

The Prosody of Response Tokens in Danish

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Abstract

This PhD thesis investigates the role of prosodic features of response tokens and their interactional functions in Danish. The response tokens *ja* ‘yes’, *nej* ‘no’, *nå*, approx. ‘oh’, *okay* and *mm* are described as being part of a grammatical system. The overall question is how prosodic and interactional features tie in with the specific set of words investigated. The project is based on Conversation Analysis, and uses this framework to describe the interactional functions as accomplished in sequences in Danish talk-in-interaction. The data includes a wide range of conversations, most of them in everyday interaction, from which various collections of response tokens have been made.

The PhD thesis consists of four individual articles and this thesis report. Each article describes multiple prosodic varieties of response tokens as used in interaction. The thesis report reports on the overall framework, approach and processes shaping the project, and compares the findings from the articles in order to investigate the role of prosodic features of response tokens in accomplishing interactional functions.

The project concludes that specific prosodic patterns are not strictly correlated with specific functions, but that prosodic features is an important factor in the grammar of response tokens in Danish. Pitch is found to be a factor in achieving and structuring affiliation and displays of affective stance, in the sense that it is used in creating contrasts in various places in the system of response tokens.

Article 1:

This article gives an overview of the response tokens *ja*, *nej*, *nå*, *okay* and *mm* as receipts in third position in Danish. Based on the existing literature, the article offers an overview of the distribution of the response tokens in each sequential position. The article focuses on the use as a receipt in third position and offers a single-case analysis of each response token in this position. The article studies six usages in third position by treating two varieties of *okay* as separate. The analyses focus on epistemics, affiliation and alignment.

The article argues that the interactional features mentioned above should be taken into account when describing and categorizing response tokens in interaction, and offers a set of possible functions or features for such a categorization based on the analyses. The article also acknowledges the importance of prosodic and phonetic cues in such a system, but does not offer a full phonetic and prosodic analysis besides reporting on the (then preliminary) findings of article 2 on *okay*.

Based on the analyses, the article argues for a distinction between *sufficient confirmation* (*ja*, *nej* and *mm*) and *stance-oriented* (*nå* and *okay*) words.

Article 2:

This article describes *okay* in Danish and focuses on its use in third position with rising pitch in contrast to falling pitch.

Previous research proposes that there are two varieties of *okay* in Danish: *okay* with falling pitch occurring in third position and indicating sufficient understanding, and *okay* with rising pitch as a continuer indicating so-far understanding and that a projected trajectory may continue.

Based on a collection of all instances of *okay* in 20 hours of interaction, this article finds a substantial number of instances of *okay* with rising pitch occurring in environments described in the previous research as those where *okay* with falling pitch occur – i.e. in third position.

The analyses reveal the contrast between the two varieties of *okay* in third position, and describe how *okay* with rising pitch in third position indicates that an answer can or must be expanded or that there are still unresolved matters that the answer did not deal with in full.

Article 3:

This article describes the use of the response tokens *ja* and *nej* with rising pitch in everyday interactions in Danish. The analysis shows that the tokens are used to achieve affiliation in second position in sequences containing displays of affective stance, which is shown to be contrastive with the tokens with level pitch that instead disaffiliate in the same sequences.

The preceding turns eliciting the tokens are also often marked with a wide pitch span, but sometimes other prosodic features than pitch are employed to perform a display of affective stance. These turns often request reconfirmation, but can also implement a range of other actions that make *ja* or *nej* a relevant response. This type of relation between *ja* or *nej* and the preceding turn with rising pitch can be seen as a type of prosodic orientation.

The affiliation achieved is shown to be similar across both *ja* and *nej* when doing a range of actions, specifically confirmation and disconfirmation, acceptance and agreement. The article argues that the rising pitch on *ja* and *nej* can be said to have an affiliative function, while level pitch should be considered non-affiliative.

Article 4:

This article describes the pitch variation of *mm*, which can be used as a continuer by speakers to allow larger projects such as tellings, in Danish and shows that speakers regularly distinguish two forms with different uses. Both forms are used in ways that can be glossed as continuers, but the distinction reveals more details about how speakers orient to the structure of tellings.

The article argues for a distinction between an understanding *mm* and affective *mm*. Understanding *mm* is shown to have rising pitch and be used to display understanding in contexts where that has been made relevant through requests for recognition or interrupted tellings. The same form, i.e. rising pitch, is also used for confirming with *mm*. Affective *mm* is shown to have falling pitch and is in contrast used to affiliate in contexts during tellings where displays of affective stance or other heightened involvement has been made relevant.

Both forms fit earlier descriptions of continuers in the sense of allowing a projected trajectory to continue, and this suggests that the term *continuer* covers a range of uses, and that the structure of tellings is an important factor for a deeper understanding of continuers.

Dansk resume

Dansk titel: *Svarords prosodi i dansk*

Denne ph.d.-afhandling undersøger prosodiske træks betydning for svarord og deres interaktionelle funktioner på dansk. Svarordene *ja*, *nej*, *nå*, *okay* og *mm* beskrives som en del af et grammatisk system. Det overordnede spørgsmål er hvordan prosodiske og interaktionelle træk interagerer med de undersøgte svarord. Projektet er baseret på konversationsanalysen (CA) og bruger frameworket til at beskrive de interaktionelle funktioner som realiseret via sekvenser i dansk samtaleprog. Data inkluderer en bred vifte af samtaler, for det meste hverdagsinteraktion, hvorfra forskellige kollektioner af svarord er blevet lavet.

Ph.d.-afhandlingen består af fire selvstændige artikler samt denne oversigtsgivende kappe. Hver artikel beskriver flere prosodiske varianter af svarord brugt i interaktion. Kappen beskriver overordnet frameworket, tilgangen og processerne bag projektet og sammenligner opdagelserne fra artiklerne for at undersøge svarords prosodiske træk og deres rolle i at implementere interaktionelle funktioner.

Projektet konkluderer at specifikke prosodiske mønstre ikke er direkte korreleret med bestemte funktioner, men at prosodiske træk er en vigtig faktor i svarordenes grammatik på dansk. Tonegang viser sig at være en faktor i opnåelsen og struktureringen af affilierung og udtryk for affektiv stillingtagen (*stance*), i den forstand at det bruges til at skabe kontraster forskellige steder i systemet af svarord.

Artikel 1:

Denne artikel giver et overblik over svarordene *ja*, *nej*, *nå*, *okay* og *mm* som kvitteringer i tredje position på dansk. Baseret på den eksisterende litteratur giver artiklen en gennemgang af distributionen af svarordene i hver sekventiel position. Artiklen fokuserer på brugen som en kvittering i tredje position og laver single-case analyse af hvert svarord i denne position. Artiklen undersøger seks typer brug i tredje position ved at behandle to varianter af *okay* som separate. Analyserne fokuserer på epistemiske forhold, affilierung og alignment.

Artiklen argumenterer for at de ovennævnte interaktionelle træk bør tages højde for ved beskrivelsen og kategoriseringen af svarord i interaktion, og tilbyder en liste af mulige funktioner eller træk til sådan kategorisering baseret på analyserne. Artiklen anerkender vigtigheden af prosodiske og fonetiske træk i sådan et system, men udfører ikke en fuld fonetisk eller prosodiske analyse udover at give artikel 2s (dengang foreløbige) beskrivelse af *okay*.

Baseret på analyserne argumenter artiklen for en skelnen mellem *tilstrækkeligt bekræftende* (*ja*, *nej* og *mm*) og *stillingtagensorienterede* (*nå* og *okay*) ord.

Artikel 2:

Denne artikel beskriver *okay* på dansk og fokuserer på dets brug i tredje position med stigende tonegang overfor faldende tonegang.

Tidligere undersøgelser foreslår at der er to varianter af *okay* på dansk: *okay* with faldende tonegang som forekommer i tredje position og indikerer tilstrækkelig forståelse, og *okay* med stigende tonegang der som fortsættelsesmarkør indikerer aktuel forståelse og at et projiceret forløb kan fortsætte.

Baseret på en kollektion af alle forekomster af *okay* i 20 timers interaktion dokumenterer artiklen et betydeligt antal af forekomster af *okay* med stigende tonegang i kontekster beskrevet i den tidligere litteratur som dem hvor *okay* med faldende tonegang bruges – dvs. i tredje position.

Analyserne beskriver kontrasten mellem de to varianter af *okay* i tredje position og hvordan *okay* med stigende tonegang indikerer at et svar kan eller bør udvides, eller at der stadig er uafklarede forhold som svaret ikke håndterede tilstrækkeligt.

Artikel 3:

Denne artikel beskriver brugen af svarordene *ja* og *nej* med stigende tonegang i hverdagsinteraktioner på dansk. Analyserne viser at svarordene bruges til at opnå affilering i anden position i sekvenser som indeholder udtryk for affektiv stilling, hvilket kontrasterer med svarordene med jævn tonegang som i stedet disaffilierer i de samme sekvenser.

De foregående ture som elicerer svarordene er ofte også markeret med et bredt toneleje, men nogen gange benyttes andre prosodiske træk end tonegang til at udtrykke affektiv stillingtagen. Disse ture anmoder ofte om genbekræftelse, men kan også udføre en række andre handlinger der gør *ja* eller *nej* en relevant respons. Denne type relation mellem *ja* eller *nej* og den forrige tur med stigende tonegang kan ses som en type af prosodiske orientering.

Affileringen fremlægges som ensartet på tværs af både *ja* og *nej* ved implementeringen af flere handlinger, herunder bekræftelse og afkræftelse, accept og enighed. Artiklen argumenterer for at stigende tonegang på *ja* og *nej* kan siges at have en affiliativ funktion, mens jævn tonegang skal anses som nonaffiliativ.

Artikel 4:

Denne artikel beskriver variationen i tonegang på *mm*, som kan bruges som fortsættelsesmarkør af talere til at tillade større projekter som fortællinger, på dansk og viser at talere systematisk skelner to former med forskellig brug. Begge former bruges på måder som kan kaldes fortsættelsesmarkører, men distinktionen afdækker yderligere detaljer om hvordan de orienterer sig efter fortællingers struktur.

Artiklen argumenterer for en skelnen mellem et forstående *mm* og affektivt *mm*. Det vises at forstående *mm* har stigende tonegang og bruges til at vise forståelse i kontekster hvor det er blevet gjort relevant med anmodninger om genkendelse eller afbrudte fortællinger. Den samme form, dvs. stigende tonegang, bruges også til at bekræfte med *mm*. Det vises at affektivt *mm* har faldende tonegang og derimod bruges til at affiliere i kontekster i løbet af fortællinger hvor udtryk for affektiv stillingtagen eller anden art af øget involvering er blevet gjort relevant.

Begge former passer tidligere beskrivelser af fortsættelsesmarkører i betydningen af at tillade et projiceret forløb at fortsætte, og det antyder at begrebet *fortsættelsesmarkør* dækker en række af anvendelser, og at fortællingsstruktur er en vigtig faktor for en dybere forståelse af fortsættelsesmarkører.

