the anniversary of the director's birth date that is being celebrated. Using *nee* to preface self-correct is very similar to using *nee* as a response to someone else's utterance: in both cases *nee* signals denial or disagreement with an element in the preceding context.

Much like *ja*, *nee* has a topic shift function. However, as already touched upon in the previous subsection, *nee* signals a return to a previous topic, rather than the starting of a new topic. This was the case in all instances found in the data. This use of *nee* in Dutch corresponds to Lee-Goldman's (2011) observation that English *no* can signal a shift back to an earlier topic. When *nee* (or *no*) signals a topic return, its function is similar to Schegloff's (2001) "joke-to-serious *no*," in which *no* marks the transition between a joke, or non-serious talk, (back) to serious conversation. The similarity between joke-to-serious *no* and *no* as a topic shift marker is also noted by Lee-Goldman (2011), who considers joke-to-serious marking a specialized subset of topic return.

The observed difference in topic shift use between *ja* and *nee* is not surprising when the basic meanings of *ja* and *nee* are taken into account. When using *ja*, a speaker appears to confirm or acknowledge the preceding discourse, after which the conversation is taken into a new direction. As was mentioned in 10.2.3.1, *ja* is used in a similar way when it concludes a topic or an entire conversation. When *nee* prefaces a topic shift, it essentially dismisses the sidetrack the conversation got on, before the conversation returns to a previous topic. Supporting this analysis is the fact that no instances of *nee* concluding a topic or conversation were found in our corpus selection.

Like *ja*, *nee* can be used to express emotion. In the data, *ja* and *nee* appear to be able to express similar emotions: surprise, indignation, and disbelief. All these examples of *nee* are intonationally marked. *Nee* does not necessarily convey a negative emotion: when someone is being told they have won the lottery they may respond by yelling "neeeee!" It appears that the interpretation of emotive-*nee*, similar to emotive-*ja*, is heavily dependent on both its context and intonation.

Strikingly, we found that *nee* was often used as an affirmative answer or reaction. The core meaning of "affirmative *nee*" can be said to correspond to the core meaning of *ja*. *Nee* was actually used more often in an affirmative than in a negative way. When a question or statement contains sentence-internal negation, the way to respond affirmatively in Dutch appears to be to give a reaction containing a negation as well.[3] The Dutch answering paradigm can be described as what Pope (1973) has called an "agreement-disagreement answering system," in which an answer to an utterance is agreeing if it matches the question with respect to polarity, and disagreeing if it does not. The alternative answering system Pope (1973: 482) described is a "positive-negative answering system," in which an "answer is negative if it contains a sentential negation in its highest clause, and positive if it doesn't."

Unlike English, but much like many other languages (cf. Pope 1973), Dutch has a special word to express "positive disagreement" (disagreeing with a negative to arrive at a positive): *jawel*. It should be noted that answering *ja* to a negative utterance is infelicitous, whether it is intended as a token of agreement or disagreement. The appropriate answer is *jawel*, a compound of *ja*, meaning *yes*, and *wel*, a discourse particle used to deny a denial (Hogeweg 2009b). In terms used by Farkas and Bruce (2009) and Farkas (2011), *jawel* can be described as a [reverse, +] particle, as it expresses both a positive meaning and reverses the assumption posited in the preceding discourse. The presence of *jawel* in the Dutch answering paradigm makes responding to questions or statements, whether they are positively or negatively phrased, relatively straightforward:

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[3] Holmberg (2013) points out that examples such as "Does John sometimes not show up for work?" or "Did he once more not dress up for the occasion?" cannot be affirmatively responded to with a negative polarity particle. In these cases, however, the negation does not modify the main verb. See Holmberg (2013) for a full discussion on the different positions of negation in sentences in conversation.

