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# Thinking things in German versus Swedish

*A cross-linguistic comparison of verbs of thinking  
in two typologically related languages.*

Yannick Frommherz

Centre for Languages and Literature  
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Supervisor  
Professor Marianne Gullberg

## Abstract

Against the backdrop of universality proposals claiming that all the world's languages share the way they conceptualise and express THINKING, this study investigates verbs of thinking in German and Swedish in a comparative perspective. In particular, it examines semantic specificity in verbs of thinking (the restricted availability of only one specific verb in a certain context), and the potential effect of two constraints (intersubjective verifiability and subjectivity). A contextualised choice task was conducted in which German ( $n = 30$ ) and Swedish ( $n = 30$ ) native speakers had to indicate which out four verb(s) (*denken*, *glauben*, *meinen*, *finden*, and *tänka*, *tro*, *tycka*, *mena*) are meaningful in a certain context. The results suggest that the German domain of verbs of thinking is less semantically specific than the Swedish one. Moreover, the data indicates that both languages are sensitive to the subjectivity constraint, that is, they exclusively allow for one specific verb (*finden/tycka*) in contexts where the verb of thinking frames an utterance expressing a subjective opinion/assessment/evaluation. However, in contexts where the verb of thinking frames a statement that can be tested for its truth by other interactants (intersubjective verifiability), only Swedish appears to show semantic specificity in exclusively allowing for *tro*. German does not appear to be sensitive to this constraint since both *denken*, *glauben* and *meinen* are available. The finding that even typologically related languages show striking differences in verbs of thinking casts doubt on universality proposals in the domain of verbs of thinking.

*Keywords:* Thinking, Verbs of thinking, Semantic specificity, Cross-linguistic comparison, German, Swedish, Contextualised choice task.

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## **Abbreviations**

DOT	Semantic domain(s) of verbs of thinking
DWDS	Digitales Wörterbuch der deutschen Sprache
ES	Epistemic stance
NSM	Natural Semantic Metalanguage
SAOB	Svenska Akademiens Ordbok
VOT	Verb(s) of thinking

## 1. Introduction

Thinking is what makes us human. Unsurprisingly, cognitive activities/states are frequently expressed through what has been termed ‘verbs of thinking’ (henceforth *VOT*; Viberg, 2004; Goddard & Karlsson, 2003). Like for many other semantic domains, it has been argued that the concept of THINKING is universal (Goddard, 2003; Wierzbicka, 1998, 2009), that is, that all the world’s languages essentially share the way they conceptualise and express THINKING.<sup>1</sup> However, contrastive studies have shown that there is considerable variation in how languages carve up semantic space in this domain (Goddard & Karlsson, 2003; Voss, 2009). Scandinavian languages and especially Swedish have been argued to make a case against the initial proposal of the universality of THINKING as they strictly distinguish between three ‘modes of thinking’ (*tänka*, *tycka*, *tro*, for Swedish) that are sometimes argued to be equally basic (Viberg, 2004, p. 151).

VOT owe their importance not only to the fact that they express crucial activities/states in our minds. They are also essential pragmatic resources in everyday interaction. For example, speakers may use VOT to express epistemic stance in relation to a proposition and/or other interactants (Aijmer, 1997a, 1997b; Karlsson, 2006; Viberg, 1980; Zeschel, 2017). The German VOT *denken* and *finden*, for instance, convey different degrees of certainty regarding the truth of the proposition they frame.

Although the universality claims are big, and VOT are undoubtedly very relevant both semantically and pragmatically, there has not been a lot of research into this field (G. B. Palmer, 2003, p. 98). Especially the lack of empirical, cross-linguistic studies is noticeable. Therefore, the present study attempts to shed some light on the four most prominent VOT in German (*denken* ‘think’; *glauben* ‘believe’, ‘think’; *meinen* ‘mean’, ‘opine’, ‘think’; *finden* ‘find’, ‘feel’, ‘think’) and Swedish (*tänka* ‘think’; *tro* ‘believe’, ‘think’; *tycka* ‘find’, ‘feel’, ‘think’; *mena* ‘mean’, ‘opine’, ‘think’). Despite their typological similarity, the two languages exhibit interesting differences regarding these VOT. This observation is in line with Majid, Gullberg, van Staden and Bowerman (2007) who compared cutting/breaking events in Germanic languages and found

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<sup>1</sup> As is customary, CONCEPTS are capitalised and *concrete linguistic expressions* (for CONCEPTS) are italicised and lower-case (Croft & Cruse, 2004, p. 7).



that the corresponding semantic categories can be very different even in closely related languages.

The aim of this study is to explore both commonalities and differences between German and Swedish VOT. More concretely, the study investigates semantic specificity in VOT. Semantic specificity refers to the restricted availability of only one VOT in a certain context. It probes two specific constraints to which German and Swedish seem to be sensitive to different degrees, and examines whether these constraints have an impact on semantic specificity in German and Swedish VOT. Moreover, the study explores specifically which VOT are sensitive to these two constraints. For that purpose, an experiment has been conducted where native speakers of both languages had to indicate which out of the four tested VOT are meaningful in a given context. Their responses (ranging from 0-4 meaningful VOT) were used to gauge semantic specificity in VOT. By looking at how two closely related languages carve up the semantic domain of verbs of thinking (henceforth *DOT*), this empirical study may also contribute to the discussion about whether the given domain is structured by universal guiding principles, or not.

## 2. The Domain of Verbs of Thinking

Thinking is an everyday activity that occupies our minds a good deal of our conscious time. It happens inside our brains, which is why it is not a simple task to draw the line between different types of thinking and classify them objectively (Fortescue, 2001, p. 16). However, since we as communicative beings frequently share our thinking, we do have a way to access them.

Before specifically discussing the German and Swedish VOT investigated in this study, three current attempts at structuring the DOT in the world's languages are outlined: Wierzbicka's (1998) and Goddard's (2008) proposal for the universality of THINK, Fortescue's (2001) division of the DOT into "three natural seams", and Voss's (2009) 'mental concepts concept'. The three models differ regarding the question of whether the DOT is structured by universal guiding principles, or not. Their positions will be compared in 2.4.

### 2.1 The Universality of THINKING

The idea that all the world's languages share at least a minimum of basic features in their concepts of THINKING has been formulated by the Natural Semantic Metalanguage framework (NSM). The NSM claims to be able to decompose all meaning units in all languages into a small set of so-called universal semantic primes (Goddard, 2008; Wierzbicka, 1998, 2009). Primes are indivisible and "indefinable" units of meaning found in all the world's languages (Goddard, 2003, p. 2). Currently, there are 63 primes, each with its own "conceptual syntax" specifying how it can interact syntactically (Goddard, 2003, p. 3). In addition to SAY, HAPPEN or BECAUSE, THINK is also argued to be a prime (Wierzbicka, 2009; note that in the NSM tradition, primes are referred to in their capitalised infinitive form). According to Wierzbicka (1998, p. 298), all the world's languages have an expression for 'think'. In all languages, that so-called exponent of the THINK prime should work within the frames stated in its conceptual syntax presented in (1):

(1) *Conceptual syntax of THINK.*

X thinks about Y [topic of thought]

- a. X thinks something (good/bad) about Y [complement]
- b. X thinks like this: — [quasi-quotational complement]
- c. X thinks that [——] [propositional complement]

Adapted from Goddard (2003, p. 3).

In its simplest use, the exponent of THINK should be able to express that someone thinks about something/someone, for example, *Mary thinks about Jane* in English. In the more complex frames, one can think something about something/someone as in *Mary thinks bad things about Jane* (a). One should also be able use the THINK exponent with a quasi-quotational statement as in (b): *Mary thinks “Jane doesn’t like me.* Lastly, the THINK exponent should take a propositional complement (c), as in *Mary thinks that Jane is unfriendly.*

This conceptual syntax soon proved to be formulated too broadly. Looking at the exponents of the proposed prime in Swedish and other Scandinavian languages, Goddard and Karlsson concede that THINK as a prime is “challenged” (Goddard & Karlsson, 2003, p. 1). Whereas English *think* is used in a variety of senses, the authors find that Scandinavian languages have “several basic-level ‘verbs of thinking’”, instead (Goddard & Karlsson, 2004, p. 1). Concretely, they name *tänka*, *tro* and *tycka* for Swedish. They still identify *tänka* as the “most basic verb” among the Swedish VOT (Goddard & Karlsson, 2003, p. 2), adducing morphological and phraseological productivity as evidence.

Having argued that only *tänka* can possibly be the Swedish exponent for THINK, they are confronted with the fact that *tänka* cannot normally take a propositional complement as it should according to the conceptual syntax in (1). This is because the two other “basic-level verbs”, *tro* and *tycka*, take over this frame. For instance, the English example for the propositional complement frame can be translated to *Mary tycker att Jane är ovänlig*, but not in any straightforward context to *\*Mary tänker att Jane är ovänlig*. However, Goddard and Karlsson find that *tänka* does work in this construction as long as it verbalises a “temporally-grounded concrete thought” (2003, p. 7). On the basis of this evidence they argue for constraining the conceptual syntax of THINK, acknowledging that earlier proposals were biased by how English carves up its DOT (Goddard & Karlsson, 2003, p. 7).

When a language, like Swedish, disposes of one or more VOT, apart from the THINK exponent, this will have an impact on the usage range of that exponent (Goddard, 2003, p. 8). In Swedish, *tänka*, has to share the semantic space with (at least) two other verbs. Goddard finds the same effect, although attenuated, for German, where *denken* (the proposed THINK exponent in German) has to compete with *glauben*, another crucial German VOT (Goddard, 2003, p. 8). Interestingly, Goddard also lists *finden* and *meinen* as German “language-specific specialised verbs of thinking” (2003, p. 7), but does not mention them when discussing how other VOT compete over the semantic space ‘reserved’ for the THINK exponent *denken*. He might nevertheless be right that Swedish distinguishes between VOT in a more complex manner.

In any case, the evolution of the proposed THINK prime indicates one crucial weakness of the NSM approach: It is theoretically oriented, relying at least initially on the introspection of mostly English speakers (G. B. Palmer, 2003, p. 102). Goddard (2003) claims that the THINK prime is empirically corroborated in “a wide range of languages” (p. 2), but he fails to point out which empirical methods lead to this conclusion. Irrespective of that, the exercise with Scandinavian languages demonstrates that as soon as one ‘immerses’ into the semantic space of any language, one may find things that are hard to discover looking through the lenses of a theoretical framework that is heavily influenced by one language, English. Partly for that reason, Palmer expresses “uncertainty” as to whether “THINK as we know it in English is in fact a semantic universal” (G. B. Palmer, 2003, p. 98). Goddard (2003), on the other hand, maintains that THINK “has a firm claim to the status of a basic and universal linguistic concept”, “but the huge [cross-linguistic] variability greatly overshadows the tiny core of universality” (p. 4).

## 2.2 Three Natural Seams in Our Conceptualisation of Thinking

Fortescue (2001) provides a different typology of verbal expressions for activities/states of thinking. Examining dictionary definitions and etymologies in 73 languages, he describes huge variation with some languages showing fine-grained semantic distinctions, and others covering the whole domain with just one verb like English does with *think* (Fortescue, 2001, p. 18-20). Fortescue distinguishes three types of thinking. These three “natural ‘seams’ in our conceptualization of this domain” (Fortescue, 2001, p. 31) are presented in (2):

(2) *Three natural seams in the conceptualisation of thinking.*

- 1) Thinking as believing
- 2) Thinking as considering/judging
- 3) Thinking as unspecified/general mental activity

From Fortescue (2001, p. 28).

Verbs belonging to the first type often exhibit common etymological roots with words denoting ‘true’/‘truth’, which is opaquely observable between the cognates Danish/Swedish *tro* and English *true* (Fortescue, 2001, p. 28). This semantic overlap is revealing because one key criterion in delineating Swedish *tro* from its competing VOT is *verifiability*, that is, whether a framed proposition can be checked for whether it is *true* or not (see 4.2). Verbs associated with the second type often show polysemy with ‘finding’, as does German *finden* (Fortescue, 2001, p. 28). As will become clear in 4.1-3, Fortescue’s typology accounts well for the Swedish VOT, where each verb can be mapped onto one of the three seams (in that order in (2): *tro*, *tycka*, *tänka*). This may have to do with the fact that Copenhagen-based Fortescue builds many of his claims on Danish, a language closely resembling Swedish in how it carves up its DOT.

Fortescue concludes that these three ‘natural seams’ in our conceptualisation of thinking are “the ‘givens’ of the human condition” (Fortescue, 2001, p. 38), acknowledging simultaneously great cross-linguistic variation. The circumstance that also Fortescue investigates universal tendencies in VOT from an English perspective is, again, criticised by G. B. Palmer. Regarding Fortescue’s study, he diagnoses “considerable linguacentrism” (2003, p. 100). The fact that Fortescue bases his investigation on dictionary entries rather than on authentic language data or native speaker judgements is not supportive of his claims, either.

Interestingly, the distinction between analytical and contemplative thinking (i.e., between seams 3/2 in (2)) is empirically corroborated by Lee (2003) even for English, which notoriously uses *think* for both mental activities. By conducting a grouping task of English mental predicates, Lee found that the two types of thinking are consequently distinguished (2003, p. 247).

### 2.3 A Classification Model Along the Lines of Dynamicity and Agentivity

A somewhat different model comes from Voss (2009) who presents an encompassing overview of mental verbs in the world's languages (*mental verbs* refers to a broader category of verbs than *VOT*). Adopting an onomasiological perspective, she first develops the 'mental concepts concept' to investigate how languages express concepts of mental activities, processes and states (Voss, 2009, p. 179). Due to the fact that mental verbs denote *internal* activities/processes/states, Voss is forced, in defiance of her onomasiological approach, to set up her model based on the verbs, that is, on the expressions, not the concepts (Voss, 2009). She proposes two criteria to classify mental verbs: Firstly, she uses the Aristotelian categories of static versus dynamic. Secondly, she opts for the distinction between agentive versus non-agentive. This results in the three categories of mental verbs presented in Table (1):

Table 1. *Classification of mental verbs using dynamicity and agentivity.*

–	static	dynamic
agentive	verbs expressing mental states	verbs expressing mental activities
non-agentive	–	verbs expressing mental processes

Adapted from Voss (2009, p. 182).

For VOT, only static-agentive concepts like BELIEVING and dynamic-agentive concepts like DELIBERATING are relevant. Non-agentive processes like FORGETTING are not of interest since VOT refer to mental activities/states over which individuals can have conscious control.

Having created this model, Voss then classifies mental verbs of 246 languages by examining dictionaries, linguistic literature as well as by consulting informants (Voss, 2009, p. 190). The strength of this model lies in its broadness. It can be applied to highly distinct languages. The semantic criteria [ $\pm$ DYNAMIC] and [ $\pm$ AGENTIVE] seem clear-cut at first sight, but looking at Voss's own results for Scandinavian languages they produce interesting inconsistencies (see 4.3). As will become clear in 3.1-5, even German VOT are not easily divided into Voss's categories. Voss's conclusion from applying her model to a wide range of languages is that the field of mental verbs is very heterogenous (Voss, 2009, p. 247). Even Voss's study is initially conceived from one language, German, the risk of which she openly discusses (Voss, 2009, p. 188).

## 2.4 How Universal Is THINKING Then?

The three models differ regarding the question of whether THINKING is a universal concept, or, as NSM researchers would say, whether THINK is a universal prime. Goddard and Karlsson (2003) first find the THINK prime challenged in the face of Swedish distinguishing between three VOT. Declaring *tänka* as the Swedish exponent of THINK, they constrain the universal conceptual syntax of THINK to make it fit the semantic scope of *tänka*. Although they recognise *tycka* and *tro* as “basic-level ‘verbs of thinking’” (Goddard & Karlsson, 2003, p. 1, my underlining), failing to explicate this characterisation, only *tänka* has a place in the universally-oriented NSM. *Tycka* and *tro*, in contrast, are argued to be explicable by means of other primes.

As a counterproposal to the DOT being structured around the THINK prime, Fortescue suggests the idea of a “polycentric” ‘conceptual landscape’ (Fortescue, 2001, p. 32). Rather than being fixated on *one* conceptual core, his idea allows for multiple conceptual centra which are “related by ‘family resemblance’” (Fortescue, 2001, p. 32). This proposal shows greater adaptability to the diverse conceptualisation patterns found across the world’s languages, and not least to the Swedish case. Fortescue must, however, concede that he cannot see any family resemblance gluing these distinct types of thinking together, other than “the core notion of ‘thinking as mental activity’ itself” (Fortescue, 2001, p. 32). Disregarding the question by how many centra the universal DOT is structured, Fortescue shares Goddard (2003) and Wierzbicka’s (1998, 2009) position that some aspects of the DOT are universally given (Fortescue, 2001, p. 37).

Finally, Voss appreciates the THINK prime as a point of reference in the cross-linguistic investigation of mental verbs (Voss, 2009, p. 149). She stresses, however, that in current publications there is a consensus that there is not *one* absolute division of the DOT. Rather, there are culture-specific patterns (Voss, 2009, p. 181). This view is supported by her own finding that there is a multitude of ways to express mental activities/processes/states, some of which are found more frequently, others being used only marginally (Voss, 2009, p. 251).

Concluding, the NSM researchers and Fortescue share the view that the DOT is universally structured. At the same time, they acknowledge cross-linguistic variation. The fact that both universality proposals are conceived from the English language advises some reservation regarding their claims. Voss, who investigated the largest corpus, did not find any universal tendencies in mental verbs (but she did not set out to do that, either).

The issue of the universality of THINKING needs further exploration. While the present study does not directly test the outlined universality proposals (in fact, it may not be possible to draw testable predictions from them), it can contribute to the topic by examining and comparing VOT of German and Swedish with an experimental method, showing that even between closely related languages striking differences may exist.

## 2.5 Restricting the Scope to Four Verbs

To make the examination and comparison of the German and Swedish VOT manageable, this study confines itself to the four most prominent VOT in each language (Karlsson, 2006, p. 55; Viberg, 2004, p. 124; Zeschel, 2017, p. 249). The verbs are:

*denken* ('think')

*tänka* ('think')

*glauben* ('think', 'believe')

*tro* ('think', 'believe')

*meinen* ('think', 'mean', 'opine')

*tycka* ('think', 'find', 'feel')

*finden* ('think', 'find', 'feel')

*mena* ('think', 'mean', 'opine')

*Note: the English translations are not exhaustive; often 'think' is the most natural translation option. In the following, VOT are only translated into English in concrete examples.*

Swedish *mena* is not traditionally regarded as a part of the Swedish VOT (or, at least it is not part of the 'verbal complex' *tänka-tro-tycka*). However, *mena* is closely related to the other Swedish VOT (see 4.3-4; Voss, 2009, p. 447). It was included because the experiment required an equal number of verbs in both languages (see 8).