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The Prosody of Response Tokens in Danish

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1 Introduction

1.1 The main aim

The main aim of this project is to investigate the role of prosodic features manifesting on response tokens in Danish, as a grammatical system of units within the grammar of Danish talk-in-interaction. A growing number of studies describe various prosodic and phonetic shapes of response tokens, such as rising and level pitch on *nå* in Danish (Steensig et al. 2013) or English *oh* (e.g. Reber 2012), but this project describes the prosodic shapes across the different lexical items.

The project is based on collections of the response tokens *ja* ‘yes’, *nej* ‘no’, *nå*, approx. ‘oh’, *okay* ‘okay’ and *mm* and relates their interactional functions to their prosody. It investigates how the relationship between function and prosody is governed by a system, i.e. to what degree a specific function correlates with a specific prosodic pattern across the tokens. The project builds on previous knowledge about some response tokens while creating new knowledge about others. The description of the prosodic system of response tokens also provides knowledge on the role of prosody in interaction.

The response tokens *ja*, *nej*, *nå*, *okay* and *mm* have been chosen due to their high frequency and the fact that they are often anecdotally said to vary a lot regarding prosody. A poster with the title *Guide to the Danish ‘NÅ’ – Fluent in Danish with just one word* made by Københavns Sprogcenter (2016) and posted on Facebook, has become a viral phenomenon. It features 12 “uses” of *nå* with pronunciation differences expressed through orthography and meaning differences glossed cursorily. Such variation has however received little systematic description in Danish tradition, especially when seen in relation to the frequency of the tokens.

1.2 The articles and the research questions

This is an article-based thesis, and it consists of four articles and this thesis report. I will refer to the articles as *article 1-4*. I will introduce them here shortly in an abstract-like fashion, but see section 5 for an extended commentary.

- 1) Article 1 is about *ja*, *nej*, *nå*, *okay* and *mm* (i.e. all five words) as receipts in third position and gives an overview of them. It is published as Steensig & Sørensen (2019), and describes the differences as stance. Building on the article on *okay* (article 2), it is argued that the distinction between *okay* with falling pitch and *okay* with rising pitch in third position is a distinction between separate stances, but the article does not otherwise focus on prosody. The prosodic varieties of *okay* are treated as separate words, while matching and mismatching *nej* are treated as separate uses. The article argues for a distinction between “sufficient confirmation” (*ja*, *nej*, and *mm*) and “stance-oriented” (*nå* and both forms of *okay*) particles.
- 2) Article 2 is about *okay* and focuses on the distinction between two prosodic varieties in third position. The article is to be published as Sørensen & Steensig (in press) in an edited volume on *okay* across languages. The study investigates two varieties of *okay* distinguished through prosody: *okay2* with rising pitch that is used as a continuer and in third position, and *okay1*

with falling pitch used in third position. Here the prosodic shape – rising pitch – is investigated on the same lexical item but across sequential positions – in “continuer position” and in third position – but for third position also as distinct from the same token with falling pitch. It is shown that in third position, *okay1* receipts the solicited information as sufficient and closes the sequence, while *okay2* indicates that the answer is understood to be unfinished at that moment and “keep the interaction open”. It is argued that the prosodic shape of rising pitch treats the ongoing activity as not having reached a closure both in second position and continuer position.

- 3) Article 3 describes *ja* and *nej* in second position. Its focus is on rising pitch on *ja* and *nej* and how it is used to affiliate with an affective stance in second position. It shows that the rising pitch on *ja* and *nej* contrasts with level pitch, which does not affiliate in the same contexts. The article shows that this is the case for both *ja* and *nej*, and that the rising pitch is often used in contexts where the preceding turn has displayed an affective stance through other prosodic features, such as having a wide pitch span. It is argued that the rising pitch is used to affiliate with a positive affective stance that may display various types of affect, such as surprise.
- 4) Article 4 describes prosodic varieties of *mm* and is a draft. It focuses on *mm* as a continuer, but digs deeper into different types of continuation. It shows that *mm* can have rising or falling pitch, and that they are different types of “continuers”. *Mm* with rising pitch display understanding in contexts where that has been made relevant, such as through requests for recognition and try-marking, and may be related to *mm* doing confirmation in second position that also has rising pitch. *Mm* with falling pitch is used during multi-unit turns at points where affiliation has been made relevant, such as through prosodic displays of affective stance or reaching important points during the telling.

1.3 Structure of the report

This report is structured as follows: Section 2 contains background knowledge about different relevant approaches. Section 3 explains relevant conversation analytical terminology (position, action and stance) as related to the study of response tokens, some information on existing knowledge of variation in response tokens in Danish, and how this relates to grammar. Section 4 contains information on the data, the collection method, and the practical systematizing and registration of occurrences. Section 5 contains comments on the articles trying to streamline their terminology, and help the reader in following the arguments in the comparisons. It is recommended to read the articles before section 5. Section 6 is the discussion of the overall research questions in which the findings of the articles are compared, while section 7 is the conclusion.

2 Background

2.1 Theoretical approaches to interaction

2.1.1 Conversation Analysis

Conversation Analysis is the study of naturally occurring interaction based on recordings of face-to-face or phone interaction. Methodologically, it builds on the fact that there is more than one participant in interaction and that these participants interpret each other’s conduct in real time in order to

interact. Analysis is done to show how the participants in interaction must have analyzed or interpreted a previous contribution (i.e. a turn) to the interaction, for them to give their own contribution. This allows the analysis to use the fact that participants can treat interactional behavior as deviating, i.e. that interaction is accountable (Garfinkel 1967). This moves the analysis of e.g. a turn from being analyzed only through the researcher's eyes, to being analyzed through the perspectives given by the participant(s) in the interaction.

Conversation Analysis has developed a number of relevant terminologies pertaining to the features relevant for interaction. Interaction occurs in sequences of action and turns relate to each other by being in sequential positions (Schegloff 1968; Schegloff 2007). Interaction also occurs in real time, and the study of turn-taking has found how participants orient towards the timing of talk across speakers, and how turns are constructed through units (Sacks, Schegloff & Jefferson 1974).

2.1.2 *Interactional Linguistics*

The distinction between Conversation Analysis and Interactional Linguistics is not categorical or easily delimited, but Interactional Linguistics has as its aim the description of linguistic structures as used in interaction (Couper-Kuhlen & Selting 2018: 14). However, as a subfield of Linguistics, it is different from other types of Linguistics. It is “a strictly empirical, data-driven approach” (Couper-Kuhlen & Selting 2018: 14) and relies on recordings of naturally occurring social interaction (Couper-Kuhlen & Selting 2018: 19) cf. Conversation Analysis, in contrast to approaches built on introspection and experimentation. Interactional Linguistics sees non-linguistic features of interaction such as gaze and embodied behavior as an analytic resource. This means that when analyzing single cases, such as for finding out what a certain linguistic element is doing in a sequence, all the features that may be relevant for the participants should be considered in the analysis in order to understand what occasioned the element under investigation or how it was responded to. This may include gaze and other embodied conduct. It is also possible to study multimodal behavior as it is used together with specific linguistic features (e.g. Pekarek Doehler 2019); however, this is not an aim of the current project.

2.2 *Approaches to phonetics and prosody*

2.2.1 *Prosody and phonetics in interaction*

The study of prosody in interaction is built on both Conversation Analysis and Interactional Linguistics and is based on interactional data. However, there are a number of different ways that prosody and phonetics have been studied.

Interactional approaches to prosody do not necessarily operate completely independent from other approaches. There are studies of prosody in interaction that use terminology from other approaches in the description of prosody (Barth-Weingarten 2016: 41–42), such as Kim (2010) studying *high boundary tones* as described for Korean, and concepts like *pitch accent* in the description of English (Szczepek Reed 2010).

The function of prosody is not necessarily different from any other potential linguistic unit, such as the word, as a resource in interaction. However, prosodic features may have special characteristics or affordances when studied in interactional sequences. This includes that pitch can occur on all voiced stretches of speech, its gradual character and relation to a speaker's pitch range, and how various prosodic features relate to each other through e.g. stress and across neighboring syllables.

Sequentially, it can be meaningful to take into account how prosodic features can copy or in other ways relate to the features of the previous turn.

It is common to take a broad approach and include many parameters in the description of phenomena. The analyst can consider *phonetics* as including *prosody* instead of distinguishing segmental and non-segmental features. Regardless of the perspective however, there is no doubt that both segmental and non-segmental features can be used for interactional purposes (Couper-Kuhlen & Selting 2018, Online-Chapter E).

Some studies have used the term *phonology of/for conversation* (Local, Wells & Sebba 1985; Local, Kelly & Wells 1986) and take a number of prosodic and segmental features into account in turn-taking. Ogden (2012) studies reference in conversation and includes prosodic and segmental features, including acoustic measurements of phonetic features as they vary within segments, such as the duration of the closure and release of plosives. It is possible to consider some aspects of a turn as constitutive in relation to a certain function (Walker 2014), but it is also sometimes worthy to describe a wide range of features and their variation (as in Local 1996).

Reber & Couper-Kuhlen (2010) describes a number of prosodic patterns as *gestalts* as they are used on material with specific segmental substance, such as English *oh*. Couper-Kuhlen (2012) distinguishes “disappointment” from “irritation” as it is displayed through prosodic means in the same position.

Walker warns about “giving analytic privilege to pitch features” (2017a: 17). Nevertheless, the studies in this project focus primarily on variation in pitch. This is due to the research question going across tokens, meaning that segmental differences make comparison difficult. Over the course of the project, duration was found to do separate interactional work (Sørensen 2018) and loudness did not seem to correlate with any of the phenomena under investigation.

Prosody can perform a function in interaction in several ways. One perspective is to see a prosodic pattern as a marker of a certain function, just like any other component (syntactic, lexical or other) of a turn. Another perspective is to see a prosodic pattern as relating to a previous turn (or other part of contribution to the interaction), formulated by Gorisch et al. (2012) as pitch contours being considered locally and not as drawn from a lexicon of pitch contours. There are different ways to relate to the previous turn however. Ogden (2006) describes a potential system of upgrading vs. downgrading of phonetic features of first and second assessments, while Szczepek Reed (2006) studies prosodic matching vs. mismatching across various sequences. This is called *prosodic orientation* (Szczepek Reed 2006) and can be considered a type of *external syntax* of turns (Linell 2009), and is how prosody achieves interactional accomplishments through certain positions in sequences. Another aspect is the question of what can be used in the same slot and whether prosodic features give rise to contrasts (Persson 2018). These perspectives do not necessarily exclude each other – the prosodic features of a subsequently matched turn may also do interactional work.

2.2.2 *Phonetics and prosody of Danish*

The intonation of Danish has been studied, but many questions are still unanswered. Grønnum has investigated the intonation in several studies since the 1970’s, and other people have built on or related to Grønnum’s model (1998a). This model mainly accounts for relations between stress groups, utterances and text intonation. It contains some functional aspects in relation to question types (Grønnum & Tøndering 2007) and contrastive stress. It has been described as not able to account for single syllables (Brøndsted 1997) and only sometimes explicitly addresses how a contour spreads over a

stress group consisting of only one syllable. Most of Grønnum’s studies describe one variety of Danish as spoken in Copenhagen, but Grønnum and others have also looked at regional varieties (Fischer-Jørgensen 1984; Grønnum 1994), but still mainly focus on the contour of the stress group.