> Positive utterance—agreeing response: *ja*
> Positive utterance—disagreeing response: *nee*
> Negative utterance—agreeing response: *nee*
> Negative utterance—disagreeing response: *jawel*

In addition to lacking a special word to express "positive disagreement," English appears to not have a clear-cut system for responding to utterances containing a negation at all. Even though Pope (1973) states that English has a positive–negative answering system, many other studies have found discrepancies with this system. Bald (1980), Farkas and Bruce (2009), Jefferson (2002), Kramer and Rawlins (2009), Tottie (1991), and Yaeger-Dror (1985) all find that *no* can be used to acknowledge or agree with negative utterances, although *yes* or *yeah* is not infelicitous. The result is that *yes/yeah* and *no* are both potentially agreeing and disagreeing responses to negatively framed utterances in English and that the only way to unambiguously respond to a negatively framed utterance is to make a full sentence, optionally accompanied by either *yes/yeah* or *no* (Bald 1980). Because the polarity features of the answering paradigm can be extended to uses of *ja* and *nee* that cannot appropriately be described as "agreeing" or "disagreeing" (e.g., continuer use of *ja* or *nee*, which, as argued above, should primarily be seen as acknowledging the preceding discourse), we adopt the terms "affirmatively" and "negatively."

An example of *nee* as an affirmative answer in Dutch is (16). Here, *nee* does not make up the entire turn. Speaker B has been telling speaker A about his weekend trip, after which speaker A asks *So it was not bad, huh?*, by which he means to ask for confirmation that it was (really) good. Speaker B answers by saying *No, no, it was not bad at all*, by which he means to say that it was indeed very good. Here, *nee* does not negate anything, but is used to confirm the assumption made by speaker A.

(16) A: Was   niet verkeerd   dus?
        was   not   wrong   so
        'So it was good huh?'

     B: **Nee   nee** was helemaal niet   verkeerd.
        no   no   was totally   not   wrong
        'Yeah it was very good.'

Nee can also be used to affirmatively respond to a statement containing a negation, as in (17). This was the type of *nee* most frequently found in the data (64 times). In (17), *nee* is used to agree with speaker A's statement. Additionally, it is followed by *I agree*, which confirms the assumption that *nee* is used affirmatively here.

(17) A: Maar   drieëntwintig euro dat is   toch nou   dat is
        but   twenty.three   euro that is   PART well that is
        al   gauw vijftig gulden voor een fles.
        already   fast fifty   guilders for a   bottle
        'But twenty three euro, that comes down to about fifty guilders for a bottle.'

B: Ja   da's   behoorlijk   veel   geld.
   yeah that.is quite   much money
   'Yeah that is quite expensive.'

A: Dat ja   dat   doe ik niet. Dat vind ik   ook
   that yeah that   do I   not   that find I   also
   niet leuk dan   meer   hè.
   not   fun then anymore PART
   'I am not paying that. That way it just isn't fun anymore.'

B: **Nee**. **Nee** dat   vind ik   ook.
   no   no   that   find I   also
   'I agree.'

Like *ja*, *nee* can be used as a continuer. *Nee*, however, can only be used in this way when the preceding turn contained a negation. (18) is a good example of how *ja* and *nee* thus complement each other as continuers.

(18) A: Ze   houden natuurlijk wel de   boel   in de   gaten.
        they keep   of.course   PART the   whole.lot in the   look
        'Of course they do keep an eye on everything.'

      B: **Ja**   [**ja**]
        yeah yeah
        'Yeah yeah.'

      A: [Maar] niet in   die   zin   dat   ze   regulerend
        but   not in   the sense that they   regulating
        gaan   op[treden].
        go   act
        'But not in the sense that they are going to regulate everything.'

      B: [**Nee**.] [**Nee**.]
        no   no
        'No. No.'

      A: [En] dingen gaan snoeien of   [gaan] maaien nee da's
        and   things go   prune   or   go   mow   no   that's
        niet de   bedoeling   **nee**.
        not   the   intention   no
        'And it is not the idea that things are going to be pruned and mowed.'

      B: [**Nee**.]
        no
        'No.'