The focus will be further restricted to specific meanings of these verbs in their respective subsections.



### 3. Verbs of Thinking in German

In the following, the four German VOT are discussed, drawing on relevant literature and dictionaries. Before that, the verbs are approached from the concepts underlying them, relying on Voss's classification. Her entire study is based on the German 'conceptual landscape', after all.

#### 3.1 Concepts Underlying *Denken*, *Glauben*, *Meinen* and *Finden*

Voss (2009) categorises the relevant concepts into mental activities ([+DYNAMIC], [+AGENTIVE]) and mental states ([−DYNAMIC], [+AGENTIVE], see 2.3). She then lists different core and peripheral concepts, defines them and adds potential verbal expressions. For the mental activities, Voss registers, among others, the core concept DENKEN ('THINKING'/ 'COGITATING'; for clarity of reference, the German labels will be used to refer to Voss's concepts). DENKEN is defined as 'to keep something intentionally in one's consciousness' (Voss, 2009, p. 185). *Denken* is listed as the only verbal expression for this concept in German.

Among the peripheral concepts pertaining to the mental activities, URTEILEN ('JUDGING') and VERMUTEN ('SUPPOSING'/'ASSUMING') are of interest. URTEILEN is defined as 'to form an opinion based on an impression or on a reflection about something' (Voss, 2009, p. 186). As expressions of this concept, *erachten* or *befinden* (both 'deem') are named. Interestingly, prefix-less *finden* is not listed. *Finden* is found under the concept VERMUTEN, instead. VERMUTEN is defined as 'to reckon something to be true or existent without verification' (Voss, 2009, p. 186).

In terms of mental states, the peripheral concept MEINEN ('DEEMING', 'OPINING') is of interest. It is defined as 'to deem something right or possible or probable' (Voss, 2009, p. 188) and unites the expressions: *ansehen* ('regard'), *halten für* ('deem'), *glauben* and *meinen*.

In sum, in Voss's model, only *denken* and *meinen* have their 'own' corresponding concepts, *finden* and *glauben* are subsumed under distinct concepts. The classification gives a good overview of the different concepts in the German DOT. As will be demonstrated hereafter, when it comes to the verbal expressions for these concepts, it does, however, not seem to reflect the enormous polysemy found in German VOT. *Finden*, for example, may well be used to express URTEILEN and MEINEN, *glauben* and *meinen* can refer to URTEILEN, and *denken* seems so polysemous that it can express all these concepts. Voss admits that one verb may express

different concepts and points to the importance of context in determining the concept that an instance of a verb refers to (2009, p. 247).

### 3.2 Denken

For *denken*, the Digitales Wörterbuch der deutschen Sprache ('Digital dictionary of the German language', DWDS; 2019<sup>2</sup>) lists nine meanings. These meanings are presented including an approximate English definition and a German example in Table 2. The entries in Duden online (2019), another major German dictionary, are similar to the meanings in Table 2.

Table 2. Meanings of 'denken'.

Meaning <sub>x</sub>	German definition	English definition	German example
<i>denken</i> <sub>1</sub>	Verstandesarbeit leisten, etwas überlegen	'to work with one's brain', 'to cogitate'	<i>Dieses Ereignis gibt sehr zu denken.</i>
<i>denken</i> <sub>2</sub>	gesinnt sein	'to be minded in a certain way'	<i>Sie denkt kleinbürgerlich.</i>
<i>denken</i> <sub>3</sub>	beabsichtigen, im Sinne haben	'to intend to do something'	<i>Ich denke, ihn zu überraschen.</i>
<i>denken</i> <sub>4</sub>	etwas <u>meinen</u> , <u>glauben</u>	'to be of the opinion', 'to believe'	<i>Er denkt, mich verdrängen zu können.</i>
<i>denken</i> <sub>5</sub>	sich geistig in etwas versetzen	'to put oneself in somebody's place'	<i>Denke dich in meine Lage!</i>
<i>denken</i> <sub>6</sub>	sich jemanden, etwas (als X) vorstellen	'to image somebody/something (as X)'	<i>Er denkt sie sich als seine Frau.</i>
<i>denken</i> <sub>7</sub>	sich an jemanden, etwas erinnern	'to remember somebody/something'	<i>Denke an dein Versprechen.</i>
<i>denken</i> <sub>8</sub>	etwas, jemanden in den Mittelpunkt seines Strebens stellen	'to think of nothing else than something/ somebody'	<i>Er denkt nur an seine Familie.</i>
<i>denken</i> <sub>9</sub>	eine <u>Meinung</u> von etwas, jemandem haben; über etwas, jemanden <u>urteilen</u>	'to have an opinion about something/ somebody', 'to judge something/somebody'	<i>Wie denken Sie über den Fall?</i>

Adapted from DWDS (2019, my underlining).

<sup>2</sup> All links and dates of retrieval to all online dictionary entries are found in References. Neither DWDS nor Duden online specify a year of publication. Therefore, the year of retrieval, 2019, is used. Also, the dictionaries are referred to by their names (*DWDS*, *Duden online*) rather than by their editors (Berlin-Brandenburgische Akademie der Wissenschaften, Wissenschaftlicher Rat der Dudenredaktion, respectively).

What becomes visible in Table 2 is that *denken* is very polysemous. The meanings *denken*<sub>1, 4, 9</sub> approximately correspond to Fortescue's three seams (*denken*<sub>1</sub> = seam 3, *denken*<sub>4</sub> = seam 1, *denken*<sub>9</sub> = seam 2, see 2.2). The second seam, 'thinking as considering/judging', is not primarily *denken*'s 'territory', though, as will become clear in 3.5. Also, it is the same three meanings *denken*<sub>1, 4, 9</sub> that can express Voss's concepts DENKEN, VERMUTEN, URTEILEN (in that order). The issue with MEINEN is trickier, because if *denken* is to express this concept it has to be conceptualised in a static way. The meaning in line for this is *denken*<sub>4</sub>. As a matter of fact, in the example for *denken*<sub>4</sub> in Table 2 ('He thinks he can oust me'), it seems like *denkt* ('thinks') expresses a static belief rather than an ongoing mental activity leading 'him' to the conclusion that 'he' can oust the speaker. Therefore, *denken* seems to be able to express static MEINEN as well. Ultimately, it seems like *denken* can either foreground a dynamic activity or a state, depending on how it is contextually framed.

Another observation is that *denken* is defined in terms of two of the other three VOT: *glauben* and *meinen* (see underlinings in Table 2). There seems to be considerable semantic overlap between these three verbs. The fact that *denken* can express both *glauben* and *meinen* is very interesting because they strongly differ regarding epistemic stance (for elaboration see 6.2).

### 3.3 *Glauben*

For *glauben*, both DWDS (2019) and Duden online (2019) list three approximately identical meanings. Table 3 gives an overview of them, based on DWDS:

Table 3. *Meanings of 'glauben'.*

Meaning <sub>x</sub>	German definition	English definition	German example
<i>glauben</i> <sub>1</sub>	etwas vermuten, annehmen, der Meinung sein	'to suppose something', 'to be of the opinion'	<i>Er glaubte, sie gesehen zu haben.</i>
<i>glauben</i> <sub>2</sub>	Dinge, die objektiv nicht bewiesen sind, aufgrund innerer Überzeugung für wahr halten	'to deem things that are not objectively proven true, based on an inner conviction'	<i>an das Gute im Menschen glauben</i>
<i>glauben</i> <sub>3</sub>	eine religiöse Überzeugung haben	'to have a religious conviction'	<i>an die Auferstehung glauben</i>

Adapted from DWDS (2019).

*Glauben*<sub>2</sub> and *glauben*<sub>3</sub> are unproblematic meanings as they can be distinguished syntactically from *glauben*<sub>1</sub> (they mostly take a prepositional complement, see examples in Table 3). Also,

they have their direct equivalents in Swedish (see 4.2). The interesting meaning is *glauben*<sub>1</sub> which strongly reminds of *denken*<sub>4</sub>. It proves difficult to draw a line between them, and the dictionaries are of little help in this regard. In many cases, and also in the examples for *glauben*<sub>1</sub> and *denken*<sub>4</sub>, the two verbs are interchangeable without much of a meaning change. However, there are cases where a replacement of *glauben*<sub>1</sub> by *denken*<sub>4</sub> does not seem meaningful, as for example in *Ich glaube/denke ich werde ohnmächtig!* ('I think I am about to faint'). The question is what differentiates *glauben*<sub>1</sub> from *denken*<sub>4</sub>. The given example suggests that *glauben*<sub>1</sub> might be favoured if what is at stake is a direct bodily experience that is felt rather than thought. This promising lead can, however, not be pursued here for reasons of space.

Concerning Voss's concepts, *glauben* can certainly express static MEINEN. This applies in particular to *glauben*<sub>2,3</sub>, but also to many cases of *glauben*<sub>1</sub>. However, it also seems possible to use *glauben* in a dynamic sense, namely, when it serves to express opinions that speakers have arrived at through (dynamic) deliberation. In *Ich glaube, es ist besser, wenn wir nicht in Gold investieren* ('I think it is better not to invest in gold'), for example, *glaube*, seems to express dynamic URTEILEN. Again, the conceptualisation of *glauben* as something dynamic, static or in between clearly depends on how it is contextually embedded.

### 3.4 Meinen

For *meinen*, both DWDS (2019) and Duden online (2019) list five meanings, where four meanings correspond to each other. Table 4 presents the meanings from Duden.

In the context of VOT, only *meinen*<sub>1</sub> is of interest: It clearly shows semantic overlap with *denken*<sub>9</sub>, which becomes evident by comparing the examples in Tables 4 and 2, respectively: *Was meinst du zu dieser Sache?* ('What do you [informal] think about this issue?') and *Wie denken Sie über den Fall?* ('What do you [formal] think about this case?'). It proves difficult to describe the semantic difference between the two verbs in this use, but, possibly, Voss's claim that *denken* primarily represents dynamic DENKEN, while *meinen* expresses static MEINEN gets at the tiny semantic divide: It does seem like the sentence featuring *denken* emphasises dynamic mental activity, whereas *meinst* foregrounds the static opinion that one has about the issue.

Table 4. Meanings of ‘meinen’

Meaning <sub>x</sub>	German definition	English definition	German example
<i>meinen</i> <sub>1</sub>	(in Bezug auf jemanden, etwas) eine bestimmte Ansicht, Meinung vertreten	‘to hold a certain view, opinion in relation to somebody, something’	<i>Was meinst du zu dieser Sache?</i>
<i>meinen</i> <sub>2</sub>	(bei einer Äußerung, Handlung) etwas, jemanden im Sinn, im Auge haben	‘to have somebody, something in mind when uttering, doing something’	<i>Meinen Sie mich?</i>
<i>meinen</i> <sub>3</sub>	im Hinblick auf etwas [...] einer bestimmten Überzeugung sein; wähnen	‘to have a certain conviction in regard to something’, ‘to (wrongly) consider oneself something’	<i>sich im Recht meinen</i>
<i>meinen</i> <sub>4</sub>	etwas mit einer bestimmten Absicht, Einstellung sagen oder tun	‘to say or do something with a certain intention or attitude’	<i>etwas ironisch meinen</i>
<i>meinen</i> <sub>5</sub>	sagen	‘to say’	<i>„Dann wollen wir mal beginnen“, meinte er.</i>

Adapted from Duden online (2019).

*Meinen*<sub>1</sub> also displays semantic overlap with *denken*<sub>4</sub>, as evidenced by an example for *meinen*<sub>1</sub> in Duden online (2019, parentheses in original): *er meint (denkt) immer, alle müssten sich nach ihm richten* (non-literal translation: ‘he constantly thinks, everyone has to dance to his piping’). Another example from Duden online (2019, parentheses in original), highlights an additional interconnection between the verbs at hand: *meinen (glauben) Sie, das hätte keiner gemerkt?* (‘Do you think no one noticed this?’). Here, a clear overlap with *glauben*<sub>1</sub> is observable. This is further supported by a sub-meaning under *meinen*<sub>1</sub>, found in DWDS (2019), circumscribed as “etwas annehmen, vermuten, glauben” (‘suppose, assume, believe something’). DWDS lists an interesting example for this: *ich meinte, ein Geräusch zu hören* (‘I thought I heard a noise’) which strongly reminds of a specific meaning of Swedish *tycka*, the one coined “osäkerhet vid direkt förnimmelse” (‘uncertainty upon direct perception’) by Viberg (1980, p. 32, see 4.3).

Concerning Voss’s concepts, the definition of *meinen*<sub>1</sub> in Table 4 emphasises ‘staticness’ by stating that one *holds* (not *forms*) a certain opinion. Also, as seen above, in *meinen*<sub>1</sub> ‘staticness’ may be more salient when compared to *denken*<sub>9</sub> in a similar use. Thus, primarily, *meinen* seems to express static MEINEN. There are, however, cases where *meinen*<sub>1</sub> clearly expresses dynamic URTEILEN. Duden online (2019, parentheses in original) presents *man könnte meinen (den Schluss ziehen), es wäre alles vergebens gewesen* (‘One could think (draw the conclusion),

everything was in vain’). Here, *meinen* clearly refers to the dynamic activity of drawing a conclusion about something.

### 3.5 Finden

Lastly, *finden* is not primarily a VOT. All but one out of seven/eight meanings listed in DWDS (2019) and Duden online (2019), respectively, concern its locational meaning (e.g., *den Schlüssel finden*, ‘to find the key’). Table 5 presents a definition and examples only for *finden* as a VOT, based on DWDS:

Table 5. ‘Finden’ as a verb of thinking.

Meaning <sub>x</sub>	German definition	English definition	German examples
<i>finden</i> <sub>1</sub>	etwas, jemanden für etwas halten; eine <u>Meinung</u> über etwas, jemanden haben	‘to consider something, somebody something’, ‘to have an opinion about something, somebody’	1) <i>Das finde ich komisch.</i> 2) <i>Ich finde, dass wir uns beeilen müssen.</i>

Adapted from DWDS (2019, my underlining).

*Finden*<sub>1</sub> can take a simple adjective as a complement, as in the first example in Table 5 (which is not possible for its Swedish ‘counterpart’ *tycka*). It can also take a subclause as its complement, as illustrated by the second example.

Although the definition of *finden* refers to one of the other VOT (in its nominal form, see underlining in Table 5), *finden* does not seem to be equally semantically intertwined with the other VOT as they are with each other. Since the verb+adjective construction is unique for *finden*, compared with *denken*, *glauben* and *meinen*, it can, in these cases, not be replaced by one of them for syntactic reasons. In the subclause construction it can sometimes be exchanged, but only at the cost of a decisive semantic-pragmatic shift, as demonstrated in (3):

(3) *Semantic-pragmatic differences between ‘denken’, ‘glauben’, ‘meinen’ and ‘finden’.*

- a) *Ich denke, ich sollte losfahren.*
- b) *Ich glaube, ich sollte losfahren.*
- c) *?Ich meine, ich sollte losfahren*
- d) *Ich finde, ich sollte losfahren.*

All sentences express that the speaker thinks that she should leave, but they do so in different ways. *glaube* in (b) frames the proposition such that it conveys uncertainty as to whether she should leave. *denke* in (a) appears to express more determination (cf. 6.2 where Zeschel's position is outlined that *denken* can come close to *finden* in expressing determination). Finally, *finde* in (d), conveys that the speaker is personally convinced that she should leave, expressing the highest degree of certainty and determination (see 6.2 on epistemic stance).

When expressing a subjective assessment, the difference between *finden*<sub>1</sub> and the other VOT becomes even clearer. In a context where the speaker is asked whether he thinks/feels it is cold in the room where he is right now, he may answer as in (4).

(4) *Expression of a subjective assessment.*

*Nein, ich finde nicht, dass es kalt ist.*

‘No, I don’t think it’s cold.’

It is, however, simply not meaningful to use any of the other VOT. They all contain this semantic component of ‘uncertainty’, and unless there is a reason why the speaker cannot with certainty know what he thinks/feels (e.g., because he is inside a hermetically sealed spacesuit) only *finden* makes sense. Regarding this, it is revealing that Duden online (2019) also defines *finden*<sub>1</sub> in terms of etymologically related *empfinden* (‘feel’). This constraint of subjective, bodily experience, whether it is a concrete sensation like in (4) or, more abstractly, a personal conviction like in (3), seems to delineate *finden* from the other VOT.

Voss lists *finden* only under dynamic VERMUTEN, but adduces no example. A straightforward use like in (4) appears to be better sorted under URTEILEN, though, since it expresses an opinion formed, based on an immediate impression. As for static MEINEN, *finden* is not listed as a verbal expression, but *halten für* (‘deem’) is. Since substituting *halten für* by *finden* in a sentence stressing ‘staticness’, for example, *Sie hält das für Blödsinn* (‘She thinks this is nonsense’) only results in a stylistic difference, *finden* seems to be able to express MEINEN, as well.

## 4. Verbs of Thinking in Swedish

In contrast to German VOT, there is more literature on the Swedish ones. Rather than drawing on dictionaries, the following discussion mainly relies on Viberg (1980, 2004) who carefully disentangles the semantics of Swedish VOT. Viberg himself relies both on corpus data, specifically on translation corpora, and on introspection (Viberg, 2004, p. 123).

### 4.1 *Tänka*

In his classification of mental verbs (again referring to a broader category than *VOT*), Viberg postulates the conceptual category “*tänkande (problemlösning)*” (‘thinking as problem-solving’) which refers to any type of processing of information that a person disposes of (1980, p. 15; Viberg does not use the word ‘conceptual category’, but speaks of “*delfält*” (‘subdomain’) in “*det kognitiva fältets grundstruktur*” (‘the main structure of the cognitive domain’)). Among other verbs, *tänka* is used to express this concept. It can do so in three ways, presented in (5):

(5) *Constructions with ‘tänka’.*

1. expresses plain mental activity: *X tänker (på Y)*
2. expresses any type of thought in a direct statement: *X tänker: “Y”*
3. expresses ‘temporally-grounded’ concrete thoughts in an *att*-introduced subclause:  
*X tänker att Y*

Adapted from Viberg (1980, 2004).

Firstly, *tänka* can express simple mental activity as in *Jag tänker (på dig)* (‘I am thinking (about you)’), where the specification of a topic is not obligatory (Viberg, 2004, p. 145). In this case, the thought is conceptualised as “neutral with respect to dimensions such as degree of certainty and subjectivity” (Viberg, 2004, p. 151), dimensions that will prove important for *tro* and *tycka*. Secondly, *tänka* can express any kind of thought in a direct, ‘quotation-like’ statement, as in “*Vad läskigt*”, *tänkte Peter* (“‘So scary’, Peter thought’) (example from Viberg, 1980, p. 17).