The data basis for Grønnum’s model is based on different types of speech, none of which reveals much about the interactional features that are of interest to response tokens. This includes read speech, constructed speech and experimental studies, and later studies are based on “spontaneous speech” in the DanPASS corpus, which is based on map tasks (Grønnum 2009).

On the other hand, there are a number of studies of Danish phonetics and prosody based on interactional data. These are however very spread and focus on very different aspects of interaction or Danish. A. B. Pedersen (2015) studies the placement of pitch of whole declarative utterances treated as questions without concluding its significance for distinguishing declarative questions from other declaratives. Mikkelsen & Kragelund (2015) studies exaggerated pitch as a device for highlighting the climax at the end of story-telling, while Nissen (2015) describes different types of repeats distinguished through prosody. Jørgensen (2015) can be seen as another study of distinctive actions, but as distinguished through segmental features, as vowel quality is what distinguishes the repair-initiator *hvar* [vɑ] ‘what, huh’ from the interrogative pronoun *hva* [væ] ‘what’. I will return to studies of features on response tokens in Danish in section 3.4.

In the phonology of Danish, prosodic features play a role in the realization of *stød*, which is indicated with a superscript glottal stop [ʔ]. The rules for its occurrence are complex, but it can occur on phonologically long or diphthongized syllables (Basbøll 2005). The realization varies across varieties of Danish, but can consist of a glottal stop, glottalization or creaky voice at the end of the syllable, and/or a fall towards the end in fundamental frequency (Fischer-Jørgensen 1989). In most of the Danish spoken in the data used here, *stød* is realized with a slight fall towards the end sometimes accompanying other features.

3 Describing response tokens

The term *response token* is widely used (e.g. Gardner 2001) and in various senses. I am here using it in a generic sense as in Heinemann (2015: 39), more specifically as a part of speech including a set of words, even when those words may also have features that are not related to what makes them response tokens. I here use *token* in the sense of a word (or “non-word”, as lexicalization is not required) that can be used in a freestanding turn. Thompson et al. (2015: 3) regards as responses those turns occurring in both second and third position. I follow this in using *response token* to refer to those tokens that can perform some responsive action when freestanding in second or third position, except if such use can be derived from other properties of the part of speech, e.g. nouns being freestanding in response to specifying questions (Fox & Thompson 2010). It thus becomes a subtype of interjections, and it means that response tokens may have other functions than those that make them response tokens. *Response token* corresponds to my use of Danish *svarord* (lit. ‘response-word’).

In this section, I describe relevant conversation analytical terminology, the known variation of response tokens in Danish, and discuss the perspective taken towards grammar in interaction.

3.1 The terminology in the description of response tokens

In this section, I describe the terminology of position, action and stance as established within Conversation Analysis and relevant for response tokens. The perspective is wider than the descriptions in

the articles and includes concepts that are not strictly studied in the articles, but relevant in the overall description of interactional functions and response tokens.

3.1.1 Position

Sequential structure is inherent in social interaction, and turns relate to each other through their positioning (Schegloff 2007). A sequence can consist of an adjacency pair, i.e. a first pair part in first position making a second pair part relevant (Sacks & Schegloff 1973), but sequences can also be expanded or inserted into other sequences.

As the name *response token* suggests, response tokens are connected to positions that respond in some sense to some prior talk. This does not mean that response tokens cannot occur in first position (e.g. as a repeat of the same response token in second position to request reconfirmation), but such uses are seen as derived from e.g. repetition. The positions that response token responses occur in, are primarily second, third and continuer position, but not all of the tokens in this project occur in all the positions. Many first position turns or formats are designed so they can receive a response in the shape of a one-word-construction such as a response token.

Second position can contain both *ja*, *nej*, *mm* and *okay* (but for a more limited number of actions). Here *ja* contrasts with *nej* (or *nej* with *jo* ‘yes’ in negative polarity contexts) regarding the action that they perform, depending on how it relates to the first pair part. All words can be used in third position e.g. as sequence closing thirds, and as continuers, but *ja* and *nej* do not contrast in those positions, as continuers always have to match in polarity with the preceding turn.

The term *continuer* is used for words that allow an ongoing (often multi-turn) activity to continue (Schegloff 1982), and does then not refer to a sequence-specific slot in the same way as the other positions (Couper-Kuhlen & Selting 2018: 231). However, continuers can be seen as specifically occurring within tellings and are in complementary distribution to the other responsive positions, and this will thus be referred to as a continuer *position* in this project.

There are uses that may fall into less traditional positions. Most importantly are transitional uses such as Heinemann (2017a) on transitional *nå* in what is called *post third*-position. It occurs between sequences and can be said to come before the first and after the last turn of a sequence, sometimes both, but also in the beginning or end of interactions.

Besides the uses as freestanding words constituting their own turn, the term *position* be also used for locations within a turn, e.g. initially, medially and finally in a turn, and as a tag on a turn.

3.1.2 Action

Action in Conversation Analysis is sometimes described as the main job that a turn is interpreted to perform (Levinson 2013) in order to make a next turn relevant. It is also possible to deprioritize the turn as a unit and take the perspective that there are “no actions, only the parts of actions” (Enfield & Sidnell 2017 in an exaggerated, radical version of their claims). I adopt a terminology somewhere in between where I distinguish action from stance (see below) as parts of what a turn is doing, because the distinction is important in order to understand how the various functional and formal aspects of turns interact (see article 3 as an example of and argument for the distinction). This section is based on Sørensen (2019), in which I propose a number of actions, shown in in Table 1, as those relevant for the response tokens under investigation (explained below). It includes all relevant actions for freestanding turns with response tokens and not only responsive actions.

Table 1. Actions of response tokens in Danish (based on Sørensen 2019)

Action	<i>ja</i>	<i>nej</i>	<i>nå</i>	<i>okay</i>	<i>mm</i>
Continuer	+	+	+	+	+
Receipt	+	+	+	+	+
Confirmation (epistemic)	+	+	-	-	+
Disconfirmation	- (<i>jo</i>)	+	-	-	- (possible [m?])
Compliance (with request)	+	-	-	+	+
Rejection (of request)	-	+	-	-	- (possible [m?])
Response in summons-answer sequence	+	-	-	-	+
Transitional	+	- (?)	+	+	- (?)
Assessment	+	+	-	-	+

A plus sign (on green background) means that the action is attested, while a minus sign means that the action is not attested as performed with this word. Those in parenthesis are polarity-related exceptions, while (?) means that the indication is uncertain.

Response tokens can be made relevant through actions such as requests for confirmation, requests for action and a wide range of other actions. I will go through the actions mentioned above in the table.

As a continuer, a word passes the opportunity for the speaker to initiate repair or any other response that would make the previous speaker stop the continuation of e.g. a telling (Schegloff 1982). All five response tokens can be used for this.

Receipts are those that mark that the preceding turn, such as an answer to a question, was appropriate in some sense. They can occur in third position or in response to (unsolicited) informings (Thompson, Fox & Couper-Kuhlen 2015). This includes change-of-state tokens, which mark a certain epistemic stance. Acknowledgement may be seen as a type of receipt. All the tokens can be used for this, but with potential differences in stance (see article 1).

Confirmation occurs when a speaker confirms some previously presented information, such as in response to a request for confirmation. This use is not here distinguished from agreement, since the same words are used for and it works in the same way, but it should be in descriptions of other phenomena than response tokens. Words may be polarity-sensitive and accomplish actions depending on the occurrence of a negation, and the syntax, in a preceding turn (Heinemann 2015). *Nej* (when matching the polarity), *ja* and *mm* can confirm. Disconfirmation is then when the previously presented information is negated. Only *nej* is used to disconfirm, but *jo* (Heinemann 2005) and *mm-* (i.e. a *mm* with glottal closure) can also disconfirm.

Compliance is the situation where speaker commits or agrees to a request for action. *Ja* and *mm* can comply, but not *nej* since polarity works differently from confirmation. However, *nej* (and possibly *mm-*) then can do rejection, i.e., non-compliance.

Responding to a summons (Schegloff 1968) can be done by *ja* and *mm*.

Transitional uses, i.e. marking a beginning, closing or change in activity or topic (Heinemann 2017a), can be done by *ja*, *nå* and *okay* and possibly more.

First assessments can also be done by the tokens, but they may differ in what assessment they do. This can be done with *ja*, *nej* and *mm*.

Actions can be grouped together in *action families*, for example the relationship between confirmation and disconfirmation, and their relation to requests for confirmation. Actions can also be described at different granularities.

3.1.3 *Stance and affiliation*

Stance is used in many senses, but is here treated as separate from action. This means that a certain turn can perform an action while displaying a stance. Stance is not completely independent of the action or sequence that it occurs in. Much research has been done on epistemic stance (Stivers, Mondada & Steensig 2011; Heritage 2012a; Heritage 2012b) in information sequences, but in request sequences, deontic stance can also be displayed (Stevanovic & Peräkylä 2012). Stance is also used with respect to the display of affect, such as an affective stance of disappointment (Couper-Kuhlen 2009).

Epistemic stance (Heritage 2013a) is relevant in actions such as requests for confirmation or confirmation, assessments and story-telling. It can be displayed in most if not all positions in such sequences, from first pair parts to sequence closing thirds. Response tokens in second and third position may pick up stances displayed in preceding turns and be congruent with them or not. A change-of-state token such as *oh* (Heritage 1984) is displaying a certain stance towards some information while doing the action of receipting the information. Deontic stance may mirror the types of epistemic stances, but is not investigated in this study.

Affective stances may be considered orthogonal to epistemic or deontic stances and displaying an affective stance is also related to affiliation. Affiliation is when speakers share stances or align on an affective level, in contrast to pure alignment on an action basis (Stivers 2008 and cf. the distinction between action and stance). Matching affective stances can thus be said to affiliate. Moreover, there is no fixed set of types of affect that can be displayed with an affective stance. The “type” of affect may range from happiness, sadness, irritation or anger (Selting 2010) to surprise (Wilkinson & Kitzinger 2006). Some displays of affect can be valenced, i.e. positive or negative (Freese & Maynard 1998). Affiliation is an achievement in the sense that it has to be made relevant, as many sequences are “neutral” regarding the display of affective stance. Resources used in achieving affiliation thus depends on the specific sequence, but certain resources such as response tokens may be designed to achieve affiliation in certain context. If affiliation has been made relevant, but a next speaker does not affiliate, disaffiliation can be the consequence. Some resources may be non-affiliative in the sense that they will align unproblematically in contexts where affiliation has not been made relevant, but but will result in disaffiliation in contexts where affiliation has been made relevant.

3.2 *The tokens and their known variation*

The five response tokens have been considered units and treated as lexical items. There is therefore already some description of their variation, besides the description of their ‘identity’ of phonetic segments. All the words have in common that they are highly frequent in interaction, but with significant differences in frequency in e.g. position. Here I mention their already known variation and other potentially related differences in order to highlight the landscape of response tokens.