Speaker A is telling a story, while speaker B listens and repeatedly indicates that she is still paying attention. Speaker A's first turn in the above example (and a few preceding turns) does not contain a negation. Speaker B therefore uses *ja* as a continuer. However, when speaker A starts using negations, speaker B immediately switches to *nee*.

Much as *ja* can be used to underline or emphasize a speaker's own statement or turn, *nee* can be used to do the same if the statement or turn contained a negation. This is shown in (18) as well, in the last but one turn when speaker A states 'No, that's not the idea, no.' As for *ja*, only instances of turn-final *nee* were considered to be examples of emphasizing-*nee* if there was a prosodic break between *nee* and the rest of the turn.

A few instances of *nee* could not receive a negative interpretation, even though the preceding turn did not contain a negation. In these cases, the affirmative interpretation of *nee* was arrived at because of the rest of the turn, as in (19).

(19)   A: Ja   dat   is   duidelijk natuurlijk [ja   die   zijn]
             yeah   that   is   clear   of.course yeah those are
             daar   zijn   er   ook   meer   van.
             there   are   there also   more   of
             'Yeah that is clear, of course. After all, there are more of those.'

       B: [Maar   goed.]
             but   well
             'Anyway.'

       A: ((silence))

       B: Ja.
             yeah
             'Yeah.'

       A: [Mmm.]

       B: [Ja]
             yeah
             'Yeah.'

       A: **Nee**   inderdaad.
             no   indeed
             'Indeed.'

Inderdaad 'indeed' can only be interpreted as affirmative. *Nee* in example (19) negates the assumption speaker A initially made, which was expressed by or underlying a statement uttered earlier in the conversation. In (19), *nee* negates speaker A's initial doubts. By doing this, however, the speaker aligns himself with the other speaker. This type of *nee* will therefore be considered as affirmative.

10.3 Optimal interpretation of *ja* and *nee*

If *ja* and *nee* can receive various interpretations, as outlined in the previous section, how do hearers come to an appropriate interpretation to fit the context? An Optimality Theory (OT) account will be presented here to model the interpretation of *ja* and *nee* (Smolensky and Legendre 2006; Hendriks and de Hoop 2001; Hendriks et al. 2010). Specifically, it will make use of a model designed by Zwarts (2004) and further developed by Hogeweg (2009b). Zwarts (2004) uses two constraints to model the various interpretations of the polysemous word (*a*)*round*, which can all be taken to derive from the basic denotation of *round* that Zwarts (2004: 350) takes to be a circle, i.e., a circular shape or movement. The closer to a full circle the interpretation of *round* is, the stronger the interpretation is. However, the interpretation has to fit the context. In a sentence such as *He came round the door*, for instance, *round* will not denote a complete circle, as the man is unlikely to have walked back through the wall. The two constraints that Zwarts uses to model this process of interpretive optimization are FIT and STRENGTH, as defined below:

> FIT: Interpretations should not conflict with the (linguistic) context.
> STRENGTH: Stronger interpretations are better than weaker interpretations.

In Zwarts' model, the potential conflict between the two constraints is resolved by ranking FIT over STRENGTH. This way, a weak(er) meaning that fits the context wins over a strong(er) meaning that conflicts with the context. Hogeweg (2009b) successfully applies Zwarts' (2004) model to the interpretation of the Dutch discourse particle *wel*. In this section we will use Zwarts' approach to model the interpretation of the Dutch discourse markers *ja* and *nee* in spoken telephone conversations.

In order to apply Zwarts' (2004) and Hogeweg's (2009b) OT model to the interpretation of *ja* and *nee*, it is necessary to establish a hierarchy in the different interpretations of the words. As already discussed in section 10.2, *ja* and *nee* both have a core meaning. The differences in the interpretations, then, mainly lie in whatever it is that *ja* or *nee* refer to: the interpretation of *ja* and *nee* is largely dependent on the context. The ranking in the hierarchy of the different interpretations of *ja* and *nee* will be established using the following two criteria:

 (i) **Referential distance**: Interpretations that include a shorter referential distance are stronger than interpretations that include a longer referential distance.
(ii) **Concreteness**: Interpretations that include a reference to a specific element in the discourse are stronger than interpretations that include a reference to a more vague part of the discourse.