Thirdly, *tänka* can take an *att*-clause (‘that’) and express a thought indirectly, as in *När jag hörde det, tänkte jag att vi kanske hade en chans* (‘When I heard that, I thought that maybe we had a chance’, example from Goddard & Karlsson, 2003, p. 3). As mentioned in 2.1, this use is



highly restricted: *Tänka* can only express a “temporally-grounded concrete thought” (Goddard & Karlsson, 2003, p. 7). This implies that if the statement “*Vad läskigt*”, *tänkte Peter* is to be expressed indirectly, *tänka* needs to be replaced by a semantically more laden VOT, in this case, by *tycka*: *Peter tyckte att det var läskigt* (‘Peter thought that this was scary’, Viberg, 1980, p. 17).

The Svenska Akademiens Ordbok (*SAOB*), a standard Swedish dictionary edited by Svenska Akademien (2009), lists three meanings for *tänka* presented in Table 6:

Table 6. Meanings of ‘*tänka*’.

Meaning <sub>x</sub>	Swedish definition	English definition	Swedish examples
<i>tänka</i> <sub>1</sub>	låta sin ( <u>omedelbara</u> ) intellektuella verksamhet vara inriktad på visst problem, kunskapsstoff eller förhållande	‘to have one’s ( <u>immediate</u> ) intellectual capacity focus on a certain problem, topic of knowledge or issue’	<i>Tänk på saken till imorgon.</i> <i>Det var svårt att tänka klart i oväsendet.</i>
<i>tänka</i> <sub>2</sub>	ha för avsikt att handla på något sätt (som framgår av sammanhanget)	‘to intend to act in a certain way (based on the situation)’	<i>Hon tänker resa imorgon.</i>
<i>tänka</i> <sub>3</sub>	ha som sin uppfattning	‘to have a certain opinion’	1) <i>Det blev NN som vann.</i> — <i>Ja, jag tänkte väl det.</i> 2) <i>Vad ska folk tänka om oss?</i>

Adapted from Svenska Akademien (2009, my underlining).

All three constructions from (5) pertain to *tänka*<sub>1</sub> in Table 6. The word “*omedelbara*” (‘immediate’) in the definition of *tänka*<sub>1</sub> appears to refer to the essential constraint of ‘temporal groundedness’. *Tänka*<sub>2</sub> is clearly identical with *denken*<sub>3</sub>, expressing the intention to do something. Intriguingly, *tänka*<sub>3</sub> and the respective examples deviate from the constraint of ‘temporal groundedness’. They are rather reminiscent of *tro* and *tycka* (see 4.2/3), respectively. This use of *tänka* is, however, restricted to a few fixed expressions (Svenska Akademien, 2009).

Unsurprisingly, Voss lists *tänka* as a verbal expression for dynamic DENKEN. Given the defining constraint of ‘temporal groundedness’, *tänka*, in contrast to polysemous German *denken*, seems to be able to only express this concept (disregarding the conventionalised uses of *tänka*<sub>3</sub>, Voss, 2009, p. 446ff).

## 4.2 *Tro*

Whereas *tänka* is straightforwardly described, the ‘challenge’ begins with *tro* and *tycka*. The two verbs show an arduously graspable contrast between them (Viberg, 1980, p. 18). Viberg generally describes the range of uses for *tro* as follows:

“[T]ro används [...] vid påståenden som är av ett sådant slag att man åtminstone kan föreställa sig en situation, där olika personer normalt borde kunna enas om huruvida påståendet är sant eller falskt.” (Viberg, 1980, p. 31)

‘Tro is used for statements that are of such a kind that one can at least imagine a situation in which a group of people, under normal circumstances, should be able to agree upon whether/to what extent the given statement is true or false.’

When a proposition is framed by *tro*, the whole statement deals with the truth or probability of that proposition (Viberg, 2004, p. 146). Speakers framing their proposition with *tro* do not claim the proposition to be true, rather they allow for the possibility for it to be true, or not (Goddard & Karlsson, 2003, p. 4). Other people may check statements with *tro* ‘against the world’. This constraint of ‘intersubjective verifiability’ seems to be of key importance for *tro*. The constraint is exemplified in (6).

(6) *The constraint of ‘intersubjective verifiability’.*

*Peter trodde att han hörde en näktergal sjunga i parken. Men när fågeln visade sig, såg han att det bara var en bofink.*

‘Peter thought he was hearing a nightingale sing in the park. But when the bird showed itself, he saw that it was just a chaffinch.’

Example from Viberg (1980, p. 32).

Here, *trodde* expresses that Peter had reasons to think/believe that he was hearing a nightingale, but he was not entirely sure whether what he was hearing actually was a nightingale. His proposition was falsified when the bird appeared (it was, in this case, not *intersubjectively* falsified, but someone else could potentially have witnessed/investigated ‘the truth’). Because statements

with *tro* may be intersubjectively checked, some evidence for propositions speakers make is important (Aijmer, 1997b, p. 15; Goddard & Karlsson, 2003, p. 4; Voss, 2009, p. 446ff).

The SAOB lists three meanings for *tro*, as presented in Table 7:

Table 7. Meanings of 'tro'.

Meaning <sub>x</sub>	Swedish definition	English definition	Swedish example
<i>tro</i> <sub>1</sub>	hålla för sannolikt med avseende på något sakförhållande (som det i och för sig kan finnas säker kunskap om)	'to deem an issue/situation probable (about which reliable knowledge may exist)'	1) <i>Han trodde att Toronto var Kanadas huvudstad.</i> 2) <i>Jag tror (att) jag väntar en stund.</i> 3) <i>Jag skulle tro att det blir regn.</i>
<i>tro</i> <sub>2</sub>	hålla för sant (på mer eller mindre rationella grunder)	'to deem true (based on more or less rational grounds)'	<i>Man ska inte tro (på) allt som man hör ryktesvis.</i>
<i>tro</i> <sub>3</sub>	ha en fast religiös övertygelse	'to have a stable religious conviction'	<i>Tror du på Gud?</i>

Adapted from Svenska Akademien (2009).

The meanings of *tro* defined by Viberg (1980) and illustrated in (6) relate to *tro*<sub>1</sub> which is the only meaning of interest here (the motivation presented in 3.3 holds true for Swedish). *Tro*<sub>1</sub> has a further sub-meaning, specified in the SAOB as “äv[en] försvagat i uttryck för egen (obestämd) avsikt” (‘also weakened in expressions of one’s own (undetermined) intention’, Svenska Akademien, 2009). The second example for *tro*<sub>1</sub> in Table 7 illustrates this (‘I think I’ll wait a while’). This use is not so much about intersubjective verifiability (only speakers can verify/falsify such statements), but about attenuating statements about one’s intentions (see 6.2 on epistemic stance).

Voss lists *tro* as a verbal expression for static MEINEN (Voss, 2009, p. 446ff). This is true for *tro*<sub>2,3</sub> as well as many cases of *tro*<sub>1</sub>, for instance, the first example in Table 7. However, to say that *tror* in the second example for *tro*<sub>1</sub> conceptualises this ‘thought’ as static does not seem appropriate (especially, because ‘undetermination’ is salient). Instead, it appears like VERMUTEN is expressed. Also, in the third example for *tro*<sub>1</sub> (‘I think it’ll rain’) URTEILEN rather than MEINEN seems to be at stake, as it expresses an opinion formed, based on some evidence (e.g., dark clouds). Furthermore, just from a logical point of view, there should be

cases where *tro* expresses some of the dynamic concepts, considering the fact that it ‘occupies’ much of the ‘territory’ which in German is covered by *denken* (but *tänka* is unavailable, see 2.1/4.1).

Whereas, according to Viberg (1980, p. 14), *tänka* is an expression for the conceptual category ‘thinking as problem-solving’, *tro* and *tycka*, together with other verbs, express a distinct complex of concepts called “kunskap–tro–åsikt” (‘knowledge-belief-opinion’). The fact that Viberg assigns *tro* and *tycka* to a separate conceptual category than *tänka*, points to a rather strong division between them.

### 4.3 *Tycka*

*Tycka*, then, is “the most language-specific of the verbs of thinking” in Swedish (Viberg, 2004, p. 146). It expresses completely subjective, personal assessments or speculations made by individuals that cannot be judged objectively (Viberg, 2004, pp. 143–147). Viberg distinguishes between three uses of *tycka*, presented in (7):

(7) *Uses of ‘tycka’.*

1. expresses uncertainty upon direct perception
2. expresses assessments based on personal experience
3. expresses evaluations whose truth value cannot objectively be checked

Adapted from Viberg (1980, pp. 31–37).

In the first case in (7), *tycka* (*sig*) is used together with verbs of perception (e.g., *höra*, ‘hear’). In this case, speakers express their uncertainty as to what they perceived. (8) illustrates this use, while also forming a minimal pair for *tro–tycka* together with (6):

(8) *Uncertainty upon direct perception.*

*Peter tyckte att han hörde en näktergal sjunga i parken. Men ljudet var så svagt att det kan ha varit hans fantasi som spelade honom ett spratt.*

‘Peter thought he heard a nightingale sing in the park, but the noise was so weak that it may in fact have been his fantasy that played a joke on him.’

Example from Viberg (1980, p. 32).

Whereas in (6) Peter is uncertain whether what he was hearing was a nightingale, in (8), his uncertainty concerns the perception of bird song as such (Viberg, 1980, p. 32). Even if someone next to Peter had not heard anything, this would not falsify his very subjective experience.

In the second case in (7), *tycka* is used together with phenomenon-oriented verbs of perception (e.g., *känna*, ‘feel’) to express subjective assessments (Viberg, 1980, p. 32), as in *Jag tycker att det känns kallt i dag* (‘I think it feels cold today’, example from Viberg, 1980, p. 32). Here, *tycka* expresses that the ‘I’ subjectively experiences coldness, again, an experience that is not meaningfully verifiable. Even here, one can create a minimal pair with *tro*, resulting in a crucial meaning shift: Replacing *tycker* by *tror* would convey that the ‘I’ has not directly experienced the coldness, for example, because the utterance is made from inside a house about the temperature outside (Viberg, 1980, p. 32). In that case, the speaker’s speculation can easily be verified. An identical behaviour has already been observed for German *finden* vs. *denken/glauben/meinen* (see 3.5).

Lastly, in the third case in (7) *tycka* is used when a speaker subjectively evaluates something/someone, as in *Jag tycker att byxorna är för korta* (‘I think the trousers are too short’, example from Viberg, 1980, p. 35). Unless one has some cutting-edge lie detector it is not possible to check the truth value of the speaker thinking this. One must simply accept it as the speaker’s personal truth.

Whereas *tro* operates on the scale true/false, *tycka* in both the second and third use in (7) operates “along the dimension good/bad which may vary from person to person but cannot be considered to be correct or incorrect” (Viberg, 2004, p. 143).

The SAOB only distinguishes between two meanings of *tycka*, presented in Table 8:

Table 8. *Meanings of ‘tycka’.*

Meaning <sub>x</sub>	Swedish definition	English definition	Swedish example
<i>tycka</i> <sub>1</sub>	ha åsikten eller inställningen	‘to have an opinion or attitude’	<i>Han tyckte att hon var vacker.</i>
<i>tycka</i> <sub>2</sub>	ha (sinnes)intrycket	‘to have a (perceptual) impression’	<i>Jag tyckte att det var Olle, men jag kan ha tagit fel.</i>

Adapted from Svenska Akademien (2009).

Clearly, *tycka*<sub>1</sub> comprises the second and third use in Viberg's classification (7), while *tycka*<sub>2</sub> is identical with the first use in (7).

Voss lists *tycka* as an expression only for static MEINEN. A look at its counterparts in Norwegian and Danish (which at least superficially share the Swedish 'trichotomy' of VOT) reveals classificatory inconsistency: Norwegian *synes* is also listed under MEINEN, but Danish *synes* is presented as an expression for dynamic DENKEN (Voss, 2009, pp. 446ff, 411ff, 302ff for Swedish/Norwegian/Danish). While each verb may foreground staticness/dynamicity differently, it does not seem sensible to argue that Danish *synes* is always conceptualised as dynamic, whereas Swedish/Norwegian *tycka/synes* only ever express mental states. Also, just like for *tro*, it only seems logical that *tycka*, given the unavailability of *tänka*, expresses some of the dynamic mental activities. Especially, in the sense of *bedöma* ('appraise'), it seems like *tycka* expresses dynamic URTEILEN, as in *Vi tycker (bedömer) att det är bättre att vi går nu* ('We think (appraise) that it is better if we went now').

Besides these uses and meanings, *tycka* also occurs as a particle verb (*tycka om*, 'like', which is clearly linked to 'subjective opinion', Viberg, 2004, p. 149) and as a deponent verb (*tyckas*, 'seem', Viberg, 2004, p. 149). Also worth mentioning is the verb *anse* which is a more formal synonym to *tycka*<sub>1</sub> (Viberg, 2004, p. 147).

#### 4.4 *Mena*

As said, *mena* is not traditionally considered part of the verbal complex *tänka-tro-tycka*, but it is nevertheless closely interrelated with these verbs, as becomes visible in Table 9:

Table 9. Meanings of 'mena'.

Meaning <sub>x</sub>	Swedish definition	English definition	Swedish example
<i>mena</i> <sub>1</sub>	ha som sin åsikt	'to have as one's opinion'	<i>Vissa bedömare menar att regeringen måste avgå.</i>
<i>mena</i> <sub>2</sub>	åsyfta viss innebörd	'to mean (allude to) something/someone (in particular)'	<i>Jag menade inte dig.</i>
<i>mena</i> <sub>3</sub>	ha som syfte	'to aim at', 'to intend'	<i>Jag menade inte att såra dig.</i>
<i>mena</i> <sub>4</sub>	tveka att yttra sig	'to hesitate to utter'	<i>Stå inte där och mena – fram med vad du har på hjärtat!</i>

Adapted from Svenska Akademien (2009).

In the context of VOT, only *mena*<sub>1</sub> is of interest. It shows clear semantic overlap with *tycka*<sub>1</sub>, their respective definitions being almost identical. Therefore it is unsurprising that the two verbs are listed as synonyms (“jfr”, ‘compare’) of each other in the SAOB (Svenska Akademien, 2009). Thus, also *mena* is used to express speakers’ very subjective opinions. It is, however, unclear how the two verbs can be differentiated.

Just like *tycka*, *mena* is listed as a verbal expression for static MEINEN in Voss’s (2009, p. 447) classification.

## 5. Comparing German and Swedish Verbs of Thinking

Looking at the semantics of the four German and Swedish VOT, it is evident that they cover the DOT outlined in 2.1-3 very well. They can express thinking in its core sense, postulated as the THINK prime by the NSM (Goddard, 2008; Wierzbicka, 1998), all “seams” of Fortescue’s (2001) more nuanced classification of thinking, as well as the relevant concepts in Voss’s (2009) model.

There seem to be numerous overlaps between the four VOT in German and Swedish, both in meaning and usage patterns (see 6 for some pragmatic aspects). Furthermore, there appear to be many semantic-pragmatic overlaps between the four VOT in their respective language, but German seems to outnumber Swedish when it comes to the interconnectedness of the four verbs. Not only are the definitions for *denken*, *glauben* and *meinen* circular in many ways, there also are a lot of examples where the verbs are interchangeable, resulting in minimal and hard-defined meaning differences. Especially German *denken* in comparison with Swedish *tänka* contributes to this picture: Quantitatively, *denken* boasts many more meanings than *tänka*, as, qualitatively, the constraint of ‘temporal groundedness’ (presumably of key importance for *tänka*) does not seem relevant for *denken*.

Likewise, whereas Swedish *tro* appears to be the only available verb in contexts of ‘intersubjective verifiability’, German VOT do not appear to be governed by this constraint, as not only *glauben*, but also *denken* and *meinen* seem capable of expressing intersubjectively verifiable statements. This constraint will be empirically investigated in the experiment conducted as part of this study (see 7-11). Taking all VOT together, it seems that the Swedish ones are semantically more specific than the German ones.

While *denken* is very polysemous, there is one meaning where *denken* is restricted: The second seam in Fortescue’s (2001, p. 28) classification, “thinking as considering/judging”, may sometimes be expressed by *denken*, but primarily, this seam is covered by *finden*. Here, the two languages seem to show an identical semantic specificity: In cases where speakers’ very subjective opinion/assessment/evaluation of something is at stake, mainly just *finden* and *tycka* can be used. The other VOT are unavailable because they all convey some uncertainty that is not meaningful unless speakers simply do not know what they subjectively think/feel.



This conclusion is in agreement with Viberg's observation that *tycka* is most commonly translated to *finden* in German (2004, p. 147). He constrains, though, that *finden* has a different basic meaning (i.e., the locational sense) than *tycka*. Only “[t]ycka stresses the purely subjective nature of an opinion. It is a matter of personal taste which does not call for any justification” (Viberg, 2004, p. 147, italics in original). It is not clear in what way *finden*<sub>1</sub> does *not* express a purely subjective opinion that does *not* call for any justification, nor what this has to do with *finden* having a different basic meaning. However, the impression that *tycka* expresses something decidedly subjective may emerge from the fact that it language-internally contrasts with *tro* which foregrounds ‘intersubjective verifiability’ and objectivity. This effect, in turn, does not seem to exist in German, since ‘intersubjective verifiability’ does not appear to be relevant for neither *glauben*, *denken*, or *meinen*. Anyway, this ‘subjectivity constraint’ which presumably governs both *finden* and *tycka* will be investigated experimentally. In this regard, it will also be interesting to see if and when *mena*<sub>1</sub> (which greatly overlaps with *tycka*<sub>1</sub>) is available, too.

## 6. Some Pragmatic Aspects of Verbs of Thinking

As mentioned, VOT are important pragmatic resources, too. They may, among other things, express epistemic stance (henceforth *ES*). This section briefly discusses *ES* in general as well as German and Swedish VOT in their use as *ES* markers. Additionally, further pragmatic aspects of VOT are addressed.

### 6.1 Epistemic Stance

The definitions of *ES*, or epistemic modality, found in the literature are rather vague. F. R. Palmer (2001), who wrote a monography on ‘Mood and Modality’ in the world’s languages, states that “with epistemic modality speakers express their judgments about the factual status of [a] proposition” (p. 8). Aijmer (1997a) concurs that through *ES* speakers express their “qualification of the truth of what is said” (p. 217). More concretely, Zeschel (2017, p. 337) defines *ES* as the degree of certainty or commitment that speakers express regarding an object of knowledge. What is relevant is that *ES* always stands in relation to a proposition (i.e., regarding the conceptual syntax of THINK, only uses of VOT in the ‘propositional complement frame’ qualify, see 2.1) and serves to express how certain speakers are about the truth of that proposition.