Various prosodic and phonetic features are relevant to investigate for the tokens. They all contain voiced segments making pitch relevant. *Okay* differs from the others by having two syllables and having a (medial) plosive. As all other spoken language, the words can be produced with different voice qualities, such as smiley voice, breathy voice or possibly the most common one, creaky voice. As syllables, they can be manipulated in duration, but as monosyllables (except *okay*), rhythm between syllables can only be investigated as relating to preceding or following talk.

Instead of taking the tokens as pre-established words, a different approach would be to disregard the existence of e.g. *ja* as a lexical unit, and collect all instances of vowels in the range around [æ~a]. This would be very interesting, but increase the size of the collection tremendously due to reflexes of <argh> and <ah> being included, and it would shift the focus away from the research question here. For this project, the lexical integrity of each token will be assumed to have some meaning (also following a member's perspective); however, it is absolutely an interesting idea for a future study to compare the tokens investigated here to non-lexicalized linguistic resources – if these response tokens can even be considered lexicalized.

Ja is probably the word with most varieties. Besides [jæ], it can occur without an initial glide [æ], and can have a glottal onset [ʔæ] but also with less constriction and more friction. Independently of the variation in the glide, the vowel itself can be more diphthongized (e.g. [jæɥ]) as in the widespread spelling *jaer* (also mentioned in Sørensen 2018). Some occurrences of *jaer* seem to have a glottal stop or stød-like quality [jæɥʔ]. The polarity-mismatching variety *jo* 'yes' (Heinemann 2015) is generally considered a separate word, like *jep*, *jeps* 'yep' and *tja*, a hesitating 'yes', and in dictionaries treated under separate entries. The spellings *jah* and *jæ* also exist in Danish orthography and are used to represent a prolonged or two-pulsed *ja*, but these spellings are not used here as the colon in Jeffersonian transcription was found more appropriate (Jefferson 2004). Prolonged *ja* is investigated in Sørensen (2018; see also Lindström 1999 for the Swedish equivalent). It is worth noting that the use of the English word *yes* is not uncommon, and could be seen as a variant.

There are also many variants of *nej* [nɛj(?)]: *ej* (ranging from 'no' to 'ooh' and more) because it has a number of uses not related to *nej* (Tholstrup 2014). *Næ* [nɛ] was only found rarely. *Nej* is interesting in comparison with the others because it can have (and regularly has) the prosodic feature stød (that varies in realization from glottal stop to creak or pitch, Fischer-Jørgensen 1989), but can also be without it. The variant *nehej* was never found in data, but does exist.

Nå is mainly [nʌ] and can sometimes have a lower vowel [nɑ], but this may also be a variation of *nej*. It mainly varies in duration. The Dictionary of Spoken Danish (Brink et al. 1991) also mentions its prosodic variation.

Okay is special because it has two syllables and can have different stress patterns. Besides that, the vowels can have very different shapes, both vowels may be diphthongs or not, possibly related to its history as a loanword. A few occurrences even lack one of the vowels, including cases lacking the last one, but are still recognizable as *okay*. Besides this, there are also a pronunciation based on the Danish letter names ['oʔ 'kɔʔ] and *okiedokie*. *Okay* can also function as an adjective or adverb.

Mm has several shapes that relate to the use of breathing or breathy voice as sometimes reflected in writing through *mh*. The spelling *hm* is mainly for when it is used as a hesitation marker (it can be seen as a closed-mouth variant of *øh(m)*, Sørensen et al. 2019). *Mm* can also be [n:] or other nasal

¹ The IPA used in this section is largely based on the system used in DDO – The Danish Dictionary (n.d.). See Basbøll (2005) or Grønnum (1998b) for further information on the use of IPA for Danish.

and does not have to have a completely closed mouth. There is a variant with final glottal closure *mm-* that is used very much like *nej*, in that it is used for disconfirmation and can match the negative polarity of preceding turns making it perform the same actions as *ja* (Heinemann 2015) or *mm*. *Mm* is the only token that is not usually treated as lexicalized and does not exist in the dictionary of Danish standard orthography (Dansk Sprognævn 2012). It has been described as “wordless” even in research on its variation in terms of pitch (Berg Sørensen 1988: 90).

Most tokens can be reduplicated and go into compounds with other words, including tokens not considered here. Reduplications include *jaja* (Heinemann 2009), *nejnej* (Heinemann 2015), *nåå* (Heinemann 2016a), *jojo* (Lund 2017), *mm mm*, *okayokay*, while compounds include *nåja* (Emmertsen & Heinemann 2010), *nåjo* and *nånej*, *jaokay* (Holm 2018), *nejokay* and *nåokay*. Response tokens can also be compounded with other elements than response tokens, such as *da* ‘surely, really’ (see Heinemann 2009), *så* ‘then, so’ and especially *men* ‘but’ as in *jamen* ‘yes but’ (Steensig & Asmuß 2005; H. F. Pedersen 2015).

3.3 Grammar and functions in interaction

The term *interactional function* is in widespread use, but has not been discussed critically to my knowledge. However, Interactional Linguistics is historically related to functional grammatical approaches such as West Coast Functional Grammar (Couper-Kuhlen & Selting 2018: 12). In Butler’s definition of a functional approach as one with the stance that “language is essentially a means of communication between human beings”, and that this explains why “languages are as they are” (2003), Interactional Linguistics qualifies as one.

Grammar can then be said to be the structuring of functions and forms. Interactional functions can be those described in the previous sections, such as action and stance, but can also be related to turn-taking. They can of course not be understood outside of their sequential environment, as interactional data requires a “positionally sensitive grammar” (Schegloff 1996a).

One issue is that of dealing with forms and of connecting them to functions. It is not clear if interactional functions could be considered “pragmatics” or “semantics”, or how this distinction should even be considered, if relevant at all, in interactional data. Heritage (1998) describe the “semantics” of *oh* framed in inferences, sometimes called a “general semantics” (Heritage 2013b: 332). The issue is that it is clear that words, especially response tokens, are different in form, but that there is no clear way to determine if something is “encoded” in the lexeme. It is of course clear that descriptions of specific instances of use must include the context, especially sequential context, but also prosody or other features. It is possible to argue that *yes* and *no* may be distinct in some encoded feature of being positive vs. negative, since they are distinctive for those features in many contexts (but see Jefferson 2002), but it is not clear how to “ground” such potentially abstract features in the data besides capturing a range of observed uses on a more abstract level. Currently, I consider regular uses such as actions and stances, functions (cf. Walker 2014), independent of whether that may be considered semantics or pragmatics.

I believe part of speech terms may be relevant for capturing regular structuring for actions with e.g. tokens. Since action also has to be “typified” (Brouwer & Rasmussen 2019), it is already a category. It is in this way I use *response token*: to capture that I see those tokens as designed to do a specific subset of responsive actions. In this way, the part of speech does not exist as a feature of the word, but as an abstract description capturing observations about words. As an example of another

formal category, the concept of a clause captures the fact that formally similar elements can be considered grammaticalized for interactional purposes (Thompson 2019). A set of functions can be said to be bundled together in the part of speech *response token*. This is also what can be said to be done in article 1 and Sørensen (2019).

The question of how position, action, lexis and other formal/functional features interact, is a question of compositionality. There have been previous claims about the independence of functional features in relation to form. As an example, Stivers claims that the repetition of tokens “is a communication practice in its own right and may be understood as analyzably separate from the item being repeated” (2004: 269), while Helmer & Zinken (2019) describe their practices as doing an “invariant contribution”. Ogden (2010) describes two types of complaints as being a composition of features related to complaining combined with features related to either sequence closure or seeking affiliation. This type of bundles or abstractions can be considered grammatical structure, and there is various research on how to capture structures as e.g. formats (Fox & Heinemann 2016), constructions (Imo & Lanwer 2020), gestalts (Reber & Couper-Kuhlen 2010) or expressions and phenomena (as used on Samtalegrammatik.dk). Stivers (2019) can be seen as an example of English interjections as organized according to managing social relations.

Interactional functions such as action, stance and turn-taking can then be considered the purposes that language or grammar is structured to perform. Languages may differ in how the functions are structured through various formal features, which may result in “collateral effects” (Sidnell & Enfield 2012).

Abstract descriptions may be problematic if they become so generic that they fail to be able to capture their interactional relevance (Walker 2014; Persson 2018). Abstract structural description must be aware of this. However, categories of functions may also capture their formal organization without claiming that the functions are at some level ‘the same’. There can be structural reasons why different functions share one form without these functions being the same. An example could be that the ergative case, a form, includes the functions of subject and object while the accusative case includes subjects and agents, but this does not necessarily warrant a meaningful description of subjects and objects as the same.

I will use functional categories in the description of the phenomena under investigation. However, boundaries between categories are characterized by fuzziness (Barth-Weingarten 2016), as grammar in interaction and its units are emergent phenomena (Thompson 2019). I take it that the term *response token* captures a relevant organization of interaction without dismissing all the differences between the members of the category, and that there are structural features of this organization of various types related to the mapping between form and function at different levels.

4 Methods

In this section, I describe the data, the collection-based approach to the data, and the management of the large amount of data.

4.1 The data

The recordings are all in Danish as spoken in Denmark. They stem primarily from either AULing (Samtalegrammatik.dk 2019) or Samtalebanken, the Danish TalkBank (MacWhinney & Wagner 2010). For the project on *okay*, two instances were provided by Birte Asmuß from her data. The

conversation *fyrene* from Samtalebanken also exists in CLARIN-DK (n.d.)² with better video and audio, which was found in 2018 and used onwards (mainly article 3). The articles use different collections and are based on different amounts of recording time because of their focus. All data have been collected with the informed consent of the participants and all names and other potentially identifiable information have been anonymized.

The data is very mixed on a variety of parameters. It includes both video and audio, including phone data. It is from different points in time and includes people in various ages, and to some extent from different parts of Denmark. Various activities happen in the recordings, but there is a tendency towards more epistemic contexts than deontic contexts. The recordings also vary greatly in audio quality, which has affected the collection since the focus is on prosodic phenomena. For this reason, some of the recordings with good audio quality, mainly *sofasladder* and *board-game-coffee* from AULing, are used in several articles. During the project, decisions about the selection of data were made more consciously over time.

The excerpts in the articles have been transcribed according to various kinds of Jeffersonian conventions (2004) with Mondadan conventions (Mondada 2019) used for multimodal conduct. Instead of transcribing the prosody with many details in excerpts such as through GAT (Selting et al. 2011), the transcriptions are complemented by visualized acoustic measurements by Praat of the turns of interest made according to the guidelines by Walker (2017b). The transcripts still maintain a high degree of detail, including marking of stress and final contours. Symbols for turn-final prosody refer to their form (Walker 2014).