On the basis of these two criteria, a hierarchy of interpretations can be established. This hierarchy can be found in Table 10.3. The last column shows the number of violations of the constraint that we assume on the basis of this hierarchy:

TABLE 10.3 **The ranking of the different interpretations of *ja* and *nee***

Refers to	*ja*	*nee*	STRENGTH
Propositional content of the immediately preceding sentence	Answer-*ja* Reaction-*ja* Continuer-*ja* Underlining-*ja* Thinking-*ja*	Neg. answer-*nee* Neg. reaction-*nee* Aff. answer-*nee* Aff. reaction-*nee* Continuer-*nee* Underlining-*nee* Self-correct-*nee*	
Immediately preceding context	Emotion-*ja*	Emotion-*nee* Prohibitive-*nee*	* *
Assumptions made, revealed by the preceding turn		Misunderstanding-*nee*	**
Propositional content earlier sentence	Quotative-*ja* Late answer-*ja* Late reaction-*ja*	Late neg. answer-*nee* Late neg. reaction-*nee* Late aff. answer-*nee* Late aff. reaction-*nee* Late self-correct-*nee*	**
Assumptions made, revealed by an earlier turn		Non-negation *nee*	***
Larger chunk of preceding discourse	Topic-shift-*ja* Concluding-*ja*	Topic return-*nee*	***

Table 10.3 identifies the different layers within the discourse that each interpretation of *ja* and *nee* refers to. The strongest interpretations of *ja* and *nee* are the ones referring to the immediately preceding turn or sentence or to the immediately preceding context. Each interpretation of *ja* and *nee* ranked lower in the hierarchy refers to an element in the discourse that is further removed or less defined (for instance, the entire chunk of discourse that topic shift-*ja*, concluding-*ja*, and topic return-*nee* refer to) than the discourse element higher-ranked interpretations refer to (for instance, the immediately preceding question answer-*ja* and answer-*nee* refer to).

Consider example (20).

(20) A: En   volgende week   heb   ik   nog   een   afspraak
          and   next   week   have I   still an   appointment
          met   d'r   gemaakt.
          with   her   made
          'And I made another appointment with her for next week.'

      B: Met   Henriët?
          with   Henriët
          'With Henriët?'

A: **Ja**.
   yes
   'Yeah.'

According to STRENGTH, *ja* in (20) should receive one of the strongest interpretations. Some of these interpretations, however, violate FIT. First of all, emotion-*ja* and thinking-*ja* violate FIT because *ja* was intonationally neutral. Underlining-*ja* violates FIT because *ja* occurs at the beginning of a turn. Continuer-*ja* violates FIT because *ja* was not uttered in response to a run-on story. Finally, reaction-*ja* violates FIT because *ja* was not uttered in response to a statement. The optimal interpretation is thus answer-*ja*, i.e., *ja* uttered in response to a polar question. This is illustrated in Tableau 10.1.

TABLEAU 10.1 **The optimization of the interpretation of *ja* in (20)**

'Met Henriët?' '**Ja**.' 'With Henriët?' 'Yeah.'	FIT	STRENGTH
☞ Answer-*ja*		
Reaction-*ja*	*	
Continuer-*ja*	*	
Underlining-*ja*	*	
Thinking-*ja*	*	
Late answer-*ja*		**
Late reaction-*ja*		**

When considering an example of affirmative *nee*, most interpretations violate FIT.

(21) A: Oh heb je dan al geen zon meer?
       oh have you then already no sun anymore
      'Oh the sun is already gone then?'

    B: **Nee**.
      no
      'Yeah.'