*ES* is expressed through so-called *ES* markers, among them modal auxiliaries (e.g., *may*), adverbs (*certainly*), but also VOT (Aijmer, 1997b, p. 16). For communication to be felicitous, it is a prerequisite that interactants mutually understand their attitudes towards negotiated issues. Since such attitudes are invisible, *ES* markers are a helpful tool to mediate them. They help interactants grasp how propositions should be understood, thereby establishing an intersubjective ground of epistemic attitudes (Zeschel, 2017, pp. 249–251). By using *ES* markers, speakers not only position themselves regarding propositions, but interactionally also towards their interlocutor’s attitudes (Zeschel, 2017, pp. 337–338; see also: Kärkkäinen, 2003, p. 185). Furthermore, using *ES* markers, speakers can satisfy cooperation principles like the Gricean maxim of quality (“Do not say what you believe to be false”, Aijmer, 1997b, p. 8; Grice, 1975, pp. 45–46).

## 6.2 Verbs of Thinking as Epistemic Stance Markers

For German, Zeschel (2017, p. 338) states that VOT like *denken* or *meinen* are routinely used to display ES. His analysis focuses on oral usage patterns of *denken*. The author proposes a number of different ‘readings’ (“Lesarten”) for the verb. All uses of *denken* as an ES marker are subsumed under the reading AUFFASSUNG (‘OPINION’, ‘POINT OF VIEW’). AUFFASSUNG is abstractly defined as ‘a speaker is, based on some evidence, of the opinion or even conviction that a certain issue is or should or will be the case’ (Zeschel, 2017, p. 269). Expressing AUFFASSUNG *denken* can, on the one hand, convey speakers’ uncertainty as to whether the framed proposition is true (resembling *glauben*). On the other hand, and this is rather astonishing, *denken* can also express that speakers are personally convinced of the truth of the proposition, thus expressing the highest degree of certainty (resembling *meinen* or even *finden*, Zeschel, 2017, p. 267). Anyway, AUFFASSUNG is a very frequent reading of *denken*, accounting for some 40% of all instances in Zeschel’s (2017, p. 273) data.

Comparable constructions with *glauben*, *meinen* and *finden* exist and need to be investigated (Zeschel, 2017, p. 327). Judging from their mentions in Zeschel’s study, it seems like *glauben* and *meinen* express different degrees of uncertainty, whereas *finden* conveys the highest degree of certainty regarding the proposition’s truth (see also (3)).

For Swedish, Viberg (1980) notes that many of the verbs pertaining to the ‘knowledge-belief-opinion’ complex serve to indicate speakers’ attitudes (p. 17). Specifically, he notes that *tro* and *tycka* “in their most basic use have a sentential object and express propositional attitude” (Viberg, 2004, p. 146). Viberg uses different terms, it is, however, clear that the speakers’ “propositional attitude” may be understood as their ES regarding the proposition. Also Karlsson (2006, p. 54) agrees that Swedish VOT may express ES (she uses the term “positioning”). Much of what ES the Swedish VOT can express is evident from their rather restricted semantics and range of uses (see 4.1-4). Put roughly, *tro* as an ES marker expresses that speakers have some certainty regarding the framed proposition, but are not entirely sure. *Tycka*<sub>1</sub>, on the other hand, conveys that speakers are personally convinced of the truth of the proposition, thus exhibiting the highest degree of certainty.

Irrespective of the language, as ES concerns *the speaker(s)*’ attitude towards a proposition, only uses in the 1<sup>st</sup> person can convey ES (Aijmer, 1997b, p. 28). However, not all instances of VOT in 1<sup>st</sup> p., s./pl. express ES, either. (9) exemplifies this contrast:

(9) *VOT used as epistemic stance markers, or not.*

- (a) *Manchmal denke ich, es wäre schön, in Paris zu wohnen.*  
*Ibland tänker jag att det vore trevligt att bo i Paris.*  
 ('Sometimes I think it would be nice to live in Paris.')
- (b) *Ich denke/glaube, es wäre schön, in Paris zu wohnen.*  
*Jag tror att det vore trevligt att bo i Paris.*  
 ('I think it would be nice to live in Paris.')

(9a) expresses that the speaker has repeatedly had the thought that living in Paris would be nice. *Manchmal/Ibland* ('sometimes') conceptualises this thought as 'temporally-grounded'. *Denke/tänka* expresses mental activity as such, not conveying any ES regarding the proposition. This is different in (9b). Here, the verbs express that the speaker assumes (but does not know with certainty) that living in Paris would be nice. Thus, *denke/glaube/tror* express ES in terms of the degree of certainty that the speaker has about the truth of the proposition. (9) is a deliberately difficult case, highlighting that it depends on the contextual conceptualisation of any utterance, whether ES is expressed through a VOT, or not (Aijmer, 1997b, pp. 18–19).

### 6.3 Further Pragmatic Functions of Verbs of Thinking

VOT have a tendency to grammaticise into discourse markers, that is, into linguistic units which no longer express the semantic content of their source lexemes, but instead assume discursive functions (Mullan & Karlsson, 2012, p. 2; Zeschel, 2017, pp. 250–251) like bridging disfluencies, treating problems in interpersonal alignment or signalling intended turn closing (Zeschel, 2017, p. 325). The grammaticisation process leading to discourse markers includes semantic bleaching, phonological reduction and syntactic disintegration (Mullan & Karlsson, 2012, p. 2; Zeschel, 2017, pp. 250–251). This process has been observed for German and Swedish VOT, the description of which poses problems in both languages (for German see: Zeschel, 2017; for Swedish see: Mullan & Karlsson, 2012).

A further pragmatic function of *tycka* is observed by Mullan and Karlsson (2012, p. 19): Since *tycka* frames propositions as purely subjective statements, it has a face-saving effect, enabling speakers to utter their personal opinions without putting their face at risk.

## 6.4 Ways of Thinking

As demonstrated, VOT both semantically express crucial mental activities/states, and pragmatically fulfil important functions. The manner in which they do that differs cross-linguistically, and so it does between German and Swedish. Along with semantic and pragmatic aspects, there is a third way in which languages may differ. It concerns the fashion in which linguistic communities organise their communication. Goddard (2003) speaks of “Ways of thinking”: “[D]ifferent cultures may endorse particular cognitive strategies for personal interaction” (p. 16). For some communities, certain ideas and values are of a relatively high importance, making relevant semantic-pragmatic distinctions more salient and motivating that certain concepts and expressions appear more frequently (Narasimhan, Kopecka, Bowerman, Gullberg, & Majid, 2012, p. 1).

The highly frequent English formula *I think*, for instance, may be an expression “of a portfolio of English-specific cultural scripts linked with the ideal of personal autonomy, including autonomy of thinking” (Goddard & Karlsson, 2003, p. 6; the argument originates from Wierzbicka, 2002). These cultural values imply the importance of differentiating between what speakers know from what they merely think they know (Goddard & Karlsson, 2003, p. 6). In light of the Swedish ‘trichotomy’ *tänka-tro-tycka*, Goddard and Karlsson (2003, p. 6) hypothesise the existence of a Swedish-specific ‘Way of thinking’.

Whereas it is proven that the Swedish complex *tänka-tro-tycka*, plays an instrumental role in Swedish discourse (Goddard & Karlsson, 2003; Viberg, 2004), the possibility that German discourse is organised along different cultural values has to be taken into consideration. In addition to semantic-pragmatic differences between VOT in German and Swedish, also their relative importance in discourse may be different for German. Moreover, there may be other means to express these semantic-pragmatic meanings (possibly focussing on different aspects). For instance, subjunctive mood appears to be a way of expressing ES in German. (10) provides a cross-linguistic example of this:

(10) *Subjunctive mood expressing epistemic stance.*

*Jag tycker att man ska göra så här.* (‘I think one should do it like that.’)

*Ich würde das so machen.* (‘I would do it like that.’)

Undoubtedly, a similar construction is possible in Swedish, too (*Jag skulle göra så här/Jag hade gjort så här*), and the two sentences are not identical concerning the degree of personal conviction expressed through it. However, the German sentence employing subjunctive mood appears to be an adequate translation of the Swedish sentence featuring *tycka*, each possibly representing a language-specific way of conveying ES.

This issue that German and Swedish may also differ regarding ‘Ways of Thinking’ and preferred discourse patterns cannot be further explored in this study, but its implications should be kept in mind.

## 7. Current Study

As demonstrated, VOT in German and Swedish share a lot of commonalities. However, despite the typological similarity of the two languages, there seem to be crucial differences as well. The verbs in question appear to be sensitive to different semantic-pragmatic constraints. Some of them show very constrained semantic characteristics while others operate in a semantically more general way. The preceding theoretical background has brought together the current knowledge about VOT in German and Swedish. In order to corroborate the claims made about these VOT as well as compare them between German and Swedish, an experiment with native speakers of the two languages was designed and conducted. Moving beyond introspection and secondary sources like dictionaries, which much of the presented research into (the universality of) VOT has relied on, this study takes another path with the explicit aim to contribute novel, empirical data to the research field.

In particular, the experiment addresses semantic specificity in VOT as well as two particular constraints ('intersubjective verifiability' and 'subjectivity') which may have an impact on it. Furthermore, it explores which of the VOT in German and Swedish are sensitive to these two constraints. Ultimately, the experiment may also be seen as an empirical contribution to the ongoing discussion about whether the DOT in the world's languages is structured by universal guiding principles, or not.

### 7.1 Research Questions and Predictions

The experiment tackles two sets of research questions. Research questions 1a and 1b concern the semantic specificity of German and Swedish VOT on a purely quantitative level, that is, they are interested in *how many* VOT are available in a given context. The number of available VOT is then used to gauge the level of semantic specificity.

*Research question 1a:* Is there a difference in semantic specificity in verbs of thinking between German and Swedish?

Based on the theoretical discussion, the following prediction is made:

- i. Overall, Swedish participants will choose fewer verbs than German participants (reflecting a higher level of semantic specificity for Swedish than for German), when asked to state which verbs of thinking are meaningful in an utterance in a given context.

Research question 1b relates to the two constraints ‘intersubjective verifiability’ and ‘subjectivity’ which have been identified as potentially relevant for the German and/or Swedish VOT. It specifically asks:

*Research question 1b:* Is there a link between the constraints ‘intersubjective verifiability’ and ‘subjectivity’ and the level of semantic specificity in German and Swedish verbs of thinking?

Here the predictions are as follows:

- i. Swedish participants will choose fewer verbs than German participants in contexts where the utterance in question expresses/asks for something that is potentially intersubjectively verifiable (reflecting a higher degree of semantic specificity for Swedish than for German).
- ii. German and Swedish participants will show an equally restricted choice of verbs in contexts where the utterance in question expresses/asks for a subjective opinion/assessment/evaluation that is not intersubjectively verifiable (reflecting an equally high degree of semantic specificity for both languages).
- iii. German and Swedish participants will both show a non-restricted choice of verbs in contexts where the utterance does not (necessarily) express/ask for something that is either potentially intersubjectively verifiable or a subjective opinion/assessment/evaluation that is not intersubjectively verifiable (reflecting a low degree of semantic specificity for both languages).

There are cases where German is semantically more specific than Swedish, too. However, there does not seem to be a common denominator holding these cases together. Also, the literature reviewed in 3.2-5 cannot contribute with any findings in this regard. Therefore, no predictions are made as to in which contexts German participants choose fewer verbs than Swedish participants.

Research question 2 concerns the actual verb choice, that is, *which* of the VOT are sensitive to the two tested constraints.

*Research question 2:* Which are the verbs of thinking in German and Swedish operating in contexts of ‘intersubjective verifiability’ and ‘subjectivity’?



Here, the predictions are as follows:

- i. Swedish participants will only choose *tro* in contexts where the utterance in question expresses/asks for something that is potentially intersubjectively verifiable. German participants will choose both *denken*, *glauben* and *meinen*, although possibly to varying degrees.
- ii. German and Swedish participants will only choose *finden* and *tycka*, respectively, in contexts where the utterance in question expresses/asks for a subjective opinion/assessment/evaluation that is not intersubjectively verifiable.

Both sets of research questions will be looked at within groups and between groups.

## 8. Method

An adapted version of the contextualised choice task used by Adamou, De Pascale, Garcia-Markina and Padure (2018) was chosen for this study. In a contextualised choice task, every experimental item consists of a paragraph of context followed by a limited choice of follow-up utterances that can or cannot be made in the given context (Adamou et al., 2018, p. 8). Thus, participants are introduced to a certain situation and are then prompted to choose among a set of utterances. A big advantage of the contextualised choice task is that the researcher can carefully create contexts, playing with constraints that may trigger the choice or non-choice of the linguistic elements under investigation. The design thus makes it possible to narrow down semantic and pragmatic variables which determine the use of a given linguistic element (Adamou et al., 2018, p. 7).

The experimental design at hand is clearly on the fence between comprehension and production. The participants have to comprehend the context in order to be able to produce a semantically-pragmatically sound utterance in it. Given that they are provided a selection of utterances one might as well as speak of some kind of judgment task or cloze task (Hemforth, Mertins, & Fabricius-Hansen, 2014, p. 15) .

### 8.1 Participants

The constraints carving up any set of associated concepts in any language “are best represented in the lexicons of adult monolingual speakers” (Jarvis & Pavlenko, 2008, p. 120). As both the German-speaking countries and Sweden (as well as Swedish-speaking Finland) are highly internationalised countries (both linguistically and culturally) where the command of one or several second languages is the rule rather than the exception, the participants in this study were not ‘perfect monolinguals’. Rather, they were “idealised monolinguals” (Adamou et al., 2018, p. 7) who passed an initial ‘monolingual check’ (see 8.3).

In total, 67 native speakers ( $n=34$  German,  $n=33$  Swedish) participated in the study.<sup>3</sup> Three German participants were excluded because they indicated that they had knowledge of Swedish

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<sup>3</sup> Participants in the pilot study (see 8.2) are not part of these 67 participants.

or one of the other Scandinavian languages (which resemble Swedish in how it carves up its DOT, see 2.1/4.3). Furthermore, three Swedish participants were excluded because they indicated that they had good or very good command of German. However, seven Swedish participants who indicated basic knowledge of German were not excluded. This was not done since 28 out of 30 Swedish participants indicated good or even very good knowledge of English. English is semantically even more general than German in the realm of VOT (see 2.2). Thus, the potential influence of a language showing semantic generality in VOT is present anyway. To assure equal group size, an additional German participant was randomly excluded. At the same time, it was ensured that both versions of the questionnaire (see 8.3) were equally represented. This resulted in a total of 60 participants ( $n=30$  German,  $n=30$  Swedish) who were analysed. Participant variables can be found in Appendix A.

All participants were recruited via personal and academic contacts, as well as via Facebook and Instagram. They received no compensation for their participation and remained completely anonymous.

## 8.2 Materials

In the contextualised choice task in this study, every item opened with a context consisting of one to four sentences which introduced an everyday situation (see example in (11a-c), see all materials in Appendix B). Each context was followed by four utterances featuring four different VOT (*denken, glauben, meinen, finden* resp. *tänka, tro, tycka, mena*) in otherwise syntactically identical sentences. (11) shows examples in German (11a) and Swedish (11b), followed by an approximate English translation (11c):

(11a) *Du und Anna seid gerade erst aufgestanden. Ihr esst Frühstück und schaut dabei aus dem Fenster. Es ist noch früh am Morgen, die Sonne scheint aber schon. Du fragst Anna:*

- Denkst du, es ist kalt draußen?*<sup>4</sup>
- Glaubst du, es ist kalt draußen?*
- Meinst du, es ist kalt draußen?*
- Findest du, es ist kalt draußen?*
- Nichts davon passt.*

(11b) *Du och Anna har precis gått upp. Ni äter frukost och tittar ut genom fönstret. Det är tidigt på morgonen, men solen skiner redan. Du frågar Anna:*

- Tänker du att det är kallt ute?*
- Tror du att det är kallt ute?*
- Menar du att det är kallt ute?*
- Tycker du att det är kallt ute?*
- Ingen av dessa.*

(11c) *You and Anna just got out of bed. You look out through the window while eating breakfast. It is early in the morning, but the sun is already shining. You ask Anna:*

- Do you think it is cold outside?*
- (Do you believe it is cold outside?)*
- (Do you mean it is cold outside?)*
- (Do you feel it is cold outside?)*
- None of these.*

*Note: As demonstrated in 2.2/5, German and Swedish VOT often simply translate to English ‘think’ which is also true in this case. The other three verbs in the English translation are only intended to give an impression of the semantic range of verbs used in this experiment.*

As the four VOT investigated here are highly polysemous and polyfunctional, the contexts were crafted in such a way that they do *not* allow for a variety of different interpretations (Charipova-Akgül, 2011, p. 11; Viberg, 1980, p. 31). The restricted contexts, then, may or may not restrain the options for how one can react linguistically, depending on the language-specific semantics of the verbs in question. Carefully designed stimuli are of key importance in order to be able to

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<sup>4</sup> To not confuse participants from Germany/Austria, standard spelling with the sharp S (ß) was used in the experiment, although many German-speaking participants were recruited in Switzerland (where *ss* is used instead of *ß*). However, it can be assumed that German-speaking Swiss participants are more familiar with the standard High German spelling, than vice versa.

“disentangle the parameters determining possible interpretations.” (Hemforth et al., 2014, p. 16; see also Narasimhan et al., 2012, p. 7).

Items were designed ‘thinking from both ends’ taking into consideration both the German and Swedish characteristics of these verbs. Most items use the so-called propositional complement frame (i.e., the VOT frames a proposition introduced by *dass/att* (‘that’), but note that *dass* is not obligatory in German, see (11a)), since this is the most problematic use, especially with regard to the Swedish VOT (see 2.1, as well as 5). Items designed ‘thinking from the German end’ were translated into Swedish, and vice versa. All items were checked by two native speakers of each language. The translations should be as exact as possible, although naturalness was in some cases given priority over literalness. On the note of naturalness, it has to be conceded that while at least one utterance featuring one VOT was meaningful in every context, this utterance may not necessarily be the most natural way of reacting to the context. The German verb *finden*, for example, can take a subclause as its complement (e.g. *Ich finde, dass deine Haare echt schön sind*, ‘I find/think (that) your hair is really beautiful’), but a simple adjective may express the same thing in a more natural way (*Ich finde deine Haare echt schön*, ‘I find your hair really beautiful’). This is a construction that only works with *finden* and not with any of the other German VOT, though (see 3.5). Given that the utterances to choose from should only differ with regard to the VOT, the syntactic construction had to be such that it worked with all the verbs.