The main approach to the description of phonetic and prosodic features is auditory, since this is judged closer to the participants' own understanding than acoustic measurements. Acoustic measurements and inspections via Praat (Boersma & Weenink 2019) has been a help in listening and understanding. The claims about the prosodic forms in the articles are mainly backed up by acoustic evidence. The main goal has not been a quantitative description, but certain calculations were made, such as the average rising pitch of *ja* and *nej* and average duration of some of the tokens.

4.2 *The method of collecting*

Most of the articles in this thesis are collection-based studies. This means that they are based on a collection of instances of the phenomena that I wanted to describe (Schegloff 1996b). The collections are based on formal criteria in the sense that they include specific linguistic material to describe what function or use that the linguistic elements have (Hoey & Kendrick 2018). The different studies use various degrees of specificity in their criteria, often requiring the token to be freestanding and sometimes to have a specific pitch.

The different resulting collections were not initiated separately, but have grown out of much “scouting” across various data (see below on the technical use of a spreadsheet). The large collection used in article 2 contributed to this, and is why it was decided that such large collections were not needed for the other studies. This “scouting” was important in determining what uses could be interesting and manageable to further develop into studies.

The point of collecting is to be able to describe the sequential environment and other features of the phenomenon under investigation, as participants in the interaction orient to it. The subsequent turns offer an interpretation of the phenomenon and is used to describe how the participants in the

² Available at <https://clarin.dk/clarindk/item.jsp?id=dkclarin:806062>

interaction make sense of the phenomenon, and this is sometimes called the “next-turn proof procedure” (Sacks, Schegloff & Jefferson 1974). In studies of one-word-constructions such as this project, it is often necessary to build on further turns than the one immediately after e.g. a response token, since there is no co-occurring talk together with the response token that may help in understanding what it is doing. Taking the broad sequential context into account is always a good idea, but in order to describe the interactional work of turns preceding the response tokens, it is not possible to rely on the response token itself when that is the phenomenon currently being investigated.

Participants’ orientation and understanding can become evident through deviant cases, where the sequential trajectory deviates in some way, but the participants highlight the deviation and thus expose the norm that was broken. This is not straightforward in the case of prosody, since it is sometimes considered non-accountable (Günthner 1996). The articles also use contrastive cases in order to argue for the interactional norms of response tokens, and orientation is considered from many angles.

Tokens registered as e.g. *ja* or one of the other tokens, are those that are heard as *ja*, based on member’s competence listening to Danish and repeated listening. In some cases, audibility makes it impossible to determine a token as such, and those were not included. However, there are varieties of each token that would be recognizable even to untrained hearers.

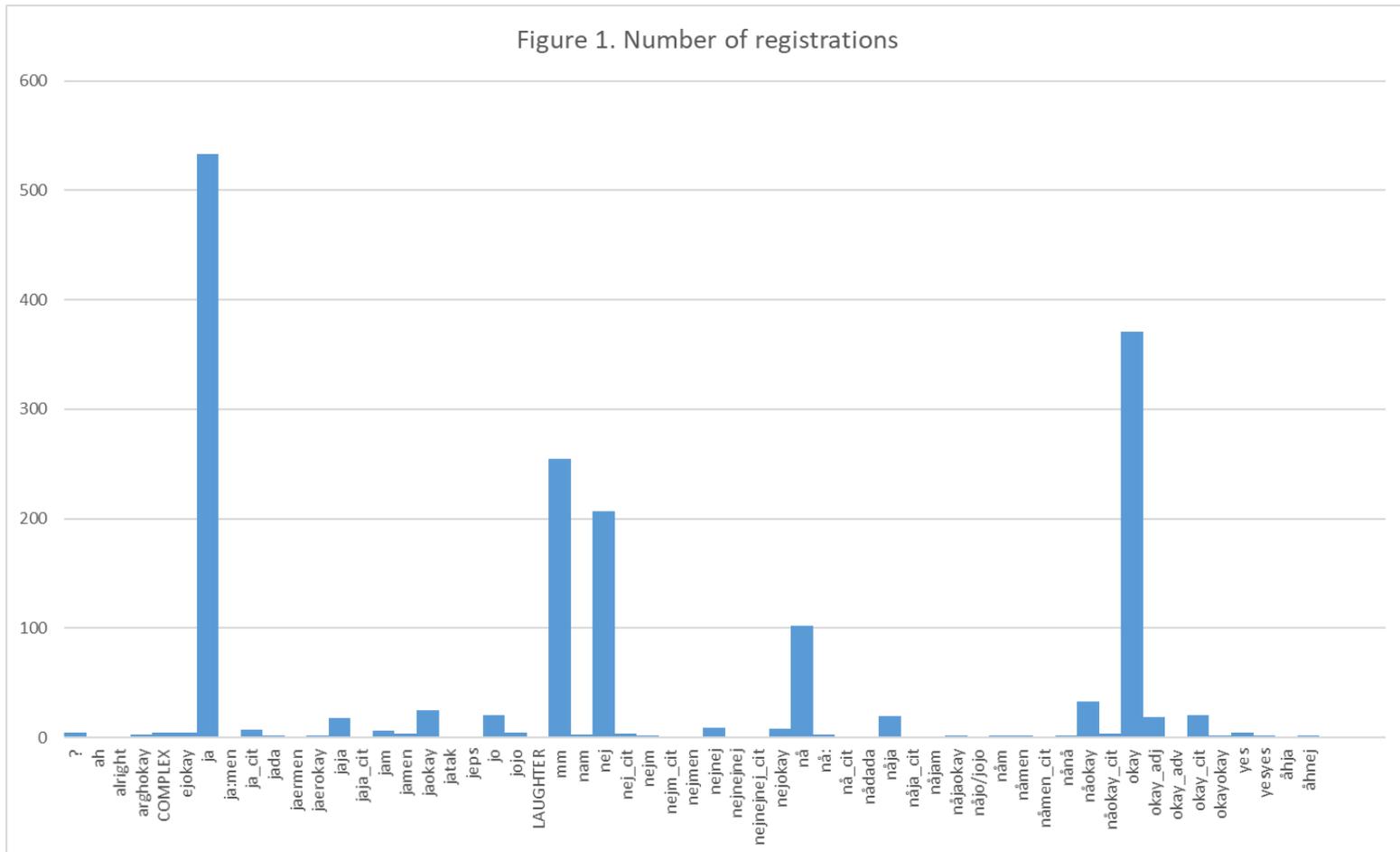
The various articles are different in size and approach. However, article 1 is not based on systematic data collection, but on the impressions of other on-going collections and analysis of single instances. Article 2 on *okay* collects a large size of instances (all instances of *okay* in 20 hours of data), while only analytically treating certain subsets of this collection. This was in order to provide some information on frequency as requested in the project. While the primary focus of the overall project has been freestanding use of the tokens, the *okay* article also includes turn-initial uses because they are functionally equivalent. Article 3 was strictly limited to freestanding *ja* and *nej*, while article 4 initially collected all instances of *mm* to report on the different uses outside of its focus.

4.3 Systematizing collections

The practical task of making and systematizing collections has been done with an Excel spreadsheet in which information about instances of tokens were collected. The columns contain information on where the token is found, which token and variety of that token it is, and columns that were used for specific purposes in the different studies, such as sequential position, action, prosodic features or status during the study. Registering a token in the spreadsheet is not an analysis in itself, but it would at least require determining that a token did occur. Registration has not been done uniformly across recordings, and a separate spreadsheet was used to keep track of whether some conversations had been systematically searched for all or some of the words. Tokens that were not part of the project have also been registered.

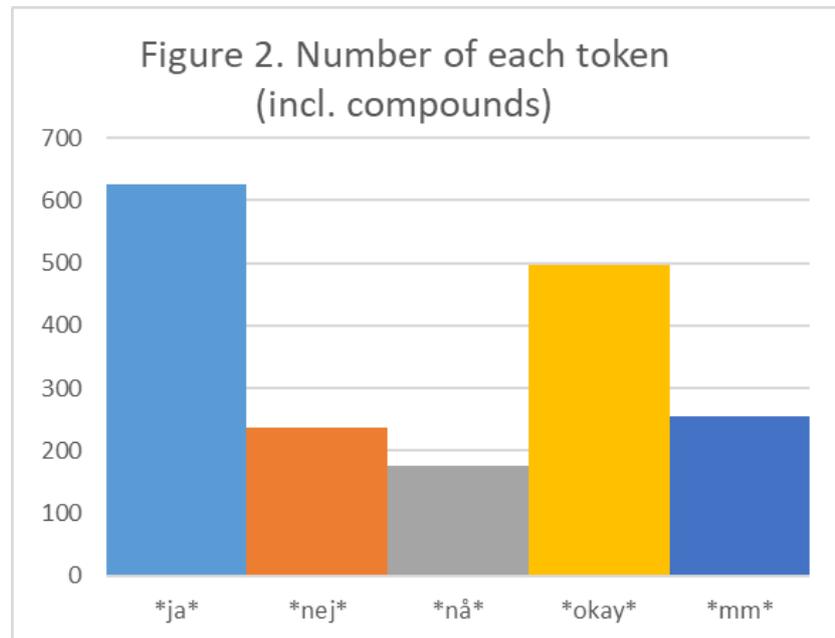
The spreadsheet contains 1741 registrations. The list and count for each primary category can be seen in figure 1. There are also secondary categories (e.g. the different subtypes of *ja*), but these have not been used in all rows. Those tokens with the most registrations are those investigated, while others are only registered once making the column invisible. The numbers are not comparable in any sense though and do not represent frequencies or whole datasets, but is provided here to convey the amount of data management and data complexity in this project. This coding does not claim to be consistent, and as evident from the existence of “?” and “COMPLEX”, it includes preliminary registrations. Some of the registrations include suffixes: “_cit” for use within a quote, “_adj” for uses as an adjective and “_adv” for uses as an adverb.

Figure 1. Number of registrations



The total count of each of the five response tokens is as follows: *ja* with 533 cases, *nej* with 207 cases, *nå* with 102 cases, *okay* with 371 cases and *mm* with 255 cases. Figure 2 includes only the five response tokens discussed in this project, but also counts compounds, i.e. *jaokay* is counted both in the numbers of *ja* and *okay*.

The spreadsheet has also been used to keep track of which tokens had been annotated in Praat and sometimes the measurements themselves. For article 2, a number of measurements were used and calculated in a separate script made in the programming language R. The spreadsheet was essential in keeping track of the different included and excluded types of *okay*. For article 3, the spreadsheet, Praat annotations and R script were important in discovering the prevalence of rising pitch on *ja* and *nej*.



5 Extended commentary of the articles

In this section, I comment on the articles that this thesis consists of, except in the case of *nå* where I build on previous research. The main point is to draw out some differences in them and clarify points regarding the overall project, rather than summarize them. I also take the opportunity to explain them as temporally unfolding during my time as a PhD student, underlining how the experiences from one article shaped the decisions in the next. The numbering of the articles follow the order in which they were made to some degree, but there were important overlaps between them. It is recommended to have read the articles at this point.