Because of the presence of the negation in the question, all negative interpretations violate FIT. Because *nee* is turn-initial, underlining-*nee* violates FIT. Because *nee* is in reaction to a question, both affirmative reaction-*nee* and late affirmative reaction-*nee* are in violation of FIT. The only two candidates that do not violate FIT are affirmative

answer-*nee* and late affirmative answer-*nee*. STRENGTH then yields affirmative answer-*nee* as the optimal candidate.

TABLEAU 10.2 **The optimization of the interpretation of *nee* in (21)**

'Oh heb je dan al geen zon meer?' '**Nee.**' 'Oh the sun is already gone then?' 'Yeah.'	FIT	STRENGTH
Neg. answer-*nee*	*	
Neg. reaction-*nee*	*	
☞ Aff. answer-*nee*		
Aff. reaction-*nee*	*	
Continuer-*nee*	*	
Self-correct-*nee*	*	
Underlining-*nee*	*	
Late aff. answer-*nee*		**

Essentially, as is demonstrated by Tableaux 10.1 and 10.2, only the strongest interpretations can be attributed to *ja* or *nee* when it makes up the entire turn. Weaker interpretations (for instance, late reaction-*nee*) will only become optimal when context is added to the input such that the strongest interpretations violate FIT. *Ja* or *nee* that receive interpretations that are not among the strongest of the hierarchy are therefore always part of a longer turn.

An example of a weaker interpretation of *nee* that becomes optimal can be found in (22).

(22)   A: Lag   je   te   maffen   meissie?
          lay   you   to   sleep   girl
          'Were you sleeping?'

       B: Ja.
          yeah
          'Yeah.'

       A: Oh   hoe   laat   lag   je   erin   dan?
          oh   how   late   lay   you   there.in   then
          'Oh, what time did you go to bed?'

       B: **Nee**   ik   lag   wel   op   de   bank   maar ...
          no   I   lay   PART   on   the   couch   but
          'No I was lying on the couch, but...'

A's second question in the third line of (22) is a *wh*-question, not a polar question, so *nee* by itself cannot be a negative answer-*nee*. B's addition of *ik lag wel op de bank* 'I was lying on the couch', which corrects speaker A's assumption that speaker B was in bed, makes all interpretations but misunderstanding-*nee* violate FIT. In this case, the extra information that follows *nee* explicitly points out as referent the assumption made by the other speaker that was revealed by the preceding turn.

TABLEAU 10.3 **The optimization of the interpretation of *nee* in (22)**

'Oh hoe laat lag je erin dan?' 'Nee ik lag wel op de bank maar...' 'Oh, what time did you go to bed?' 'No, I was lying on the couch, but...'	FIT	STRENGTH
Neg. answer-*nee*	*	
Neg. reaction-*nee*	*	
Aff. answer-*nee*	*	
Aff. reaction-*nee*	*	
Continuer-*nee*	*	
Self-correct-*nee*	*	
Underlining-*nee*	*	
☞ Misunderstanding-*nee*		**

An exception to the "rule" that *ja*s or *nee*s that make up the entire turn can only receive an interpretation from the highest level in the hierarchy is concluding-*ja*, which by definition stands on its own. Concluding-*ja*, however, is not aimed at eliciting a reaction (except maybe eliciting no further reaction), is intentionally vague, and is often not preceded by anything that can be responded to by *ja* or *nee*. An example of concluding-*ja* can be found in (23).

(23) A: En   dit   is   een   subsidie   die   bedoeld   is
         and   this   is   a   subsidy   that   meant   is
         voor   mensen die   werken   hè?
         for   people   that   work   right
         'And this is a subsidy that is meant for people that work, right?'

     B: Ja.
        yeah
        'Yeah.'

A: Dus naast   je   werk moet je   dan   zoiets   doen.
   so   next.to your   work must you   then   something.like.that do
   'So you have to do something like that in addition to your job.'

B: Ja.
   yeah
   'Yeah.'

A: En   ik   weet   niet precies   hoe ze   dat   berekenen.
   and   I   know   not   exactly   how they   that calculate
   Naar   draagkracht   of   wat   dan   ook.
   to   financial.means or   what   then   also
   'And I am not exactly sure how it is calculated. Taking into account
   financial means or something.'