In total, there were 24 experimental items, distributed across a fully orthogonal design consisting of four conditions of items (see Table 10). The distribution into these four conditions was based on the number of available VOT that each language would allow for in a given context, provided that one differentiates in a binary way between one versus multiple available verbs. The items were classified into one of the four conditions through a pilot study with 29 participants ( $n=15$  German,  $n=14$  Swedish).<sup>5</sup> Not all items were piloted. Some were created emulating patterns from the piloted items in order to fill the four conditions. Table 10 illustrates them:

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<sup>5</sup> There were three additional reasons for conducting a pilot study prior to the actual study. Firstly, to see whether the contextualised choice task was an adequate method to investigate semantic specificity in VOT. Secondly, to

Table 10. *Orthogonal design with four conditions.*

Cross-linguistic pattern	Number of available verbs in German	Number of available verbs in Swedish	Number of items
<b>1. Swedish is semantically more specific than German</b>	multiple	one	6
<b>2. German is semantically more specific than Swedish</b>	one	multiple	6
<b>3. Both languages are equally semantically specific in allowing for only one verb</b>	one	one	6
<b>4. Both languages are semantically general in allowing for multiple verbs</b>	multiple	multiple	6
<b>Total</b>	–	–	24

Condition 1 contains items where Swedish is predicted to allow for only one verb, whereas German is predicted to allow for two or more. In this condition, all contexts operate with the constraint ‘intersubjective verifiability’. Condition 2 contains items where German is predicted to allow for only one verb, but Swedish is predicted to allow for two or more. As stated in 7.1, there is no unifying constraint in the contexts of this condition. Condition 3 contains items where both languages are predicted to allow for only one verb. All contexts in this condition operate with the constraint ‘subjectivity’. Condition 4, finally, contains items where both languages are predicted to allow for more than one verb. As only conditions 1 and 3 share a unifying constraint in their contexts whose effect on the verb choice will be evaluated, conditions 2 and 4 can be considered control conditions.

Saying that only one verb is available in one or both languages means, of course, that none of the other three verbs are adequate in the given context. Undoubtedly, one could find other verbs to fill the gap in a meaningful way, even expressing more or less the same meaning, for example, through synonyms like *anse* for *tycka* in Swedish (see 4.3). However, this experiment focuses only on four specific VOT, on the grounds presented in 2.5.

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test concrete experimental items with regard to the two constraints, and, lastly, to ensure that participants understood the provided instructions.

The 24 experimental stimuli were intermingled with 24 fillers. The fillers were designed following the pattern of the experimental stimuli. Thus, they too consisted of a paragraph-long context, followed by a set of four possible utterances that only differed in the verb. Of the 24 filler items, 18 followed one verbal pattern, always featuring the same four motion verbs (*fahren, gehen, laufen, reisen* for German, and *gå, åka, köra, fara* for Swedish). The remaining six filler items featured four completely random verbs each. Exactly as for the true stimuli, in some cases only one utterance was meaningful in the given context, in other cases multiple utterances were adequate.

Across all everyday contexts (both experimental stimuli and fillers), five fictive characters appeared, one of them being ‘you’, that is, the participants themselves, another one being ‘your’ partner Anna (see (11)). Every context ended with the words *...fragst du:/...frågar du:* (‘you ask:’), or a different speech act verb, followed by the choice of utterances in a ‘direct speech mode’. One of the other four characters always played the part of the interlocutor for the participants. That way, the participants’ utterances were embedded in a decidedly interactive context. This is crucial given that one of the primary pragmatic functions of these VOT is to express epistemic stance *in interaction* (see 6.2).

### 8.3 Procedure

The experiment was conducted online, using the survey tool SoSci Survey ([www.soscisurvey.de](http://www.soscisurvey.de)). The platform offers the possibility to create highly customisable multi-lingual questionnaires and is completely free of charge for academic research.

Before being admitted to the actual experiment, participants had to pass the following monolingual check:

1. Is German/Swedish your mother tongue? > yes
2. Do you mainly use German/Swedish in your everyday life? > yes

In case participants answered ‘no’ to this question, they were asked additionally under which circumstances (at work, at university, on holiday) they would speak other languages than German/Swedish. If they answered ‘on holiday’ they could proceed with the questionnaire. If they answered ‘at work’/‘at university’ they were disqualified. If none of the options applied to them, they could self-describe in an open text field under which circumstances they would use other languages. They were

then allowed to proceed with the questionnaire. In case their self-description would disqualify them from participating, their answers could be removed from the results at a later stage.

3. Have you ever lived in a non-German/Swedish-speaking country longer than three months? > no

Having answered as specified above, they got to an instruction page where the task was described: Upon reading the context for every item, participants were encouraged to choose any number of sentences between 0-4 sentences, depending on how ever many they felt were meaningful in the given context. All possible utterances were syntactically correct, but not all of them met the language-specific semantic-pragmatic requirements established in the introducing context. Thus, participants were not able to rule out utterances based on ungrammaticality. The selection of utterances was designed in such a way that one VOT always worked. Hence, unless a participant misinterpreted the context, they never had to select 'None of these'.

To exemplify the participants' task: In the case of example (11a-c), the constraint 'intersubjective verifiability' was (implicitly) made salient: Anna has not yet been outside. Thus, she cannot have any direct bodily evidence for whether she thinks/feels it is cold there. Whatever she speculates about the temperature outside may easily be checked. She just needs to go out (or open the window) to verify or falsify her speculative statement. Given the constraint in this example, German participants were expected to give a multi-choice answer (picking both *denken*, *glauben* and *meinen*, although possibly to varying degrees), whereas Swedish participants were expected to single out only one answer (the utterance with *tro*).

After reading the instructions, participants proceeded to two training items where in one case three utterances were perfectly meaningful and in the other case only one was. If they answered as expected they proceeded straightaway to the experiment. In case they did not answer as expected, they were given a second chance and asked to rethink their choice. If they, on their second chance, (again) opted for an utterance that was not meaningful, they were disqualified from participating in the study. However, if they answered 'None of these' or only picked one utterance where they were supposed to pick more than one, they were shown the instructions once again and could then proceed.

This 'mild' qualification mechanism was put in place after some participants had shown difficulty with the training items. They may have found it hard to conform to the rules of the task,



especially so, if they answered partially correctly on their first chance, but were then asked to reconsider their choices for both training items. A more nuanced mechanism retraining the participants only on items that they failed to answer as expected would have been a more sensible approach. This would have required very advanced filters, though, which would steer the participant from training item to training item based on their individual choice of utterances. In any case, participants who did not choose a meaningful option were disqualified. Participants who answered meaningfully, but did not meet the quantitative expectation for the answers were allowed to proceed. In the worst case scenario these participants continued only ever selecting one answer. In that case, multi-answer patterns would still become visible across participants. In a better scenario their restricted choice of one utterance where more than one was meaningful was item-specific and not due to misunderstood instructions.

To avoid this problem altogether, an alternative to presenting a choice of four utterances to all participants would have been to spread the four utterances across participants. That way, each participant would only see the context plus one utterance where they would have to indicate whether this particular utterance was meaningful or not. This would have sped up the experiment for the participants. However, as in many contexts several VOT were possible, this multi-verb distribution would only have become visible across participants, but not for individual participants. Given that the number of participants was relatively low, the data points for one VOT in one given context ('available'/'not available') would have been scarce. For that reason, every participant was shown the complete choice of utterances.

Having passed the training items, the participants were shown the 48 items, one at a time. The four utterances for each item were presented in a random order. There were two versions of the questionnaire and each participant was randomly assigned to one of them. The first version was randomised by computer and then checked for peculiar item sequences. The second version ordered the stimuli in reverse. The two versions were created to be able to avoid order bias. To ensure an even distribution of the two versions, towards the end of data collection, participants were only provided the version which so far had seen less participants.

To conclude the experiment, the participants were asked three post-hoc questions about their second languages and the respective level of proficiency, about their dialect of German/Swedish that they speak (if any) as well as about their highest level of education.

The questionnaire was accessed via a link in which the relevant language version was pre-specified. Thus, the whole questionnaire environment was completely monolingual.

#### 8.4 Coding

For each item and participant, Sosci Survey recorded, firstly, how many utterances the participant deemed meaningful, and, secondly, specifically which utterances (i.e. which VOT) that participant deemed meaningful. For research questions 1a and 1b, interested in the level of semantic specificity in VOT, the number of chosen VOT was used to gauge the level of semantic specificity. As Sosci Survey provided this number for each item and participant, no further coding was necessary.

For research question 2, the data from Sosci Survey was re-coded from ones (not chosen VOT) and twos (chosen VOT) to zeros (not chosen VOT) and ones (chosen VOT) for the purposes of descriptive statistical analyses (see 8.5).

#### 8.5 Analyses

The data was analysed with the statistical software R (R Core Team, 2019). For research question 1a, a Two-Way Omnibus ANOVA was run, with the number of chosen VOT per participant and item as the dependent variable, and native language as well as condition as independent variables. For research question 1b, follow-up pairwise comparisons within conditions across groups were done using One-Way ANOVA tests. Further, follow-up pairwise comparisons were conducted within groups across conditions using paired *t*-tests. In all follow-up tests the alpha value was adjusted to .0125 to avoid type 1 error.

For research question 2, only descriptive statistics were applied. To compare the actual choice of VOT, for each language, participant and condition, the number of choices of each verb was totalled up (e.g., Swedish participant x chose the verb *tänka* in condition 1 three times (out of a maximum of six times)). Subsequently, means were calculated for each verb and condition across all participants of one language.

## 9. Results

In the following, the results for both sets of research questions are presented separately.

### 9.1 Semantic Specificity in Verbs of Thinking

For the first set of research questions, a Two-Way Omnibus ANOVA was conducted to see whether there is a difference in semantic specificity in German and Swedish VOT. It revealed a main effect for group ( $F(1, 1432) = 57.71, p < .001$ ) such that German participants chose significantly more verbs on average ( $M = 1.55, SD = 0.87$ ) than Swedish participants ( $M = 1.28, SD = 0.63$ ). It also revealed a main effect for condition ( $F(3, 1432) = 63.66, p < .001$ ) and, crucially, an interaction between group and condition ( $F(3, 1432) = 30.40, p < .001$ ). Figure 1 shows the distribution of mean number of chosen VOT for German and Swedish for each condition (interaction).

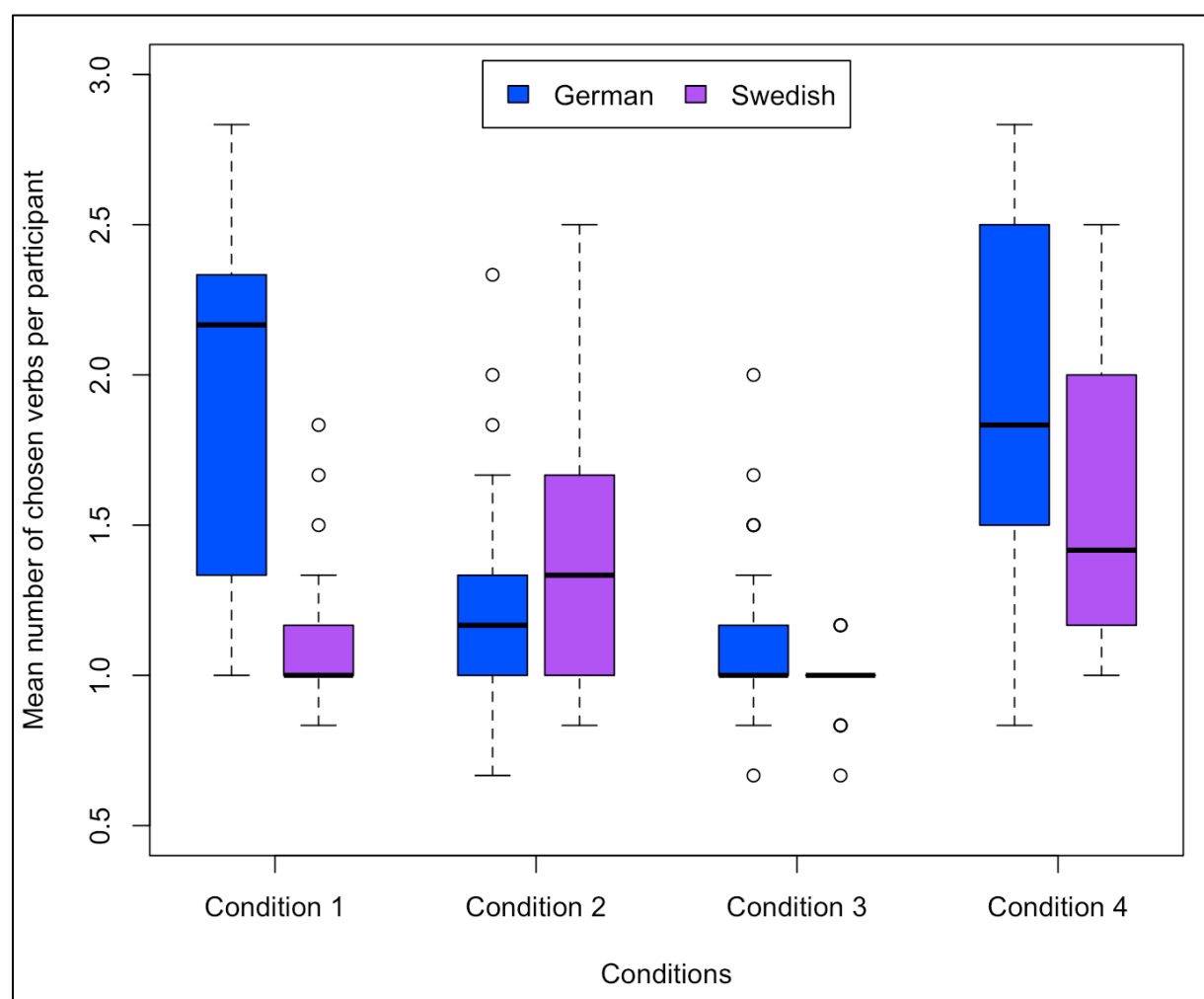


Figure 1. *Distribution of mean number of chosen verbs per condition.*

Follow-up pairwise comparisons of conditions between groups, using independent One-Way ANOVA tests, revealed that the means of German and Swedish participants significantly differ from each other in conditions 1, 3 and 4, but not in condition 2. Table 11 summarises the between-group results.

Table 11. *Pairwise comparisons within condition and between groups.*

Condition	German	Swedish	One-Way ANOVA results
1	$M = 1.94, SD = 0.85$	$M = 1.12, SD = 0.43$	$F(1, 358) = 131.32, p < .001$
2	$M = 1.26, SD = 0.71$	$M = 1.41, SD = 0.74$	$F(1, 358) = 3.57, p = .059$
3	$M = 1.12, SD = 0.53$	$M = 0.99, SD = 0.21$	$F(1, 358) = 8.99, p = .002$
4	$M = 1.90, SD = 1.00$	$M = 1.58, SD = 0.78$	$F(1, 358) = 11.3, p < .001$

Follow-up pairwise comparisons of conditions within groups, using paired *t*-tests, revealed that, at the adjusted  $p < .0125$  level, the means of German participants significantly differ between conditions 1 and 2, 1 and 3, 2 and 4, and 3 and 4, but not between conditions 1 and 4 and 2 and 3. The means of Swedish participants significantly differ between conditions 1 and 2, 1 and 4, 2 and 3, 2 and 4, and 3 and 4, but not between conditions 1 and 3. Table 12 summarises the within-group results.

Table 12. *Pairwise comparisons within group and between conditions.*

Conditions	<i>p</i> value German <sup>6</sup>	<i>p</i> value Swedish
Condition 1 – Condition 2	$p < .001$	$p < .001$
Condition 1 – Condition 3	$p < .001$	$p = .03$
Condition 1 – Condition 4	$p = .64$	$p < .001$
Condition 2 – Condition 3	$p = .17$	$p < .001$
Condition 2 – Condition 4	$p < .001$	$p = .008$
Condition 3 – Condition 4	$p < .001$	$p < .001$

<sup>6</sup> R does not provide a *t* value when conducting a pairwise.t.test().

## 9.2 Actual Verb Choice

For research question 2, descriptive statistics were used to calculate how many times the actual verbs were chosen. Figure 2 shows the distribution of verb choice over participants per verb and condition for German. Figure 3 shows the distribution of verb choice over participants per verb and condition for Swedish. The black horizontal bars represent the median, and the red dots represent the mean number of verb choice across all participants of one language.

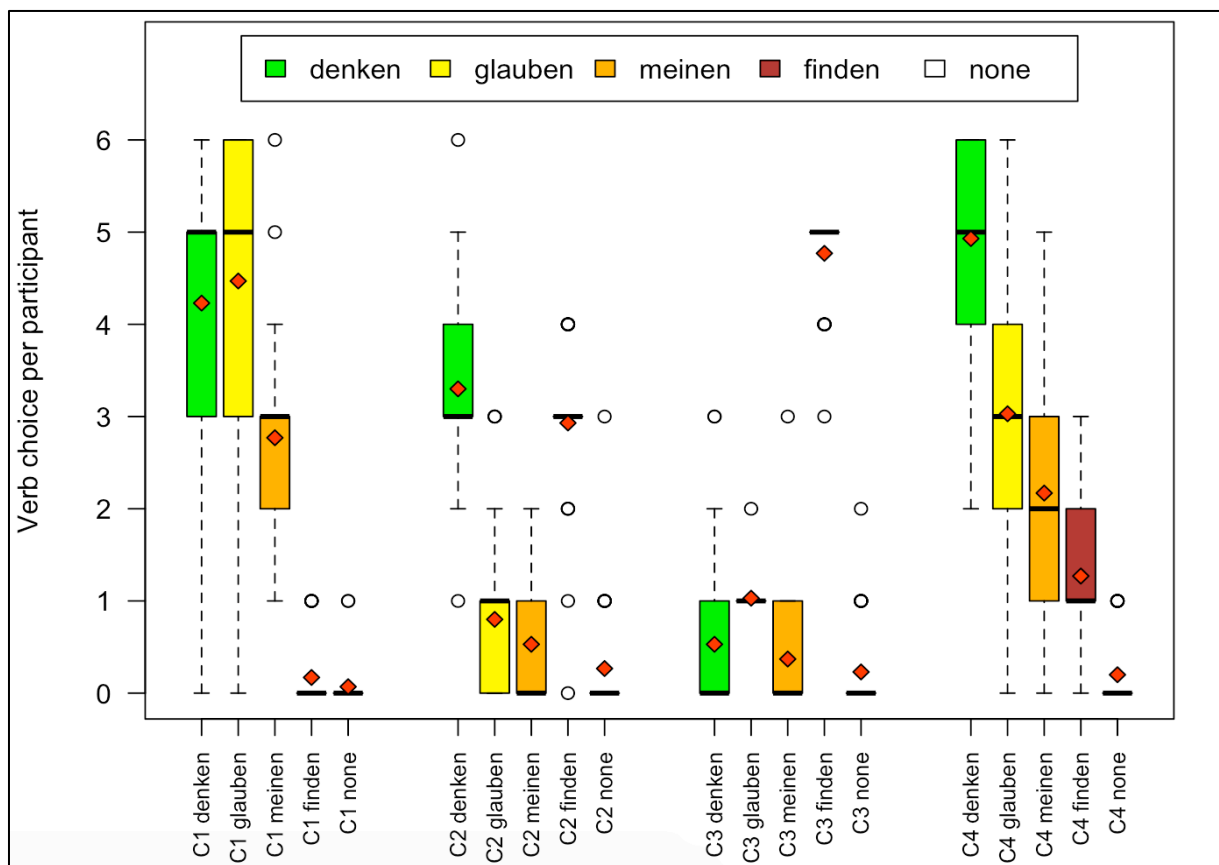


Figure 2. Distribution of verb choice over participants per verb and condition in German.