5.1 Article 1

Article 1 (i.e. Steensig & Sørensen 2019) provides an overview of variation of “dialogue particles” in third position. The term *dialogue particles* is equivalent to the use of *response token* here and in the other articles, and it looks at *ja*, *nej*, *nå*, *okay* and *mm*. It is an overview in the sense of not being a collection-based argument, but instead providing illustrative single-case analyses in order to highlight contrasts between the uses and point forward to possible future phenomena of study.

The five tokens are interpreted as having seven functions, because *okay* is split into two variants (“falling *okay*” and “rising *okay*”), and *nej* is split into two usages (“confirming” and “disconfirming”, i.e. matching and mismatching in polarity). There is thus a distinction between formally different variants and contextually different usages. However, the disconfirming *nej* is not in use in third position and not investigated in the article.

The study is not collection-based and instead it is informed by intuitions and the overall collection including instances from both Samtalebanken and AULing, but note that the example used for *nå* (extract 5) is not from these corpora or in the counts, but taken from Heinemann (2017b). The article offers a distribution analysis regarding the sequential position. This is based on “establishing the

sequential positions of every particle in the dataset” (p. 66³), in which “every” does not refer to all individual instances, but to all seven of the functions. Besides first, second and third positions as established by Schegloff (2007), the article argues that there should also be a “continuer position” for the location during tellings in which continuers are used.

The article analyses the instances in terms of alignment and affiliation, epistemic stance, and involvement/commitment. Regarding affiliation, most tokens are not used in affiliative environments and can be called non-affiliative. However, *nå* and *okay* with rising pitch are formulated in terms of affiliation in a broad sense of the speakers sharing perspective, which may be somewhat related to the epistemic stance of the sequence. Less commitment is marked or oriented to with *mm* in third position in the sense that it is said by someone who was not previously part of the sequence, i.e. the speaker of the turns in first or second position.

The descriptions based on differences in function regarding stance and the distributional analysis are used to conclude that there is a main divide between “sufficient confirmation particles” (*ja*, *nej* and *mm*) and “stance-oriented particles” (*okay* and *nå*). This divide is identical to the one proposed in Sørensen (2019) based on the attested actions of response tokens (see section 3.1.2) rather than stance or position.

5.2 Article 2: okay

Article 2 on *okay* is part of a book about *okay* across languages. The distinction between *okay1* and *okay2* is not original, but from Knudsen (2015) that finds the difference between *okay* as receipting and *okay* as a continuer. This article focuses on third position where it finds that the two are contrastive and do different types of receipting. The article can be seen as an example of how to do a collection-based study as suggested by article 1.

The terms *okay1* and *okay2* are from Knudsen and are used as shorthands referring to *okay* with stress on the first syllable and falling pitch vs. stress on the second syllable and rising pitch, respectively. They are equivalent to article 1’s *falling okay* and *rising okay* respectively. The approach in the article is to try to describe the phonetics in detail instead of relying too much on the concept of stress partly because other researchers (not speaking Danish) had trouble following our argument. *Okay*, with its two syllables, may be the most variable of the tokens. The phonetic descriptions of the instances analyzed include intensity and diphthongization, and the Praat pictures with acoustic measurements include segmentations with narrow IPA transcriptions.

The article is based on a much larger dataset than the other articles, in that 20 hours were listened to, in order to register all instances of *okay*. Not all recordings were transcribed, and the instances of *okay* then had to be found through listening before they could be transcribed. *Okay* as part of compound tokens and other uses not in focus for the article were not systematically registered as part of the listening. That is why the calculation on the frequency of *okay* independent of type is based on a 3-hour subset of the whole dataset. The data used is also different from the other articles by including instances of *okay* with same-speaker continuation, while the other articles are looking at freestanding uses. This is because the use is judged the same, in the sense that the initial *okay* is one turn construction unit that does a separate job from following turn construction units.

The calculation of frequency and the details on the various types were included as part of the overall book project on *okay* across languages. The article therefore also includes a breakdown of the

³ The page numbers refer to the numbering in the published version. Those numbers are still available in the version in this thesis.

different types of instances. Since *okay2* in third position is less common than other uses, a larger dataset was also to some extent necessary in order to be able to describe it, and the details are relevant background information. Therefore, the article includes more information on e.g. the etymology of the word and previous non-interactional research.

A coding scheme for various features was actually made, and included auditory judgements and a segmentation of 160 of the instances. However, it is not used in the article. It could mainly be used to show that the diphthongization was not related to any of the potential variations in use that were investigated, but of course related (to some degree) to whether or not that syllable was stressed as expected from general knowledge about stress. However, it was an important factor in finding out that the pitch movement mainly happened on the second syllable or between the two syllables, both for *okay1* and *okay2*.

The analyses describe epistemics and sequence continuation or closure, and frame this in terms of understanding. The prosodic function may be understood as related to sequence management in the sense that *okay2* continues interaction on the topic, but *okay2* may achieve this continuation through what may be called a display of stance of critique or skepticism in third position.

5.3 Article 3: *ja* & *nej*

Article 3 on *ja* and *nej* investigates the two words in second position with rising pitch. The article is based on parts of Sørensen (2018) that was my MA thesis, but is much more systematic and rigorous. It has been submitted for a journal, reviewed and revised for resubmission.

Sørensen (2018) studies the variation of *ja* and *nej* in Danish. It had three main analysis sections: doing positive stance with *ja* and *nej* with rising pitch, projecting disalignment with prolonged *ja* and *nej* and “neutral” *ja* and *nej*. Article 3 is primarily based on the findings on rising pitch, but includes insights from and instances of “neutral” *ja* and *nej* as contrastive cases. The knowledge on prolonged tokens is also important in showing that prolongation is doing different work. Sørensen (2018) is a collection study, but did not systematically go through specific datasets. Article 3 uses a specific set of recordings in which all instances of *ja* and *nej* with rising pitch are registered, but can be said to be informed by more instances than the final collection, because Sørensen (2018) is based on other recordings. For example, phone recordings were not used in the article, in contrast to article 2 and Sørensen (2018). There is still an overlap in data though, and some examples are the same, but the analysis of them has been heavily revised. Sørensen (2018) also contributed with the statistic that the average duration of *ja* is 202 ms and *nej* 246 ms.

An important, but maybe understated discovery of the article is that being in second position was not part of the initial collection criteria. 9 cases of continuers were excluded, but most of the remaining occur in second position. 3 cases are noted as being possibly in a transitional position, but there are no clear instances of *ja* or *nej* with rising pitch in third position, which was not expected. This underlines the sequential importance in the understanding of prosody.

The phonetic focus of the article is explicitly narrowed down to pitch. It is mentioned that those instances of the tokens with a clear rise were included, and that instances were excluded when some modification of voice quality or other feature was too prominent (compared to a potential rise). This is mainly because some of the features may be doing different work, as Sørensen (2018) also showed for prolongation, and it is not clear how such other features may interact with the features under investigation. In fact, the tokens excluded on the basis that they were more laughed than rising, could also fit the description of being affiliative, since the laughed instances of *ja* did mainly occur after

laughed turns and thus do affiliate with a display of affective stance, just as the tokens with rising pitch do. Laughter may then be considered a certain display of affective stance.

It would be possible to collect instances of more tokens that include such variation in voice quality, in order to describe the variation better. However, the practical task of finishing a collection of *ja* with rising pitch would take more time if all the *ja*-tokens with a clear laugh (which are not rare) had to be investigated for a rising pitch pattern. In other words, there would have to be functional collection criteria somewhere. Of course, the mention of elements such as voice quality and other variation should be done in the analysis of the instances in the collection. However, it means that the collection itself is not currently designed to conclude anything on the status of other resources than rising pitch. The article reports on loudness, but can mainly say that the *ja* and *nej* with rising pitch are rarely very soft. The article however does more than the previous articles to describe the prosody of the previous turn.

With this article, the descriptive focus is on the display of affective stance, and affiliation achieved through that. Many of the sequences are however also epistemic in nature, and the displays of stance reveal the information as new. Affiliation and disaffiliation are regarded as achievements of affective stances matching or aligning, but rising pitch is specifically used for that achievement and cannot be described as displaying an affective stance in itself. This is also part of the reason why there are no prototypically ‘deviant’ cases – in Sørensen (2018) there was one deviant case in the sense of *ja* with rising pitch being used in a non-affiliative context, but it was not clear that it had any significant impact in that context (it was also in a phone conversation and not freestanding, and is not in the collection for article 3). The section on the contrastive cases also have a potential shortcoming in the lack of *nej* with level pitch disaffiliating in affiliative contexts.

The article also takes up the concept of function and subfunction (last one is based on Walker 2014). The description can be seen as an argument for the separation of action and stance, because the affiliative function is neither subordinate of one certain action, since both (dis)confirmation, assessment and acceptance is done with affiliating, or a specific word, since it is used on both *ja* and *nej*.

5.4 Article 4: *mm*

Article 4 is a manuscript and takes a closer look at *mm* with a focus on its use as a continuer. Originally, the idea was to study both *mm* and *nå* as continuers, but it turned out that *nå* was less frequent than *mm* in a way that made this difficult.

The collection includes a range of uses of *mm* and focused on those in “continuer-like” contexts, but also including a section on the confirming cases and providing numbers for the others. The study did not include cases of *mm-*, i.e. *mm* with a cut-off/glottal stop. However, they did occur in the data, and they seem to be surprisingly consistent in being used like matching *nej*. There are only very few cases of *mm* in negative contexts where *mm-* could go. Some third position cases were found and a proportion of those are actually congruent with the observation in article 1 that they are delivered by someone who was not otherwise contributing to that sequence.

The data did not include data from Samtalebanken, because much of the data from Samtalebanken has suboptimal audio quality, and it is slightly unpractical to mix corpora as in the other articles. The choice of recordings were focused on getting stories, and includes two-party-conversations and conversations with more than two participants.

The form description includes pitch and duration. The pitch movement is sometimes very subtle compared to article 3 where some rises are octaves. Some cases in the collection have measurable but inaudible perturbations in fundamental frequency that are wider than the audible rise or fall. The relation to the previous turn's prosodic features is not clear from the current set of cases, but this is also due to the lack of knowledge about the specific parts of multi-unit turns and their prosody in Danish, and *mm* can be used in many different cases. Duration was originally collected in order to investigate if there was a threshold for those that I wanted to exclude for being long, but ended up not using length in sorting the collection.

The analytical focus is both on epistemics and affect, where the understanding *mm* has an epistemic function and affective *mm* has an affective or affiliative function. The description mainly focuses on establishing this difference and showing a wide range of phenomena within each function. The description of understanding *mm* does not focus on providing a detailed description of the epistemic roles or asymmetry, but in showing the wide variation of use, it is also making the case that *displaying understanding* may be as precise as necessary. The description of affect focuses on making affiliation relevant and less on the exact naming and description of displays of stance. This is in contrast to article 3 where the nature of the stance – such as being “counter to expectation” or “positive” – is relevant in understanding the phenomena. The stance of the individual cases in article 4 could of course have been described in such detail, and there are clear cases of e.g. “negative” stances being displayed, but at this point, it is not clear that it is important to understanding its use, and would be an analyst's issue rather than member's issue.