B: Ja.
   yeah
   'Yeah.'

A: **Ja.**
   yeah
   'Yeah.'

Because in (23) *ja* is not preceded by a statement, question, or run-on story and is intonationally neutral, none of the strongest interpretations fit the context and, as such, all violate Fɪᴛ. It is not followed by a quote, nor is it specified what it could be a late response to. Additionally, *ja* is not followed by additional speech. Therefore, the only interpretation that does not violate Fɪᴛ is concluding-*ja*. This is then the optimal candidate, even though it maximally violates Sᴛʀᴇɴɢᴛʜ, as illustrated in Tableau 10.4:

Tᴀʙʟᴇᴀᴜ 10.4 **The optimization of the interpretation of *ja* in (23)**

'(…)''Ja.' **'Ja.'** '(…)' 'Yeah.' 'Yeah.'	Fɪᴛ	Sᴛʀᴇɴɢᴛʜ
Answer-*ja*	*	
Reaction-*ja*	*	
Continuer-*ja*	*	
Underlining-*ja*	*	
Thinking-*ja*	*	
☞ Concluding-*ja*		***

10.4 Responding to positively and negatively framed utterances

In the majority of the occurrences of *nee* that were found in the data, *nee* was used affirmatively. This is part of what Pope (1973) has called an "agreement-disagreement answering system," as mentioned in section 10.2.3.2. The Dutch paradigm for answering questions and responding to statements can be analyzed as the result of bidirectional optimization.

There appear to be two ways to affirmatively react to another speaker's turn: to answer with *ja* (*yes*) and by having the response mirror the framing of the other speaker's turn. Two constraints can thus be formulated:

FAITH: Use *ja* (*yes*) to give an affirmative response and *nee* (*no*) to give a negative response.

ALIGN: Align the polarity of the response with the polarity of the utterance that is being responded to in order to answer affirmatively; do not align ("dis-align") the polarity of the response with the polarity of the utterance that is being responded to in order to answer negatively.

Essentially, the FAITH constraint depicts absolute polarity, whereas ALIGN depicts relative polarity. This is similar to the features of *yes* and *no* ([+] and [−], [same] and [reverse]) described by Farkas and Bruce (2009) and Farkas (2011). By representing absolute and relative polarity as constraints for formulating a response, rather than as inherent features of answer particles, the model can be extended to, for instance, other answer particles or responses consisting of an entire sentence, as well as account for the interpretation of *ja* (or *yes*) and *nee* (or *no*) by the listener. Additionally, it is in line with our proposal that other context features can also influence the interpretation of *ja* and *nee*.

In Dutch it is clear that ALIGN outranks FAITH, because otherwise *ja* would be used to agree with everything and *nee* to negate everything, regardless of the framing of the utterance that is being responded to. Note that these two constraints are effectively identical when it comes to responding to positively framed utterances. When the polarity of the utterance that is being responded to is negative, however, these constraints conflict.

As a general rule, speakers prefer to avoid negation: sentences with a negative content should be avoided because agreement is the preferred option (see section 10.2.3.2). Additionally, sentences that contain a negation should be avoided because these are linguistically more complex (for an elaborate discussion, see Hendriks et al. 2010: 109–36). This is captured in an additional constraint:

*NEG: Avoid negation in the output.

Because this constraint is twofold, it can be violated twice. *NEG is ranked below FAITH, because it is more important to be faithful to the input than to avoid using marked constructions.