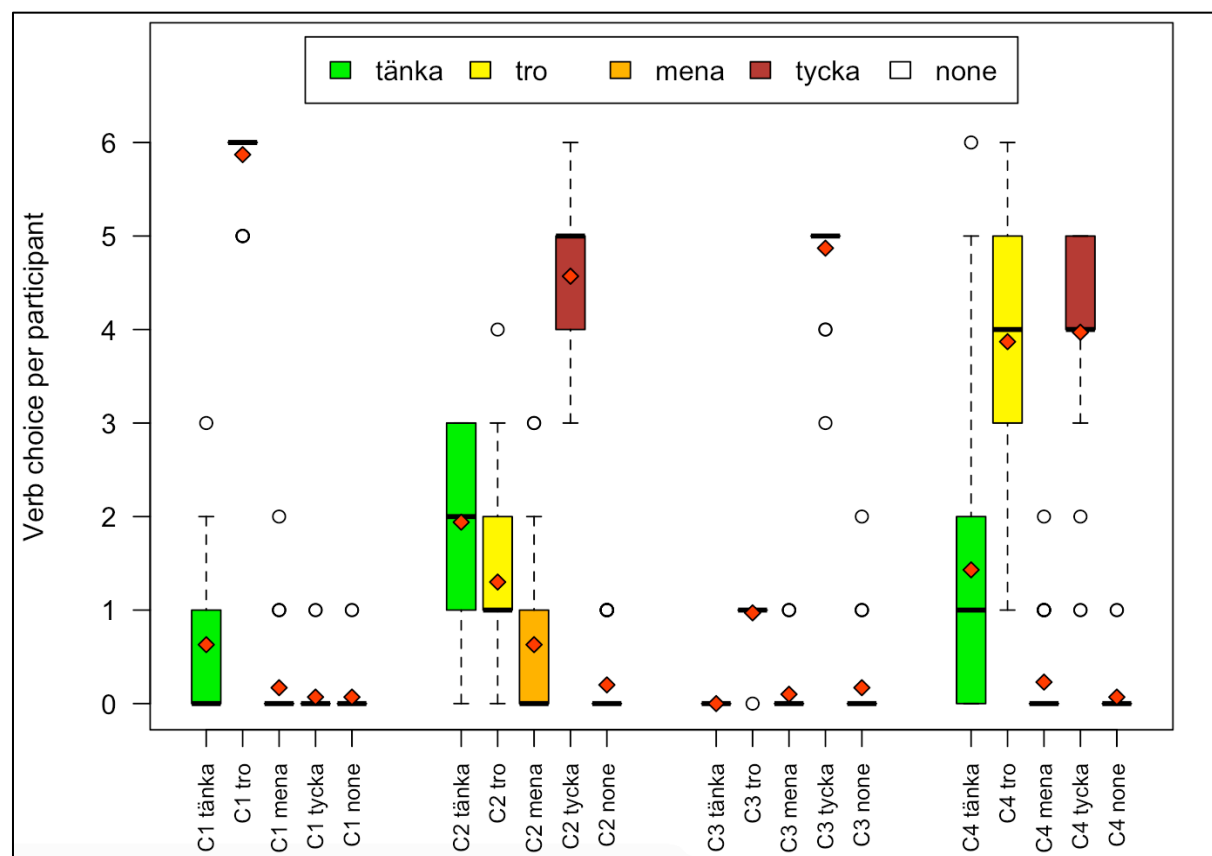


Figure 3. *Distribution of verb choice over participants per verb and condition in Swedish.*

### 9.3 Results Summary

Summarising, Swedish participants chose significantly fewer VOT than German participants across all conditions. Looking at the conditions separately (Figure 1), Swedish participants chose significantly fewer VOT than German participants in conditions 1, 3 and 4, the greatest difference in mean number of chosen verbs between German and Swedish participants being in condition 1. Here, the German mean is close to 2 while the Swedish mean is only slightly above 1. In condition 2, there was no significant difference between the means of both groups of native speakers.

In terms of the actual verb choice (Figure 2/3), in condition 1, German participants chose both *denken*, *glauben* and *meinen*, whereas Swedish participants overwhelmingly chose *tro*, as well as to a much lesser extent *tänka*. In condition 3, German participants chose predominantly *finden*, but, *glauben*, *meinen* and *denken* were also chosen to some extent. Swedish participants, on the other hand, chose predominantly *tycka*. Along with *tycka*, mainly only *tro* was chosen, although to a much lesser extent.

## 10. Discussion

This study set out to explore whether there is a difference in semantic specificity between German and Swedish VOT (research question 1a), and whether there is a link between two particular constraints, namely ‘intersubjective verifiability’ and ‘subjectivity’, and semantic specificity (research question 1b). Moreover, it aimed at investigating which of the German and Swedish VOT are sensitive to these two constraints (research question 2).

As for research question 1a, the results showed that, as predicted, Swedish participants chose significantly fewer VOT across all conditions than German participants. This suggests that there is a considerable difference in semantic specificity between German and Swedish VOT. Regarding research question 1b, the results suggest that there are links between the two tested constraints and the level of semantic specificity in German and Swedish VOT. As predicted, Swedish participants chose significantly fewer VOT than German participants in contexts operating with the constraint ‘intersubjective verifiability’. The mean verb choice of Swedish participants was slightly above 1 ( $M = 1.12$ ,  $SD = 0.43$ ), whereas the mean verb choice of German participants was close to 2 ( $M = 1.94$ ,  $SD = 0.85$ ). Thus, the data suggests that in the presence of the constraint ‘intersubjective verifiability’ Swedish behaves in a semantically specific way and German does not. In contrast, the second prediction, that participants of both languages would show an equally restricted choice of verbs in contexts operating with the constraint ‘subjectivity’, was not borne out. There was a significant difference in mean verb choice between German and Swedish participants. The third prediction, then, that participants of both languages would show a non-restricted choice of verbs in contexts that neither operate with ‘intersubjective verifiability’ nor with ‘subjectivity’, was borne out. In both languages, participants clearly chose more than one verb on average (German  $M = 1.90$ ,  $SD = 1.00$ , Swedish  $M = 1.58$ ,  $SD = 0.78$ ).

As for research question 2, the results showed that *tro* ( $M = 5.87$ ,  $SD = 0.34$ ) was overwhelmingly chosen by Swedish participants in contexts operating with ‘intersubjective verifiability’. However, the prediction that *tro* would be the only verb picked by Swedish participants in this condition, was not borne out, since *tänka* ( $M = 0.63$ ,  $SD = 0.85$ ) was also selected to some extent. Possible reasons for that unexpected result will be discussed in a qualitative post-hoc analysis in 10.2. German participants chose, as predicted, both *denken* ( $M = 4.23$ ,  $SD = 1.54$ ), *glauben* ( $M = 4.47$ ,  $SD = 1.48$ ) and *meinen* ( $M = 2.77$ ,  $SD = 1.22$ ) in this condition. The second

prediction that German participants would only choose *finden* and Swedish participants *tycka* in contexts operating with the constraint ‘subjectivity’ was not borne out. *Finden* ( $M = 4.77$ ,  $SD = 0.50$ ) and *tycka* ( $M = 4.87$ ,  $SD = 0.43$ ) were clearly the preferred choice, but *glauben* ( $M = 1.03$ ,  $SD = 0.18$ ) and *tro* ( $M = 0.97$ ,  $SD = 0.18$ ) were also picked in this condition. Moreover, in German *denken* ( $M = 0.53$ ,  $SD = 0.93$ ) and *meinen* ( $M = 0.37$ ,  $SD = 0.67$ ) were also chosen to a lesser extent.

### 10.1 Semantic Specificity in Verbs of Thinking

As said, there was a significant difference in mean verb choice between German and Swedish participants in contexts operating with the constraint ‘subjectivity’. The data reveals that the means per participant are more widespread for German ( $SD = 0.53$ ) than for Swedish ( $SD = 0.21$ ). Also, the six outliers among German participants spread much more widely than the seven outliers among the Swedish participants (note that they are plotted on top of each other in Figure 1).

Despite the significant difference in means, the German mean is still close to 1 ( $M = 1.12$ ,  $SD = 0.53$ ). Follow-up pairwise comparisons further revealed that the German mean in that condition significantly differed from the means in condition 1 and 4. Taken together, this suggests that German is also sensitive to the ‘subjectivity’ constraint, but not to the same extent as Swedish. While Swedish appears to be strictly sensitive to it ( $M = 0.99$ ,  $SD = 0.21$ ), German does in some cases allow for more than one verb (see 10.2 for a qualitative post-hoc analysis). This finding can further be seen a reflection of the overall lower level of semantic specificity in German VOT in comparison to Swedish VOT.

### 10.2 Actual Verb Choice

While Swedish participants overwhelmingly chose *tro* in contexts operating with ‘intersubjective verifiability’, *tänka* was also picked to some extent. *Tänka* was chosen mainly in one specific item, presented in (12a-b).



(12a) *Anna och du tittar på tv. Plötsligt får du ett minne av din barndom. Spontant berättar du för Anna:*

- När jag var barn tänkte jag hela tiden att det var små människor som bodde i tv-apparaten.*
- När jag var barn trodde jag hela tiden att det var små människor som bodde i tv-apparaten.*
- När jag var barn menade jag hela tiden att det var små människor som bodde i tv-apparaten.*
- När jag var barn tyckte jag hela tiden att det var små människor som bodde i tv-apparaten.*
- Ingen av dessa.*

(12b) *You and Anna are watching television. All of a sudden you remember something from your childhood. You spontaneously tell Anna:*

- When I was a child I always thought/believed/... that there were small people living inside the TV.*

A post-hoc analysis revealed that, in this specific item, *tänka* was picked 0.43 times on average ( $SD = 0.50$ ), compared to *tro* which was chosen 0.93 times on average ( $SD = 0.25$ ). Inspecting the item, one could argue that the temporal adverb *hela tiden* ('all the time') makes it possible to conceptualise the whole thought as 'temporally-grounded' (see also (9) in 6.2). This, however, would mean that *hela tiden* is understood as a hyperbole of 'a lot of times', since speakers cannot possibly have had this thought in their minds throughout their whole childhood. If, on the other hand, *hela tiden* is conceptualised as 'all the time', only *tro* should be available, since what is expressed in that case is a timeless belief rather than an 'temporally-grounded' mental activity. Thus, the possibility of two different interpretations of the temporal adverb in this item may explain the fact that not only *tro*, but to some extent also *tänka* was chosen. Another option, of course, is that the constraint 'temporal groundedness', which was not explicitly addressed in this study, may not be as strict as claimed in the literature (Goddard & Karlsson, 2003).

In German, the constraint 'intersubjective verifiability' did apparently not result in semantic specificity. Rather, both *denken*, *glauben* and *meinen* were chosen (although to different degrees). This fact points to the great semantic overlap of the three verbs. However, it does not follow from this that they are synonymous or even near-synonymous. Given the apparent irrelevance of 'intersubjective verifiability' as a constraint in German, one might as well speak of loose contexts in condition 1 for German, which, in turn, afforded German participants to flexibly form their own understanding of the presented context and linguistically react to it

according to their own conceptualisation of the situation. Thus, there may well be constraints delineating these three verbs, but ‘intersubjective verifiability’ does not appear to be one of them.

Turning to the other tested constraint, unexpectedly *glauben* and *tro* were also picked in contexts operating with the constraint ‘subjectivity’. It is the same item in both languages which caused this deviation from the general trend showing *finden* and *tycka* as the clearly preferred choice. The item in question is presented in (13a-c).

(13a) *Zusammen mit Anna bist du auf einer Wanderung in den Bergen. Es ist sehr heiß, die Sonne prallt erbarmungslos vom Himmel. Du hast schon lange nichts mehr getrunken. Plötzlich wird dir schwarz vor Augen. Panisch sagst du zu Anna:*

- Ich denke, ich werde ohnmächtig.*
- Ich glaube, ich werde ohnmächtig.*
- Ich meine, ich werde ohnmächtig.*
- Ich finde, ich werde ohnmächtig.*
- Nichts davon passt.*

(13b) *Du och Anna är ute och vandrar i bergen. Det är mycket varmt och solen skiner starkt. Det var länge sedan du drack någonting. Plötsligt blir allt svart. Du skriker i panik:*

- Jag tänker att jag svimmar.*
- Jag tror att jag svimmar.*
- Jag menar att jag svimmar.*
- Jag tycker att jag svimmar.*
- Ingen av dessa.*

(13c) *You and Anna are hiking in the mountains. It is very hot and the sun is blazing down. It has been a long time since you last drank something. All of a sudden, everything before your eyes goes black. You scream in panic:*

- I think/... I am about to faint.*

A post-hoc analysis revealed that, in this specific item, both *glauben* and *tro* were picked 0.97 times on average (*SD* for both groups = 0.18). On closer inspection, this whole item turns out not to operate with the constraint ‘subjectivity’ (as operationalised in 7.1) at all. The favoured utterance with *glauben/tro* does express something purely subjective that is not intersubjectively verifiable, but, crucially, it expresses a subjective feeling rather than an opinion/assessment/evaluation. Hence, whereas both languages seem to show semantic specificity in the items of this condition (yet with a significant difference in mean verb choice, see discussion in 10.1),

the prediction that participants of both languages would only pick *finden/tycka* was clearly not borne out. This, however, is merely the result of a design fault.

The item presented in (13a-c) is interesting for a second reason. As mentioned, German participants also chose *denken* to some extent in condition 3. A post-hoc analysis revealed that, in the item presented in (13a-c), *denken* was picked 0.3 times on average ( $SD = 0.47$ ). This may testify to the great semantic overlap between *glauben* and *denken*, but critically, it also contradicts what was labelled as a ‘promising lead’ in delineating *denken* from *glauben* in the theoretical discussion (see 3.3). Framing a direct bodily experience that is felt rather than thought may not be the clear distinctive feature of *glauben* as which it was theorised.

There is one more item among the items operating with the constraint ‘subjectivity’ where German participants surprisingly often opted for other VOT than *finden*. The item in question is presented in (14a-b).

(14a) *Du warst beim Friseur und hast dir die Haare schneiden lassen. Als du nach Hause kommst, fragst du Anna:*

- Denkst du, meine neue Frisur steht mir?*
- Glaubst du, meine neue Frisur steht mir?*
- Meinst du, meine neue Frisur steht mir?*
- Findest du, meine neue Frisur steht mir?*
- Nichts davon passt.*

(14b) You were at the hairdresser’s and had your hair cut. As you come home, you ask Anna:

- Do you think/... my new haircut looks good on me?*

For this particular item, a post-hoc analysis revealed that while *finden* was chosen by all participants (i.e.,  $M = 1$ ,  $SD = 0$ ), *denken* was opted for 0.17 times on average ( $SD = 0.38$ ) and *meinen* 0.3 times on average ( $SD = 0.47$ ). For comparison, Swedish participants picked *tycka* 0.97 times on average ( $SD = 0.18$ ), but, crucially, no other VOT was selected. The average numbers of chosen VOT other than *finden* in German are not very high, but they still indicate that the ‘subjectivity’ constraint is not as forceful in German as it is in Swedish. This, in turn, may explain the significant difference in means between German and Swedish in condition 3 (see 10.1).

Disregarding the faulty item (13a-c) and the relatively low average numbers for other German VOT than *finden*, the data still suggests that both languages are sensitive to the constraint ‘subjectivity’, resulting in the availability of (predominantly) only *finden* in German and *tycka* in Swedish.

Regarding the ‘subjectivity’ constraint, it is also noticeable that *mena* ( $M = 0.1$ ,  $SD = 0.30$ ) is almost never chosen in the items operating with this constraint. Even across all conditions, *mena* is very seldomly picked. This is an interesting finding considering the semantic overlap of *mena* with *tycka* discussed in 4.4. One possible explanation for this result is that the experimental items were primarily designed with regard to the verbal complex *tycka-tro(-tänka)*. Thus, *mena* may well function as a VOT, but it is not of any importance in the specific items of this study.

This study only probed whether there is a link between semantic specificity and the two constraints ‘intersubjective verifiability’ and ‘subjectivity’. However, another constraint, ‘temporal groundedness’, hypothesised as being crucial for the Swedish VOT (see 2.1/4.1), may inadvertently have been built into the items as well. As seen, *denken*, very much in contrast to *tänka*, is frequently picked in items operating with the constraint ‘intersubjective verifiability’, that is, in contexts where the utterances do *not* express ‘temporally-grounded’ thoughts, but rather beliefs and speculations (disregarding the item presented in (12a-b)). Hence, the data suggests that German is not sensitive to the constraint ‘temporal groundedness’ and that ‘temporal groundedness’ is yet another constraint where German and Swedish VOT differ. Note, that this presupposes the validity of the constraint for Swedish. This study cannot empirically corroborate that the Swedish VOT are sensitive to this constraint for the simple reason that it was not examined in this study.

### 10.3 Control Conditions

Finally, a few remarks need to be made about the two control conditions in this study. The fact that the prediction about control condition 4 was borne out is not very surprising, as the contexts were deliberately looser (compared to the contexts in conditions 1, 2 and 3), allowing for more flexible interpretations and hence the choice of more than one VOT.

However, the other control condition, condition 2, where German participants were expected to choose fewer verbs than Swedish participants, failed. There was no significant difference in

mean verb choice between German and Swedish participants. The items in this control condition were a ‘colourful collection’ of contexts where the pilot study indicated that German would be semantically specific in allowing for only one verb and Swedish semantically more general (which would have ensured the orthogonality of the experimental design, see 8.2). This pattern only proved true for two out of six items, namely those two where the *one* German verb amounts to a conventionalised use (e.g., *Was werden die Leute von uns denken/\*glauben/\*meinen/\*finden?*, ‘What will people think/say about us?’). Other than that, the items in this condition were simply the wrong ones to capture this kind of semantic behaviour in German and Swedish VOT. The question remains whether there exists a constraint that German VOT are sensitive to, resulting in semantic specificity, but Swedish VOT are not. In any case, this finding highlights the importance of piloting.