Due to the nature of continuers being “non-responses”, the argumentation relies less on deviant cases, since the two functions of *mm* still engender continuation, however at various points during sequences. Therefore, there are no clear contrastive cases as in article 3. It is still a somewhat open question how alike the sequential contexts of the two functions of *mm* are. This ties in with the difference between rising and falling pitch being distributional as opposed to the contrastivity of pitch on *ja* and *nej*.

5.5 Previous research on *nå*

Interactional research on *nå* in Danish goes back to at least Femø Nielsen (2002), in which the function as a marker of changes (not only change-of-state, but also other types of changes) is treated as a primary feature related to a wide range of functions. There is a significant overlap with English *oh*. *Nå* as a continuer is said to have rising pitch, with stress and falling pitch to challenge a previous turn, and generally that *nå* is more backwards-looking the more falling its pitch is (Femø Nielsen 2002: 54–5). The description interprets the attitudinal use of intonation on *nå* (as described in Brink et al. 1991) within the terminology of ‘changes’. Heinemann (2009) also describes how the functions of *nå* overlap with those of *oh*, but differ in that *nå* does not treat answers as inapposite (Heritage 1998).

Steensig et al. (2013) has a section on two types of freestanding *nå*: receipts of information and answers have rising pitch, while continuers have level pitch. Heinemann (2017a) describes *nå* as used for transitioning, while Heinemann (2017b) describes *nå* receipting information as counter to expectation in third position. Both studies are based on different parts of a collection of 300 instances of *nå*. Continuers are not treated separately in those studies, but Heinemann (2017b) studies the equivalent of the answer receipts of Steensig et al. (2013) and shows that they register the answer as counter to expectation, and that this is not the case for unsolicited receipts. This can be seen as the epistemic stance of *nå*. Heinemann (2017b) also studies the display of affective stance on *nå* in relation to

prosody. The instances analyzed in the articles include both *nå* with rising pitch, as in Steensig et al. (2013), and *nå* with level pitch. They are distinct in the way they contribute to the display of affective stance, where *nå* with level pitch is neutral and *nå* with rising pitch is imbued with affective stance of e.g. surprise and/or skepticism. The prosodic features are then not interpreted as marking the epistemic stance of knowledge being counter to expectation, and the two pitch patterns are “not distinctive per se; they merely serve to emphasize the manner in which the answer was counter to expectations” (Heinemann 2017b: 17).

Heinemann (2016b) investigates *nå* with rising-falling pitch and prolongation and describes it as indexing delayed intelligibility. The *nå* is described as “distinctive” in comparison with *nå* with level pitch (Heinemann 2016b: 114), but not as tied to a specific sequential position. Heinemann (2017b: 5) frames *nå* with rising-falling pitch and prolongation as another type of receipt. Heinemann’s (2016b) description of the functions of *nå* with rising-falling pitch and prolongation can be seen as including both epistemic and affective stance, however it is not clear how they can be described separately.

Some of the studies report on the duration of *nå*. Heinemann (2016b: 114) reports on the duration of one case of non-prolonged *nå* and one case of prolonged *nå* and states that the latter is 3-4 times as long as the former. Heinemann (2017b: 7) formulates the general tendencies that *nå* in third position has a duration of 200-300 milliseconds⁴ and that the prolonged *nå* with rising-falling pitch (i.e. Heinemann 2016b) has a duration of up to 700 milliseconds.

6 Discussions

In order to discuss the relationship between function and prosody and to what degree a specific function correlates with a specific prosodic pattern across the tokens, I will compare relevant uses with each other. The various uses are form-function pairs. The form contains various parameters, both segmental and prosodic features. The descriptions vary in prosodic detail, and therefore pitch will be in focus for the comparison.

In the table below, I point out the forms, functions and contexts of the tokens as described in the previous section, in order to point to the relevant axes of comparison.

Token	Function	Pitch contour	Sequential context
<i>ja/nej</i>	affiliative	rising	Second position after displays of affective stance
<i>ja/nej</i>	non-affiliative	level	Second position
<i>okay</i>	continuer	rising	During story-telling
<i>okay</i>	receipt	falling	Third position
<i>okay</i>	unresolved matters	rising	Third position
<i>mm</i>	understanding	rising	During story-telling, epistemic parts
<i>mm</i>	affiliative	falling	During story-telling after displays of affective stance
<i>mm</i>	confirmation	rising	Second position

⁴ The original text report the numbers as “20-30” and “70 milliseconds”, but based on the Praat pictures provided, one digit must be missing.

The tokens *ja* and *nej* are here treated as one. Rising pitch is found on both *ja/nej*, *okay* and *mm*, and falling pitch on *okay* and *mm*. Second position uses are studied for *ja/nej* and *mm*. Use as continuer is studied for *okay* and *mm*. Taking the interactional context seriously means that comparison can only take place within similar sequential positions. This reduces the number of possible comparisons.

6.1 Differences and similarities across the tokens

In this section, I compare those tokens that have comparable pitch contours in comparable sequential positions. I discuss which functions or positions can be seen as the ‘same’, and if they are contrastive. I also consider alternative comparisons along the way that does not have the same pitch contour, but is comparable in other aspects.

6.1.1 *Ja/nej and mm with rising pitch*

Both *ja/nej* and *mm* can have rising pitch in second position. They share function in terms of action, both being used for confirmation with rising pitch. It may even be possible that the pairs *ja/nej* and *mm/mm*- mirror each other in polarity, which would make disconfirmation a function shared between *nej* and *mm*-. However, confirmation cannot be said to be marked by the rising pitch in the case of *ja/nej*, since they can also confirm with falling or level pitch in second position. What the rising pitch adds to this is the affiliative function. In the case of *mm*, the rising pitch can be said to mark confirmation, as I have not found non-rising forms of *mm* confirming. The affiliative character of confirming *mm* has not been in focus, but does not seem to be a prevalent feature, and rising pitch on *mm* may be considered non-affiliative.

Since confirming *ja* can both have rising pitch, with which it achieves affiliation, and level pitch (and I also believe falling pitch may do a separate job, but this has not been investigated) in the same contexts, there is a contrastive system of pitch. This differs from confirming *mm* for which I have not found any contrastive pitch contours.

While they both occur in second position, a larger look at the context may highlight some differences. The preceding context for *ja/nej* with rising pitch includes displays of affective stance, while the preceding request for confirmation being responded to with *mm* is often preliminary to another activity. This highlights the difference between the role of pitch on *ja/nej* and *mm*.

An alternative comparison would be the affiliative function of *ja/nej* with rising pitch and the affiliative function of *mm* with falling pitch. The pitch contours are opposite, but both functions are affiliative in a context with displays of affective stance. It would fit with the description of *ja/nej* with level pitch and *mm* with rising pitch as doing non-affiliative confirmation. However, *mm* with falling pitch is used in affiliative contexts in storytelling while *ja/nej* with rising pitch is used in affiliative contexts in second position.

6.1.2 *Ja/nej and okay with rising pitch*

Ja/nej and *okay* with rising pitch do not occur in the same sequential environments – second vs. third position – but article 1 actually formulates *okay* with rising pitch as affiliative. This comparison may also make sense if we look a bit more generally at the sequence, because affiliative *ja/nej* frequently make “continuation” of e.g. the displays of stance or projected actions possible, while *okay* with rising pitch is in contrast to sequence closure. However, the nature of the stancetaking might be different in the sense that *okay* with rising pitch can display skepticism, while *ja/nej* with rising pitch is mainly positive.

Both *ja/nej* and *okay* has a neutral or non-affiliative contrastive function however, and *ja/nej* with level pitch can be compared to *okay* with falling pitch. In this way, there is both a match in function and contrast across contours, though deviating in sequential position and slightly in form, since *okay* has falling rather than level pitch

6.1.3 *Okay and mm with rising pitch*

Both *okay* and *mm* can function as continuers with rising pitch. But in the case of *mm*, rising pitch further specifies an epistemic subfunction of understanding, which also makes *mm* with rising pitch less continuer-like because it mainly occurs in two-part sequences establishing information early in multi-unit turns. They thus share features or belong to the same class, but a closer look at *okay* with rising pitch could investigate if it is used during the same points of multi-unit turns, but based on the current description and examples, it does not seem to be the case.

The contrast may differ between the two. *Mm* with rising pitch can be said to be in opposition to *mm* with falling pitch as they both are used within storytelling. This is slightly misleading though, as the two varieties of *mm* occur at different points in storytelling. So far only *okay* with rising pitch as a continuer have been described, but as mentioned in article 2, *okay* with falling pitch is also attested in continuer-like positions. It may be possible that there is a contrast between falling pitch and rising pitch on *okay* within story, or it may be that they occur in different parts of multi-unit activities like the varieties of *mm*.

Okay with rising pitch as a continuer could also be compared to *mm* with falling pitch as they share the function of being a continuer. But as noted above, not enough is known about the function of *okay* with rising pitch as a continuer to say more than it is a continuer. However, if we instead focus on *okay* with rising pitch as a receipt in third position, it may be possible to say that there is an affective aspect to its function, just like *mm* with falling pitch. But whereas *mm* with falling pitch picks up on a display of affective stance in the preceding turn, *okay* with rising pitch in third position is often initiating rather than reciprocating stancetaking, and is contrastive with falling pitch.

6.1.4 *Okay and mm with falling pitch*

While *okay* with falling pitch and *mm* occur in different sequential environments, they can both be described as having the function of receipting information, either in response to information elicited through a question or information delivered as part of a storytelling. They differ in how they treat the information however, by *mm* with falling pitch affiliating with an affective stance and *okay* with falling pitch being ‘neutral’, i.e. appropriately receipting when there has not been any display of affective stance.

They also differ in terms of what they contrast with, since *okay* with falling pitch contrasts with rising pitch in the same position, while *mm* with falling pitch has a different distribution than *mm* with rising pitch.

Another possible candidate for comparison would be *okay* with falling pitch and *mm* with rising pitch. They can also both be said to function as receipts for information, and in this case, they can both be called non-affiliative.

Note that *okay* with falling pitch is also observed to occur during tellings, which is more comparable to *mm* with falling pitch, but while there is no description of the function of *okay* with falling pitch in this context, it is likely to still be non-affiliative and differ from *mm* with falling pitch in the same way.

6.1.5 Summary

The comparisons above show how difficult it is to compare functions. The functions often become comparable when they are framed in terms of affiliation. This suggests that pitch contours can be used for affiliative contextualization. This could be supported by the fact that there are neutral or non-affiliative functions contrasting with marked pitch, e.g. *okay* with falling pitch, *ja/nej* with level pitch and *mm* with rising pitch being non-affiliative. Based on these descriptions, it does not seem to be the case that a certain pitch contour is correlated with an affiliative function, but can also be due to how different and varied the affiliative uses are. It points to affiliation as a context where pitch matters however.

6.2 The prosodic inventory as a phonology

In this section, I discuss if it is possible to establish a phonological inventory of pitch contours for response tokens. The articles have investigated at least 3 pitch contours: rising pitch (article 2, 3, 4), level pitch (article 3) and falling pitch (article 2, 4).