For Dutch, the following form–meaning pairs can be established:

TABLEAU 10.5 **The bidirectionally optimal form–meaning pairs for responding to positively and negatively framed utterances in Dutch**

Form–meaning pairs	ALIGN	FAITH	*NEG	ECONOMY
☝ < ja, aff + >				
< nee, aff + >	*	*	*	
< jawel, aff + >				*
< ja, neg + >	*	*	*	
✌ < nee, neg + >			**	
< jawel, neg + >	*	*	*	*
< ja, aff –>	*			
☞ < nee, aff –>		*	*	
< jawel, aff –>	*			*
< ja, neg –>		*	*	
< nee, neg –>	*		**	
☝ < jawel, neg –>		*	*	*

Using *ja* to respond affirmatively to a positively framed question violates no constraints, as it uses *ja* to agree, mirrors the way the utterance that is being responded to is framed, and does not have negation in the output. Using *nee* to respond affirmatively to a positively framed utterance violates all constraints, as it does not mirror the framing of the other speaker's utterance, does not use *nee* to negate, and has a negation in the output. Using *jawel* to respond affirmatively to positively framed utterances also, like *ja*, satisfies all constraints. However, both *ja* and *jawel* are also yielded as the optimal forms to negate a negatively framed utterance, since neither violates ALIGN. *Jawel* is morphosyntactically more complex than *ja* since it is a compound of *ja* 'yes' and *wel* 'affirmative.' Therefore, *jawel* violates a general economy constraint ECONOMY that the simplex forms *ja* and *nee* satisfy. Responding affirmatively to a positively framed utterance is less marked than negating a negatively framed utterance, as it is a less complex construction. The unmarked form pairs with the

unmarked meaning and the marked form pairs with the marked meaning, yielding
< ja, aff + > and < jawel, neg − > as super-optimal pairs.

When it comes to negating positively framed utterances, *ja* or *jawel* violate ALIGN,
since they mirror the framing of the utterance to disagree. Additionally, they violate
FAITH, as they use *ja* to disagree, and they violate *NEG once. Although *nee* violates
*NEG twice, it satisfies both ALIGN and FAITH and is therefore the optimal form to
negate positively framed utterances.

Nee is, however, also the optimal form to respond affirmatively to negatively
framed utterances. Although it violates *NEG (once) and FAITH, as it uses *nee* to
respond affirmatively, it satisfies ALIGN, since the response mirrors the utterance that
is being responded to with respect to framing (which in this case is negative). Since
both *ja* and *jawel* violate ALIGN, *nee* is the optimal candidate to express this meaning.
Nee was, however, also part of the optimal pair < nee, neg + >. As can be seen in the
tableau, *nee* is more harmonic to negate positively framed utterances than to agree
with negatively framed utterances. When establishing super-optimal form–meaning
pairs, the best form pairs with the best meaning. The final super-optimal form–
meaning pair is therefore < nee, neg + >.

However, because there are only three forms available for four meanings, one form
has to express two meanings. Because the (unidirectionally) optimal form to respond
affirmatively to negatively framed utterances is *nee*, < nee, aff − > is the fourth form–
meaning pair in the Dutch answering system.

The OT model proposed here can easily be extended to other languages. An
alternative ranking of the constraints can account for observed answering paradigms
in other languages. Additionally, a model on the basis of variable ranking of con-
straints, rather than inviolable rules can account for inter-speaker variability and
variability between regions in which the same language is spoken. In section 10.2.3.2,
the Dutch answering system was briefly compared to the English answering system.
English does not have as straightforward a paradigm as Dutch. Although there are
established form–meaning pairs when it comes to answering to positively framed
utterances, problems arise when speakers have to respond negatively framed utter-
ances. This could be attributed to the absence of a word equivalent to Dutch *jawel*.
Because English only has two forms for four meanings, both *yes* and *no* will have to
pair with two meanings.