#### 10.4 Taking All Findings Together

In essence, this study leads to the conclusion that the German VOT are less semantically specific than the Swedish VOT. Given the constraint ‘intersubjective verifiability’, the data suggests that Swedish is semantically specific in allowing for only one VOT, namely *tro*. German, on the other hand, does not seem to be sensitive to this constraint, as both *denken*, *glauben* and *meinen* appear to operate in such contexts. As for the other constraint, ‘subjectivity’, the data suggests that Swedish is again semantically specific in allowing for only one VOT, namely *tycka*. This constraint, then, appears to result in a similarly, yet not identically high level of semantic specificity in German. *Finden* seems to be *the* verb operating in such contexts, but *denken* and *meinen* appear to play a minor role as well.

Hence, there is one constraint that the two languages seem to share, ‘subjectivity’, and one where they fundamentally differ, ‘intersubjective verifiability’. The fact that the discriminating constraint, ‘intersubjective verifiability’ does not appear to be relevant in German may explain to a great extent the overall lower level of semantic specificity found for German VOT, when compared to Swedish VOT.

On a grander level, then, three findings from this study essentially cast doubt on the idea that the DOT in the world’s languages is structured by universal guiding principles. First of all, the Swedish DOT is presumably carved up into a very specific trichotomous ‘conceptual landscape’. The Swedish language appears to strictly differentiate between at least three types of thinking, delineated by three constraints (two of which this study empirically corroborates) and

expressed virtually exclusively through *tänka*, *tro* and *tycka*. Secondly, also the German DOT appears to be characterised by a relatively strict distinction between contexts of ‘subjectivity’ and other contexts expressing different types of thinking. Thus, even in German, a very specific constraint seems to carve up the German DOT. Thirdly, and this is perhaps the most important point, this study analysed VOT of two closely related languages. While many commonalities between German and Swedish were found, critically, the study showed that there are striking differences as well. Hence, if the DOT of two typologically similar languages is so dissimilar, how sure can one be with regard to universality claims made about the conceptualisation and expression of THINKING in *all* the world’s diverse languages?

This study has not so much focused on thinking ‘in its core sense’, postulated as the THINK prime by the NSM. This would have excluded a priori the verbs *glauben*, *meinen*, *finden* and *tro*, *tycka*, *mena*, verbs that evidently are essential VOT in German and Swedish, respectively. The findings of this study could be seen as compatible with Fortescue’s more nuanced tripartite division of the DOT, where each of the three constraints in Swedish marks off one ‘natural seam’. In German, the ‘subjectivity’ constraint would delimitate seam 2 (‘thinking as considering/judging’) from seams 1 (‘thinking as believing’) and 3 (‘thinking as unspecified/general mental activity’) which, in turn, do not seem to represent two clearly discernible categories but rather one big malleable semantic space which is varyingly expressed by *denken*, *glauben* and *meinen*. However, the compatibility of the German and Swedish DOT with Fortescue’s model is not a surprise: As mentioned, his model was created to be able to account for the Danish DOT which closely resembles the Swedish one. Given the clear differences in how German and Swedish carve up their DOT, chances are high that an in-depth empirical analysis of the domain in other, typologically unrelated languages, will not fit as perfectly into Fortescue’s three ‘natural seams’.

Ultimately, the question arises as to what THINKING really is. In need of an umbrella label, this study operated with the term ‘verbs of thinking’, an established term in the literature. The label is inspired by the English case, though. In light of the apparently strict distinction between three types of thinking (again relying on this umbrella label) in Swedish and two in German, one might ask whether ‘thinking’ really is the right term when what is expressed is, for example, a purely subjective opinion, or a long-held belief about some phenomenon in the world? Also, one has to consider the possibility that not only the linguistic expressions in this quintessential

domain vary from language to language, but that the broader concept of what THINKING is, and what falls under it, varies between language communities as well.

### 10.5 Outlook

Future studies could empirically investigate the constraint ‘temporal groundedness’ and its relevance for the Swedish DOT (and, of course, for other languages, too). Also, one could take a closer look at the German VOT *denken*, *glauben* and *meinen*, investigating where the semantic dividing lines between these three verbs go. All three verbs showed rather high dispersion measures, making it further interesting to look at where these differing preferences originate from. Moreover, one could attend to the notion of ‘constraint’, used somewhat uncritically in this study, and scrutinise more specifically on which linguistic level the discussed constraints constrain the semantics of these VOT and/or their use in discourse.

Last but not least, the possibility that VOT play different pragmatic roles in German and Swedish discourse could be examined, thereby approaching the hypothesised existence of a Swedish-specific ‘Way of Thinking’ involving the verbal ‘trichotomy’ *tänka-tro-tycka* (Goddard & Karlsson, 2003, p. 6).

## 11. Conclusion

This study sought to explore both commonalities and differences in German and Swedish VOT. The results strongly suggest that the German VOT are less semantically specific than the Swedish VOT. This presumable difference in semantic specificity means in practice that there are overall more contexts in which Swedish only allows for one specific verb, whereas German allows for more than one. This finding, in turn, appears to be a reflection of the differing sensitivity to certain constraints in German and Swedish VOT. When what is expressed is a purely subjective opinion/assessment/evaluation that cannot be verified by anyone else, both German and Swedish appear to show semantic specificity in allowing for (predominantly) only one verb: *finden* and *tycka*, respectively. However, when what is expressed is a statement about the world that can be checked for its truth by other interactants, only Swedish seems to show semantic specificity in exclusively allowing for one verb: *tro*. German, on the other hand, does not appear to be sensitive to this constraint, allowing for both *denken*, *glauben* and *meinen* in such contexts.

Much of the previous research both into the universality of VOT as well as into German and Swedish VOT has been based on introspection, dictionary entries and, occasionally, on corpus data. This is not the most solid ground to make claims from. This study, in contrast, used a new experimental method to investigate VOT in two specific languages. The contextualised choice task employed in this study had the most reliable source for how anything works in a given language, that is, native speakers, judge in which contexts the investigated VOT were meaningful. It is the use of this novel, experimental approach which leads to the above-mentioned conclusions and contributes to the field with new and robust empirical data.

The commonalities between German and Swedish VOT that become apparent in this new set of data are not very surprising. German and Swedish are two typologically closely related languages, after all. Rather, the fact that they differ in such striking ways is astonishing and throws doubt on the idea that all the world's languages share the way they conceptualise and express THINKING. While thinking as a cognitive activity/state is what makes us human, this study prompts that thinking along the semantic-pragmatic-conceptual lines of German and Swedish is what makes us members of the respective language community.



## References

- Adamou, E., De Pascale, S., Garcia-Markina, Y., & Padure, C. (2018). Do bilinguals generalize *estar* more than monolinguals and what is the role of conceptual transfer? *International Journal of Bilingualism*, 1–32. <https://doi.org/10.1177/1367006918812175>
- Aijmer, K. (1997a). Epistemic modality as a discourse phenomenon. A Swedish-English cross-language perspective. *Language and Computers*, 19, 215–226.
- Aijmer, K. (1997b). I think – An English modal particle. *Modality in Germanic Languages: Historical and Comparative Perspectives*, 99(1), 1–47.
- Berlin-Brandenburgische Akademie der Wissenschaften. (2019). *Digitales Wörterbuch der deutschen Sprache*. Retrieved from [www.dwds.de/wb/denken](http://www.dwds.de/wb/denken), [www.dwds.de/wb/glauben](http://www.dwds.de/wb/glauben), [www.dwds.de/wb/meinen](http://www.dwds.de/wb/meinen), [www.dwds.de/wb/finden](http://www.dwds.de/wb/finden). Date of retrieval: 23 April 2019.
- Charipova-Akgül, M. (2011). *Jag tänker att det blir fint väder imorgon. Andraspråksinlärares användning av svenska kognitionsverben tänka, tro och tycka* (Examensarbete). Uppsala Universitet, Uppsala.
- Croft, W., & Cruse, D. A. (2004). *Cognitive linguistics*. Cambridge, U.K.; New York: Cambridge University Press.
- Fortescue, M. (2001). Thoughts about thought. *Cognitive Linguistics*, 12(1), 15–45. <https://doi.org/10.1515/cogl.12.1.15>.
- Goddard, C. (2003). Thinking across languages and cultures: Six dimensions of variation. *Cognitive Linguistics*, 14(2/3), 109–140. <https://doi.org/10.1515/cogl.2003.005>
- Goddard, C. (2008). Natural Semantic Metalanguage: The state of the art. *Cross-Linguistic Semantics*, 1–34. <https://doi.org/10.1075/slcs.102.05god>
- Goddard, C., & Karlsson, S. (2003). *Re-thinking THINK: Contrastive semantics of Swedish and English*. Presented at the Proceedings of the 2003 Conference of the Australian Linguistic Society.

- Grice, P. (1975). Logic and conversation. In P. Cole (Ed.), *Speech Acts*. New York: Academic Press.
- Hemforth, B., Mertins, B., & Fabricius-Hansen, C. (2014). Introduction: Meaning across languages. In B. Hemforth, B. Mertins, & C. Fabricius-Hansen (Eds.), *Psycholinguistic Approaches to Meaning and Understanding Across Languages* (pp. 1–21). Springer.
- Jarvis, S., & Pavlenko, A. (2008). *Crosslinguistic influence in language and cognition*. New York: Routledge.
- Kärkkäinen, E. (2003). *Epistemic stance in English conversation: A description of its interactional functions, with a focus on I think*. Amsterdam; Philadelphia: John Benjamins Publishing.
- Karlsson, S. (2006). *Positioneringsfraser i interaktion. Syntax, prosodi och funktion*. Institutionen för svenska språket, Göteborgs universitet.
- Lee, P. (2003). 'Feeling of the mind' in talk about thinking in English. *Cognitive Linguistics*, 14(2/3), 221–250. <https://doi.org/10.1515/cogl.2003.009>
- Majid, A., Gullberg, M., Staden, M. van, & Bowerman, M. (2007). How similar are semantic Categories in closely related Languages? A comparison of cutting and breaking in four Germanic languages. *Cognitive Linguistics*, 18(2), 179–194. <https://doi.org/10.1515/COG.2007.007>.
- Mullan, K., & Karlsson, S. (2012). Subjectivity in contrast: A cross-linguistic comparison of 'I think' in Australian English, French and Swedish. *Subjectivity in Language and Discourse*, 271–294. [https://doi.org/10.1163/9789004261921\\_013](https://doi.org/10.1163/9789004261921_013)
- Narasimhan, B., Kopecka, A., Bowerman, M., Gullberg, M., & Majid, A. (2012). Putting and taking events: A crosslinguistic perspective. In A. Kopecka & B. Narasimhan (Eds.), *Events of putting and taking: A crosslinguistic perspective* (pp. 1–18). Amsterdam; Philadelphia: John Benjamins Publishing.
- Palmer, F. R. (2001). *Mood and Modality*. New York: Cambridge University Press.
- Palmer, G. B. (2003). Introduction. *Cognitive Linguistics*, 14(2–3), 97–108. <https://doi.org/10.1515/cogl.2003.011>.

- R Core Team. (2019). *R: A language and environment for statistical computing*. Retrieved from [www.R-project.org](http://www.R-project.org).
- Svenska Akademien (Ed.). (2009). *Svensk ordbok* (Edition 2009). Retrieved from [svenska.se/so/?id=56771&pz=7](http://svenska.se/so/?id=56771&pz=7), [svenska.se/so/?id=55627&pz=7](http://svenska.se/so/?id=55627&pz=7), [svenska.se/so/?id=56568&pz=7](http://svenska.se/so/?id=56568&pz=7), [svenska.se/so/?id=32886&ref=knr577730](http://svenska.se/so/?id=32886&ref=knr577730). Date of retrieval: 23 April 2019.
- Viberg, Å. (1980). *Tre semantiska fält i svenskan och några andra språk*. Institutionen för lingvistik, Stockholms universitet.
- Viberg, Å. (2004). The lexical typological profile of Swedish mental verbs. *Languages in Contrast*, 5(1), 121–157. <https://doi.org/10.1075/lic.5.1.09vib>
- Voss, V. (2009). *Denken, verstehen, wissen: Eine sprachvergleichende Untersuchung zu lexikalischen Bezeichnungen mentaler Tätigkeiten, Vorgänge und Zustände*. Münster: Verlag-Haus Monsenstein und Vannerdat.
- Wierzbicka, A. (1998). THINK - A universal human concept and a conceptual primitive. *Poznan Studies in the Philosophy of the Sciences and the Humanities*, 62, 297–310.
- Wierzbicka, A. (2009). The theory of the mental lexicon. In *Handbooks of Linguistics and Communication Science: Vol. 32.1-32.2. Die slavischen Sprachen: Ein internationales Handbuch zu ihrer Struktur, ihrer Geschichte und ihrer Erforschung* (pp. 884–863). New York: De Gruyter Mouton.
- Wissenschaftlicher Rat der Dudenredaktion. (2019). *Duden online*. Retrieved from [www.duden.de/rechtschreibung/denken](http://www.duden.de/rechtschreibung/denken), [www.duden.de/rechtschreibung/glauben](http://www.duden.de/rechtschreibung/glauben), [www.duden.de/rechtschreibung/meinen](http://www.duden.de/rechtschreibung/meinen), [www.duden.de/rechtschreibung/finden](http://www.duden.de/rechtschreibung/finden). Date of retrieval: 23 April 2019.
- Zeschel, A. (2017). Denken und wissen im gesprochenen Deutsch. In A. Deppermann, N. Proske, & A. Zeschel (Eds.), *Verben im interaktiven Kontext: Bewegungsverben und mentale Verben im gesprochenen Deutsch* (Vol. 74, pp. 249–335). Tübingen: Narr Francke Attempto Verlag.

## Appendix A. Participant Variables

Key:

**Native Language:** *ger* = German, *swe* = Swedish

**Command of English/opposite language (i.e., Swedish/German):** 1 = None, 2 = Basic, 3 = Intermediate, 4 = Advanced

**Dialect group for German participants:** 2 = Standard German ('Hochdeutsch'), 3 = Dialect from Southern Germany, 4 = Dialect from Middle Germany, 5 = Dialect from Northern Germany, 6 = Austrian dialect, 7 = Swiss German dialect, 8 = Some other dialect

**Dialect group for Swedish participants:** 2 = Standard Swedish ('Rikssvenska'), 3 = Dialect from Southern Sweden, 4 = Dialect from Middle Sweden, 5 = Dialect from Northern Sweden, 6 = Dialect from Gotland, 7 = Finland Swedish, 8 = Some other dialect

**Educational level:** 1 = Nine years of school, 2 = Twelve years of school or professional training ('Lehre'), 3 = Less than three years of university education, 4 = Three years or more of university education, 5 = Doctoral education.

PARTICIPANT	QUESTIONNAIRE VERSION	NATIVE LANGUAGE	COMMAND OF ENGLISH	COMMAND OF OPPOSITE LANGUAGE	DIALECT GROUP	SPECIFIC DIALECT	EDUCATIONAL LEVEL
1	2	ger	3	1	2		4
2	1	ger	3	1	3	Südhessisch	4
3	1	ger	4	1	2	Ein wenig hessischer Dialekt	4
4	2	ger	3	1	2		4
5	2	ger	4	1	7	Baseldeutsch, Nieder- und Hochalemannisch	4
6	2	ger	4	1	7		4
7	1	ger	4	1	7		4
8	1	ger	4	1	7	Baseldeutsch	4
9	2	ger	4	1	7	Baseldeutsch	4
10	2	ger	4	1	7		4
11	2	ger	3	1	7	Baselbieterdeutsch	2
12	1	ger	4	1	7	Baseldeutsch	3
13	2	ger	3	1	2		4
14	1	ger	4	1	7	Niederalemannisch	3
15	2	ger	3	1	7		2
16	1	ger	3	1	4	Gothsch	4
17	1	ger	3	1	7	Oberaargauer Dialekt	4
18	2	ger	4	1	7	Baseldeutsch	4
19	1	ger	3	1	7	Baseldeutsch, Hochdeutsch mit Brandenburgischem Einschlag	2
20	1	ger	4	1	7	Baseldeutsch	3

21	1	ger	3	1	7	Baseldeutsch	4
22	2	ger	4	1	2		4
23	2	ger	3	1	2		4
24	2	ger	4	1	2		4
25	1	ger	4	1	7		4
26	1	ger	4	1	2		4
27	1	ger	4	1	2		4
28	2	ger	4	1	3	Schwäbisch	4
29	1	ger	2	1	8	Sächsisch	2
30	2	ger	4	1	8	Pfälzisch	4
31	1	swe	4	1	4	Någon form av svårplacerad rikssvenska/stockholmska/sörm-ländska med stora inslag av termer och ord från göteborgska, gotländska och dalmål.	4
32	1	swe	4	1	4	Värmländska, Karlstadmål	4
33	2	swe	4	1	8	Stockholmska	3
34	1	swe	4	1	3	Malmöitiska	4
35	1	swe					
36	2	swe	4	1	3		5
37	1	swe	4	1	2		4
38	1	swe	4	2	3	Malmöitiska	4
39	1	swe	3	2	3	Skånska	3
40	1	swe	4	2	3	Bohusländska	3
41	1	swe	4	1	3	Skånska	4
42	2	swe	4	1	2		3
43	1	swe	4	1	3	Skånska	4
44	2	swe	4	2	3	Skånska, Mittskåne	4
45	1	swe	3	1	4	Värmländska	2
46	1	swe	3	1	4	Värmländska	4
47	1	swe	3	1	3	Skånska	2
48	2	swe	4	2	3	Skånska	4
49	2	swe	3	1	2		4
50	2	swe	4	1	3	Lundensiska/skånska	4
51	2	swe	4	1	3	Skånska	4
52	1	swe	3	1	5		4
53	1	swe	4	1	5	Norrländska	4
54	2	swe	4	1	4	Uppländska	3
55	2	swe	4	2	3	Skånska	4
56	2	swe	4	2	3	Skånska	4
57	2	swe	2	1	3	Skånska	4
58	2	swe	3	1	3	Skånska	4
59	2	swe	4	1	3	Skånska	2
60	2	swe	4	1	2		4