An important feature of phonological units however is to be contrastive. In an interactional perspective, a contrast is tied to a specific sequential environment (Persson 2018). Article 2 on *okay* studies the contrast between rising and falling pitch in third position, and article 3 studies the contrast between rising and level pitch on *ja* and *nej* in second position. The contrasts in article 2 and 3 are in different positions and thus difficult to compare, but I have come across instances that suggest that falling pitch on *ja* and *nej* has a function. The three types *rising*, *falling* and *level* seem to be a relevant distinction. However, *okay* may be different from the others in that it has two syllables and therefore different material for the pitch to apply to. It is possible to propose that the falling pitch on *okay* may be considered the same on a phonological level as the level pitch on *ja/nej* cf. the above comparison of their non-affiliative functions, with the bisyllabicity of *okay* as the conditioning factor for the fall. At this moment, it is not clear if it is meaningful to posit any realization rules on the current basis.

It may also be the case that the e.g. rising pitch is different on the different tokens, in the sense that several *ja* and *nej* have very steep rises, while many *mm* with rising pitch are less steep. The average rising pitch on *ja/nej* is 7.9 ST (with the lowest rise being 2.5 ST), but such measurement has not been made for the other tokens. My impression of *mm* is that it is slightly more varied, and that rises or falls are often very small, commonly narrower than the 2.5 ST of the smallest rise in the collection of *ja/nej* with rising pitch. There are also many different types of rises and falls on *okay*. The contours could also differ in the timing of peaks as early, late or related to the specific material in the syllable (e.g. as in Niebuhr 2010). The current data is not fit for such level of detail, and the contours may be affected by the differences in segmental material.

The pitch contours potentially differ in the way they use the speaker's pitch range. In most cases of rising pitch on *ja/nej*, the contour starts around the speaker's mid and ends high. *Mm* is often around the mid of the speaker's range both at the end and start of the contour, but is very varied. The situation across the various uses and pitch contours of *okay* is less clear. It is thus not possible to say if these differences in steepness or the placement in speaker range are constitutive of the distinctions, or due to other phenomena. In the case of *nej*, it is seen that the rising pitch is not negated by the slight fall caused by the stød, and they are both able to occur simultaneously.

Other prosodic features than pitch has been investigated to a less extent. Duration is available for most tokens. The average duration of *ja* is 202 ms and *nej* 246 ms (Sørensen 2018: 28), *mm* 286 ms and *okay* 352 ms (as calculated on the 160 tagged instances). However, these measurements do not

take function into account. Heinemann (2017b: 7) gives the duration of a non-prolonged *nå* as 200-300 ms, which does not seem to be a calculation of the average. Since all the durations are close to each other, it does not clearly contribute to any distinctions, and it might be an effect of the segments of the words. As expected, *okay* with its two syllables has the longest duration. Loudness is not systematically measured or reported on, but the description of *ja/nej* includes a statement on its variation where the main point is that it is rarely very soft. In contrast, it seems that *mm* is rarely loud. This may however be because the lack of a vowel on *mm* and that the mouth is closed during its production makes.

The many varieties point towards a high degree of complexity in the relation between forms and function in interaction, but also supports the idea that the complexity is discoverable when using interactional data and considering the context (Walker 2014).

6.3 *Prosodic patterns in the grammar of response tokens*

Here, I discuss the role of prosodic features for the interactional functions of response tokens in Danish. The articles has pointed towards some contrasts or distinctions, both in form and functions, like the affective distinctions in same position in Couper-Kuhlen (2012). However, the prosody seems to play a different role in these distinctions. In the following, I map out how stance, position and action is organized through prosody.

Prosody may distinguish affiliation. This is what rising pitch is accomplishing on *ja* and *nej* in second position in sequences where stancetaking has been made relevant. It could somewhat be said to be the case for *mm* too, in the sense that falling pitch affiliates and rising pitch aligns, but without being a contrast in the same contexts.

Article 2 on *okay* suggests that the same form – rising pitch – may have the same function as a continuer, in different positions, if we consider operate with a *continuer position*. This system thus works across sequential positions and is slightly different from the contrastive system of level vs. rising pitch on *ja*, but still creates a contrast to falling pitch in third position. This may be comparable to the use of *mm* with rising pitch doing confirmation and displaying understanding. The function of *mm* with rising pitch may be seen as mediated by the position, and one could formulate *mm* with rising pitch as doing confirmation and confirming understanding. But there is still a question of whether it is fully the position, or the preceding turn, that contextualizes the function.

The rising pitch of *ja* and *nej* distinguishing affiliation from non-affiliation is not tied to a specific action. It is used both for confirming and disconfirming *nej*, and may thus still be tied to this action family as relevant in second position. Rising pitch on *okay* can be said to mark an action, if we consider the functions of being a continuer an action, but can also be framed in terms of sequence management or stancetaking in third position.

The above indicates that prosodic patterns shape the accomplishments of response tokens. However, there is no 1:1-mapping of certain prosodic pattern to function. Prosodic patterns that are opposites in form seem to play a role in the emergence of comparable functions however. This can be used as an argument for a system where prosodic varieties can be considered different words, or a system of word-specific phonologies. However, this does not fully take into account the relation to a previous turn that is relevant for some uses.

In summary, this suggests a very complex relationship between the prosodic patterns and their interactional functions. Both position, action, stance and alternative trajectories must be taken into account in the analysis of occurrences of response tokens. The method of Conversation Analysis has

proved giving in the development of the description of functions and their organization, in pointing out these complexities that are far from random.

6.4 Perspectives for future research

The findings and the work with data has also led to several new perspectives or questions for future research. Most clear is the need for the further descriptions of response tokens in other uses than those studies in the articles. This includes the use of *ja* and *nej* as continuers or their prosodic features in third position, *okay* in second position or transitional uses and *mm* in third position. Assessing, transitional and non-freestanding uses also deserve further descriptions.

It also points towards other tokens, such as *jo*, *åh* and compounds, and other varieties of the tokens investigated, such as *mm-*, *ja* and *nej* with falling pitch and tokens with other prosodic features such as breathy or creaky voice.

The studies has also come across other phenomena than tokens. It was not unusual that prosodic features played a role in making a response tokens with a certain prosodic pattern relevant for the interaction, but many of these turns or the role of pitch for them have not been properly studied for Danish yet. This includes partial repeats and the parts of multi-unit turns, besides the prosodic relations between turns. This thesis shows that there will indeed be interesting phenomena to find.

The phonetics and phonology of Danish in general is also worthy of further pursuit from an interactional perspective. Stød occurred in several cases as part of turns with marked pitch, and surprisingly often in turn-final position. Duration and rhythm are also expected to fulfill interactional functions and participate in the grammar of response tokens. The perceptual salience of the various features has also not been in focus, and it may be the case that some of prosodic features could be specified further.

7 Conclusion

This project has aimed to investigate the role of prosodic features in the interactional functions of the response tokens *ja* ‘yes’, *nej* ‘no’, *nå*, approx. ‘oh’, *okay* and *mm* in Danish. The purpose has been to map out how prosodic features are distributed across the uses of these tokens, and if they correlate with specific functions, such as action or stance. This is studied in four articles describing a range of sequential contexts in which the tokens achieve certain accomplishments and prosody plays a role. This report has compared the descriptions with each other. In conclusion, it does not seem to be the case that certain prosodic patterns are correlated strictly with specific functions. Instead, the system is full of interesting complexities. However, prosodic features do indeed play a role in the system of response tokens, and this system can be considered a grammar.

For this project, I have collected a large number of response tokens in Danish talk-in-interaction. Most of the data is from everyday interaction, and it covers a wide range of Danish language use. These tokens has been investigated for their prosodic features. The focus was initially any feature that could be important to the understanding of interactional accomplishments, including pitch, duration and voice quality, and no other parameter was excluded. For the uses that made it into the articles, mainly pitch contours were in focus. The investigation and description of the prosodic features were informed by both auditory and acoustic measurements, and has gained from the combination of the two approaches.

The specific studies that make up the project has focused on certain varieties of *ja*, *nej*, *okay* and *mm*. They are studied in specific sequential environments, and a detailed description of various uses

has been made. These descriptions show how prosodic features matter when people interact, not only for the individual turn, but also across turns.

These uses have been compared and discussed as a phonological and grammatical system. The comparison shows that many of the uses are not that comparable, and rising pitch on *ja*, *nej*, *okay* and *mm* does not have one specific function that it always marks. However, pitch is an important factor in understanding the grammar of response tokens. The conclusion is essentially that these uses do not occur in a vacuum or at random. The system contains many contrasts and potential relations between and across elements.

The conclusion that no simple mapping between form and function occurs supports the conversation analytic perspective that linguistic material and its features, including prosodic features, must be understood through the close study of turns in interaction (Walker 2014).

The conclusions support Reber (2012) in highlighting the importance of prosody for the display of affective stances, and extends this to Danish by considering mostly lexicalized response tokens in relation to the specific actions and sequences that they are regularly employed for. It also follows Reber (2012) in showing that prosodic patterns are often interactionally and functionally different. The variation in Danish response tokens suggests that the distinction between lexicalized and non-lexicalized linguistic material is not clear-cut (Dingemanse 2020).

The studies also suggest the usefulness of interactional concepts related to action, position and stance in the description of parts of the grammar of a language and contributes by refining them. The findings suggest that the distinction between action and stance is useful in characterizing different parameters of functions. The terminology used and argued for in this project is also helpful in understanding the interaction between lexis and prosody or interactional function.

This project also points towards potential future research in the use of prosodic features for other functions, other uses of response tokens and the relation between various linguistic features and functions in interaction.

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Articles

The following pages contain the articles that also form part of this thesis. Each have an introductory page with title, biographic information and a description of its status outside of this thesis.

Article 1

Danish dialogue particles in an interactional perspective

Published in *Scandinavian Studies in Language* and open access.
Co-authored with Jakob Steensig. The authors contributed equally.

Steensig, Jakob & Søren Sandager Sørensen. 2019. Danish dialogue particles in an interactional perspective. *Scandinavian Studies in Language* 10(1). 63–84. <https://doi.org/10.7146/sss.v10i1.114671>.

Article 2

Rising OKAY in third position in Danish talk-in-interaction

The article is in press and will be part of a book project on *okay*. The version is final (after reviews), but before corrections in the process.

Co-authored with Jakob Steensig. The authors contributed equally.

Sørensen, Søren Sandager & Jakob Steensig. In press. Rising OKAY in Third Position in Danish Talk-in-Interaction. In Emma Betz, Arnulf Depperman, Lorenza Mondada & Marja-Leena Sorjonen (eds.), *OKAY across languages: Toward a comparative approach to its use in talk-in-interaction*. Amsterdam/Philadelphia: John Benjamins.

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Article 3

Affiliating in second position: Response tokens with rising pitch in Danish

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Article 4

Mm – just a continuer? Understanding vs. affective mm

Draft manuscript.

Sørensen, Søren Sandager. Manuscript. *Mm – just a continuer? Understanding vs. affective mm.*

Some work is required before it can become something.