Yes is the optimal candidate for responding affirmatively to positively framed
utterances, as it satisfies all constraints, whereas *no* violates all of them. *No* arises as
the optimal candidate to negate positively framed utterances, as it satisfies both ALIGN
and FAITH, and only violates *NEG (twice), whereas *yes* violates all constraints.
Conversely, the meaning "aff +" is the optimal meaning for the form *yes*, as it is
the only meaning for which *yes* violates no constraints. The meaning "neg +" is the
optimal meaning for the form *no*, because it is the only meaning for which *no* satisfies

TABLEAU 10.6 **The bidirectionally optimal form–meaning pairs for responding to positively and negatively framed utterances in English**

Form–meaning pairs	ALIGN	FAITH	*NEG
✌ < yes, aff + >			
< no, aff + >	*	*	*
< yes, neg + >	*	*	*
✌ < no, neg + >			**
☞ < yes, aff –>	*		
☞ < no, aff –>		*	*
☞ < yes, neg –>		*	*
☞ < no, neg –>	*		**

both ALIGN and FAITH, the two highest-ranked constraints. Two super-optimal form–meaning pairs can thus be formed: < yes, aff + >, < no, neg + >.

Because in the English paradigm two meanings are competing for four meanings, the remaining form–meaning pairs are determined by means of unidirectional optimization. It is in establishing the optimal forms to respond to negatively framed utterances that the problems with the English answering system arise. < yes, aff + > and < no, neg + > are the super-optimal form–meaning pairs, regardless of the relative ranking of FAITH and ALIGN. As was discussed in section 10.2.3.2, both *yes* and *no* are used to respond affirmatively and negatively to negatively framed utterances. It therefore appears that the relative ranking of ALIGN and FAITH is undetermined or can differ between speakers or regions: if ALIGN is ranked higher than FAITH, the remaining optimal form–meaning pairs are < no, aff – > and < yes, neg – >, which would correspond to an agreement-disagreement answering system (as in Dutch). However, if FAITH outranks ALIGN, the remaining optimal form–meaning pairs are < yes, aff – > and < no, neg – >, which would correspond to a positive-negative answering system. In case the ranking is undetermined, all four form–meaning pairs are optimal.

A potential explanation for the lack of a straightforward answering paradigm could be that English (or certain varieties of it) is transitioning from a positive-

negative answering system to an agreement-disagreement answering system or vice versa (note, however, that English used to have a four-form positive-negative answering system, with different words for responding to positively framed utterances: *yea* and *nay*). A third (and optionally a fourth) form to express positive disagreement or negative agreement in English would help establish the relative ranking of FAITH and ALIGN and resolve the confusion involved in responding to negatively framed utterances. Currently, however, English seems to lack definite form–meaning pairs when it comes to responding to negatively framed utterances.

Because the OT model we propose here does not attribute specific meanings or features to *ja* or *yes* and *nee* or *no*, but rather poses that the use and interpretation of these particles is largely determined by the context, it can account for, for instance, different answering paradigms between languages and inter-speaker variability within a language, and how listeners are able to interpret *ja* or *yes* and *nee* or *no*. In this respect, our model differs from other analyses of the English answering paradigm or answering paradigms in general, such as Kramer and Rawlins's (2009) ellipsis account, Farkas and Bruce's (2009) and Farkas's (2011) absolute and relative polarity features, and Holmberg's (2013) proposal that there are two homophonous negative answer particles, each with their own specific meaning.

10.5 Conclusion

In addition to their basic meanings, *ja* 'yes/yeah' and *nee* 'no' can have quite different functions in spoken Dutch. *Nee*, for instance, turns out to be more often used as an affirmative answer than as a negation. Additionally, *nee* can be used to return to a topic, whereas *ja* is used to indicate topic shift. It is also noteworthy that *ja* can be used to introduce quotes. By means of two criteria, *referential distance* and *concreteness*, we have established a hierarchy of the different interpretations of *ja* and *nee*. Interpretations are stronger when they include a shorter referential distance and when they refer to a specific element in the discourse. Stronger interpretations are preferred over weaker interpretations, yet weaker interpretations can win the competition when they fit the context, since the constraint FIT outranks STRENGTH, as proposed by Zwarts (2004) and Hogeweg (2009b). We modeled the established form–meaning pairs in the Dutch answering paradigm using bidirectional OT, after which we demonstrated that the proposed model can also be applied to answering paradigms in other languages, and specifically that it can account for the less-than-straightforward English answering paradigm.