## Appendix B. Materials

### True items

Condition	Item	German	Swedish
1	1	<p><i>Context:</i> Du und Anna seid gerade erst aufgestanden. Ihr esst Frühstück und schaut dabei aus dem Fenster. Es ist noch früh am Morgen, die Sonne scheint aber schon. Du fragst Anna:</p> <p><i>Four different verb choices:</i> Denkst/Glaubst/Meinst/Findest du es ist kalt draussen?</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du och Anna har precis gått upp. Ni äter frukost och tittar ut genom fönstret. Det är tidigt på morgonen, men solen skiner redan. Du frågar Anna:</p> <p><i>Four different verb choices:</i> Tänker/Tror/Menar/Tycker du att det är kallt ute?</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
1	2	<p><i>Context:</i> Gestern hast du deinen Kollegen Peter gefragt, was die Hauptstadt von Frankreich sei. Er antwortete: Berlin. Nun erzählst du Anna davon:</p> <p><i>Four different verb choices:</i> Er dachte/glaubte/meinte/fand, Berlin sei die Hauptstadt von Frankreich.</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Igår frågade du din kollega Peter vilken Frankrikes huvudstad är. Han svarade Berlin. Nu berättar du det för Anna:</p> <p><i>Four different verb choices:</i> Han tänkte/trodde/menade/tyckte att Berlin var Frankrikes huvudstad.</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
1	3	<p><i>Context:</i> Du möchtest am Wochenende unbedingt Schlitten fahren. Anna sagt, dass der Schnee bis dann bestimmt weggeschmolzen ist. Du entgegnest:</p> <p><i>Four different verb choices:</i> Ich denke/glaube/meine/finde schon, dass der Schnee bleiben wird.</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du hoppas verkligen kunna åka pulka i helgen. Anna säger att snön kommer att smälta bort till dess, men du svarar:</p> <p><i>Four different verb choices:</i> Jag tänker/tror/menar/tycker faktiskt att snön blir kvar.</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
1	4	<p><i>Context:</i> Anna sagt zu dir, dass sie heute unbedingt deine Schwester Clara treffen muss, aber sie weiß nicht, wo sich Clara befindet. Wenn du dich recht erinnerst, hat dir Clara erzählt, sie sei heute den ganzen Tag zuhause. Du antwortest Anna:</p> <p><i>Four different verb choices:</i> Ich denke/glaube/meine/finde, sie ist heute zuhause.</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Anna säger till dig att hon absolut måste träffa din syster Clara idag, men hon vet inte var Clara är. Om du minns rätt har Clara sagt till dig att hon skulle vara hemma hela dagen. Du svarar Anna:</p> <p><i>Four different verb choices:</i> Jag tänker/tror/menar/tycker att hon är hemma idag.</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
1	5	<p><i>Context:</i> Du schaust zusammen mit Anna Fernsehen. Plötzlich erinnerst du dich an etwas aus deiner Kindheit. Spontan erzählst du Anna davon:</p> <p><i>Four different verb choices:</i> Als Kind habe ich immer gedacht/geglaubt/gemeint/gefunden, dass im Fernseher kleine Menschen wohnen.</p>	<p><i>Context:</i> Anna och du tittar på tv. Plötsligt får du ett minne av din barndom. Spontan berättar du för Anna:</p> <p><i>Four different verb choices:</i> När jag var barn tänkte/trodde/menade/tyckte jag hela tiden att det var små människor som bodde i tv-apparaten.</p>

		<i>Option to not select any verb:</i> Nichts davon passt.	<i>Option to not select any verb:</i> Ingen av dessa.
1	6	<p><i>Context:</i> Beim Frühstück mit Anna blätterst du in der Zeitung und liest einen kurzen Artikel, der von einem eben entdeckten Planeten in einer fernen Galaxie handelt. Bislang weiß man noch nichts Konkretes über den Planeten. Du erzählst Anna davon und fragst sie:</p> <p><i>Four different verb choices:</i> Denkst/Glaubst/Meinst/Findest du, dass es auf diesem Planeten Leben gibt?</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Vid frukosten med Anna bläddrar du igenom tidningen och läser en kort artikel som handlar om att forskare har hittat en ny planet i en avlägsen galax. Man vet ännu ingenting om vad det är för slags planet. Du sammanfattar artikeln för Anna och frågar henne:</p> <p><i>Four different verb choices:</i> Tänker/Tror/Menar/Tycker du att det finns liv på den här planeten?</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
2	1	<p><i>Context:</i> Wenn es etwas gibt, worüber du besonders viel weißt, dann ist das Wein. Du pflegst jeden Abend ein Glas Wein zu trinken. Als Anna dich fragt, ob du einen Lieblingswein hast, antwortest du:</p> <p><i>Four different verb choices:</i> Ich denke/glaube/meine/finde Rotwein aus Frankreich ist am besten.</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Finns det någonting som du vet mycket om så är det vin. Du brukar dricka ett glas vin varje kväll. När Anna frågar dig om du har något favoritvin så svarar du:</p> <p><i>Four different verb choices:</i> Jag tänker/tror/menar/tycker att rödvin från Frankrike är godast.</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
2	2	<p><i>Context:</i> Anna und du, ihr mögt es, neue Sachen auszuprobieren. Manchmal habt ihr sehr unkonventionelle Ideen. Jetzt schlägt Anna zum Beispiel vor, eure komplette Fassade rosa anzumalen. Scherzhaft antwortest du:</p> <p><i>Four different verb choices:</i> Was werden die Leute von uns denken/glauben/meinen/finden?</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du och Anna gillar att testa nya saker. Ibland har ni helt konstiga idéer. Nu till exempel föreslår Anna att måla om hela er fasad i rosa. Skämtsamt svarar du:</p> <p><i>Four different verb choices:</i> Vad ska folk tänka/tro/mena/tycka om oss?</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
2	3	<p><i>Context:</i> Du bist in einem Café und schaust durch ein großes Fenster auf eine vielbefahrene Straße. Plötzlich wirst du aufmerksam auf eine Frau, die in einem Auto vorbeiführt. War das gerade eben Anna? Als du sie später triffst und fragst, ob sie bei deinem Café vorbeigefahren ist, antwortet sie mit ja. Du reagierst:</p> <p><i>Four different verb choices:</i> Dachte/Glaubte/Meinte/Fand ich es doch, dass das du bist!</p> <p><i>Option to not select any verb:</i> Nichtsd davon passt.</p>	<p><i>Context:</i> Du sitter på ett kafé och tittar ut genom ett stort fönster mot en trafikerad gata. Plötsligt blir du uppmärksam på en kvinna i en bil som snabbt skymtar förbi. Kan det ha varit Anna? När du träffar henne nästa gång frågar du henne om hon åkte förbi kafédet du var på. När hon svarar ja, säger du:</p> <p><i>Four different verb choices:</i> Jag tänkte/trodde/menade/tyckte väl att det var du!</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
2	4	<p><i>Context:</i> Bevor ihr schlafen geht, pflegst du mit Anna, eine Tasse Tee zu trinken. Dabei redet ihr übers Leben. Bei der heutigen Tasse Tee sagst du zu ihr:</p> <p><i>Four different verb choices:</i> Manchmal denke/glaube/meine/finde ich, es wäre schön, einen Hund zu haben.</p>	<p><i>Context:</i> Innan ni går och lägger er brukar du och Anna ta en kopp te tillsammans och prata om livet. Vid dagens kopp te säger du till henne:</p> <p><i>Four different verb choices:</i> Ibland tänker/tror/menar/tycker jag att det vore</p>

		<p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p>trevligt med en liten hund hemma hos oss.</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
2	5	<p><i>Context:</i> Bei einem gemeinsamen Abendessen mit Erik und Anna, verteilt Erik Tomatensuppe auf eure drei Teller. Du kriegst am wenigsten Suppe. Scherzhaft sagst du:</p> <p><i>Four different verb choices:</i> Ich denke/glaube/meine/finde, das ist wirklich ungerecht!</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Vid en gemensam middag med Karl och Anna fördelar Karl tomatsoppa i era tre skålar. Du får minst av alla. Du reagerar skämtsamt:</p> <p><i>Four different verb choices:</i> Jag tänker/tror/menar/tycker att det här verkligen inte är schyst.</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
2	6	<p><i>Context:</i> Anna ist leidenschaftliche Köchin. Italienische Gerichte sind ihre Spezialität. Als du sie fragst, ob sie ein kulinarisches Lieblingsland hat, antwortet sie überraschenderweise mit Frankreich. Du fragst erstaunt:</p> <p><i>Four different verb choices:</i> Denkst/Glaubst/Meinst/Findest du wirklich die französische Küche schmeckt am leckersten?</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Anna är passionerad kock. Italienska rätter är hennes specialitet. När du frågar henne om hon har ett favoritland vad gäller mat svarar hon Frankrike. Du blir förvånad och frågar henne:</p> <p><i>Four different verb choices:</i> Tänker/Tror/Menar/Tycker du verkligen att det franska köket är bäst?</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
3	1	<p><i>Context:</i> Anna und du, ihr macht einen Spaziergang, weil die Sonne so schön scheint. Ihr habt Mütze und Handschuhe an, weil ihr euch nicht sicher wart, wie kalt es sein würde. Nach ein paar Minuten fragst du Anna:</p> <p><i>Four different verb choices:</i> Denkst/Glaubst/Meinst/Findest du, es ist kalt?</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Anna och du går ut eftersom solen skiner så fint. Ni har mössa och handskar på er eftersom ni var osäkra på hur kallt det skulle vara. Efter några minuters promenad frågar du Anna:</p> <p><i>Four different verb choices:</i> Tänker/Tror/Menar/Tycker du att det är kallt?</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
3	2	<p><i>Context:</i> Du wartest auf Anna, damit ihr gemeinsam frühstücken könnt. Sie kommt aus dem Badezimmer. Ihr Haar glänzt in der Morgensonne. Spontan sagst du:</p> <p><i>Four different verb choices:</i> Ich denke/glaube/meine/finde, dass deine Haare heute echt schön aussehen.</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du väntar på Anna så att ni kan äta frukost tillsammans. När hon kommer ut ur badrummet lyser hennes hår i morgonsolen. Du säger spontant:</p> <p><i>Four different verb choices:</i> Jag tänker/tror/menar/tycker att du har väldigt fint hår idag.</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
3	3	<p><i>Context:</i> Du bist mit Anna im Urlaub in Italien. Das Wetter ist echt schön. Allerdings ist es selbst im Schatten über 30 Grad heiß. Du beklagst dich bei Anna:</p> <p><i>Four different verb choices:</i> Das ist einfach zu heiß, denke/glaube/meine/finde ich.</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Anna och du är på semester i Italien. Vädret är superfint, men det är över 30 grader även i skuggan. Du klagar:</p> <p><i>Four different verb choices:</i> Det är helt enkelt för varmt, tänker/tror/menar/tycker jag.</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
3	4	<p><i>Context:</i> Anna und du, ihr braucht einen neuen Sessel für euer Wohnzimmer. Ihr seid in einem</p>	<p><i>Context:</i> Anna och du behöver köpa en ny fätölj till ert vardagsrum. Ni är på ett</p>



		<p>Möbelgeschäft und schaut euch diverse Modelle an. Du hast einen großen, roten Sessel gefunden, der dir wirklich gefällt. Du bittest Anna, ihn zu testen und willst von ihr wissen:</p> <p><i>Four different verb choices:</i> Denkst/Glaubst/Meinst/Findest du auch, dieser Sessel ist unglaublich angenehm?</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p>möbelvaruhus och provar olika modeller. Du har hittat en stor, röd fåtölj som du gillar väldigt mycket. Du ber Anna testa den. Du frågar:</p> <p><i>Four different verb choices:</i> Tänker/Tror/Menar/Tycker du också att den här fåtöljen är otroligt skön?</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
3	5	<p><i>Context:</i> Du warst beim Friseur und hast dir die Haare schneiden lassen. Als du nach Hause kommst, fragst du Anna:</p> <p><i>Four different verb choices:</i> Denkst/Glaubst/Meinst/Findest du, meine neue Frisur steht mir?</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du har varit hos frisören och klippt dig. När du kommer hem frågar du Anna:</p> <p><i>Four different verb choices:</i> Tänker/Tror/Menar/Tycker du att min nya frisyr ser bra ut?</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
3	6	<p><i>Context:</i> Zusammen mit Anna bist du auf einer Wanderung in den Bergen. Es ist sehr heiß, die Sonne prallt erbarmungslos vom Himmel. Du hast schon lange nichts mehr getrunken. Plötzlich wird dir schwarz vor Augen. Panisch sagst du zu Anna:</p> <p><i>Four different verb choices:</i> Ich denke/glaube/meine/finde, ich werde ohnmächtig!</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du och Anna är ute och vandrar i bergen. Det är mycket varmt och solen skiner starkt. Det var länge sedan du drack någonting. Plötsligt blir allt svart. Du skriker i panik:</p> <p><i>Four different verb choices:</i> Jag tänker/tror/menar/tycker att jag svimmar.</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
4	1	<p><i>Context:</i> Zusammen mit Anna bist du auf einer Party zuhause bei Erik. Du freust dich auf einen langen Abend mit guter Musik und Tanz. Aber als du siehst, wie müde Erik wirkt, sagst du zu Anna:</p> <p><i>Four different verb choices:</i> Schau, wie müde Erik aussieht! Ich denke/glaube/meine/finde, die Party ist bald vorbei.</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du och Anna är på fest hos Erik. Du har sett fram emot en lång kväll med bra musik och dans. Efter ett tag in på kvällen ser du hur trött Erik ser ut. Du säger till Anna:</p> <p><i>Four different verb choices:</i> Kolla så trött Erik ser ut! Jag tänker/tror/menar/tycker att festen snart är över.</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
4	2	<p><i>Context:</i> Zusammen mit Anna und Erik bist du auf einer Party. Es ist bereits 03:35 Uhr. Erik hat ziemlich viel getrunken. Außerdem weißt du, dass er morgen früh arbeiten muss. Deiner Ansicht nach sollte er bald nach Hause gehen. Du sagst zu Anna:</p> <p><i>Four different verb choices:</i> Schau, wie Erik herumtorkelt. Ich denke/glaube/meine/finde, er sollte bald mal nach Hause gehen.</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du, Anna och Erik är på fest. Klockan är redan 03:35. Erik har druckit ganska mycket. Dessutom vet du att han ska jobba tidigt imorgon. Det vore nog en bra idé att hem går hem snart. Till Anna säger du:</p> <p><i>Four different verb choices:</i> Kolla hur Erik vinglar. Jag tänker/tror/menar/tycker att han borde gå hem snart.</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
4	3	<p><i>Context:</i> Bei einem gemütlichen Abendessen mit Erik erzählt dieser von seiner 79-jährigen Großmutter, die heimlich einen 40 Jahre jüngeren Mann geheiratet hat. Erik hat dafür</p>	<p><i>Context:</i> Vid en trevlig middag med Erik berättar han om sin 79-årig farmor som i all hemlighet gifte sig med en 40 år yngre man. Erik är mycket kritisk till det,</p>

		kein Verständnis. Anna hingegen verteidigt die Großmutter. Du versuchst zu vermitteln: <i>Four different verb choices:</i> Man mag darüber denken, was man will. / Man mag dazu glauben/meinen, was man will. / Man mag davon finden, was man will. <i>Option to not select any verb:</i> Nichts davon passt.	men Anna försöker försvara hans farmor. Du försöker förmedla: <i>Four different verb choices:</i> Man får väl tänka/tro/mena/tycka vad man vill om det. <i>Option to not select any verb:</i> Ingen av dessa.
4	4	<i>Context:</i> Mitten in der Nacht wachst du auf, weil du ein Kind schreien gehört hast. Aber das Geräusch war so schwach, hast du es möglicherweise nur geträumt? Oder hat dir deine Fantasie einen Streich gespielt? Am Morgen erzählst du Anna davon: <i>Four different verb choices:</i> Heute Nacht dachte/glaubte/meinte/fand ich, ich hätte ein Kind schreien gehört, aber vielleicht habe ich mir das auch nur eingebildet. <i>Option to not select any verb:</i> Nichts davon passt.	<i>Context:</i> Mitt i natten vaknar du för att du har hört ett barn skrika. Men ljudet var så svagt att du möjligtvis har drömt det? Eller kan din fantasi ha spelat dig ett spratt? På morgonen berättar du för Anna: <i>Four different verb choices:</i> Inatt tänkte/trodde/menade/tyckte jag att jag hörde ett barn skrika, men jag kan ha inbillat mig det också. <i>Option to not select any verb:</i> Ingen av dessa.
4	5	<i>Context:</i> Erik und du, ihr fahrt Auto auf einer Landstraße. Du freust dich, als du in der Ferne ein Reh erblickst. Als ihr näher kommt, entpuppt sich das Reh als Vogelscheuche. Du zeigst auf die Vogelscheuche und sagst zu Erik: <i>Four different verb choices:</i> Von Weitem dachte/glaubte/meinte/fand ich, das wäre ein Reh. <i>Option to not select any verb:</i> Nichts davon passt.	<i>Context:</i> Erik och du kör bil på en landsväg. Du glädjer dig när du ser ett rådjur i fjärran. När ni kommer närmare visar det sig att det bara är en fågelskrämma. Du pekar på fågelskrämman och säger till Erik: <i>Four different verb choices:</i> På långt håll tänkte/trodde/menade/tyckte jag att det var ett rådjur. <i>Option to not select any verb:</i> Ingen av dessa.
4	6	<i>Context:</i> In letzter Zeit ärgerst du dich immer wieder über deinen Kollegen Peter. Er hat immer neue Bedürfnisse, auf die alle Rücksicht nehmen müssen. Heute beklagte er sich über den Geruch von Kaffee im Großraumbüro. Du sagst zu Anna: <i>Four different verb choices:</i> Er denkt/glaubt/meint/findet, die ganze Welt muss sich nach ihm richten. <i>Option to not select any verb:</i> Nichts davon passt.	<i>Context:</i> På sistone retar du dig på din kollega Peter. Han har hela tiden nya behov som alla andra måste ta hänsyn till. Senast idag klagade han på lukten av kaffe i ert öppna kontorslandskap. Du säger till Anna: <i>Four different verb choices:</i> Peter tänker/trot/menar/tycker att hela världen ska anpassa sig efter honom. <i>Option to not select any verb:</i> Ingen av dessa.

### Fillers

Item	German	Swedish
1	<i>Context:</i> Zusammen mit Anna wohnst du mitten in der Stadt. Ihr macht keine Grosseinkäufe, sondern kauft immer dann ein, wenn was fehlt. Nun habt ihr kein Brot zuhause. Du sagst du Anna: <i>Four different verb choices:</i> Ich gehe/fahre/laufe/reise kurz zum Supermarkt und kaufe Brot. Brauchst du was? <i>Option to not select any verb:</i> Nichts davon passt.	<i>Context:</i> Anna och du bor mitt i stan. Istället för att storhandla en gång i veckan handlar ni när det behövs. Nu finns det inget bröd hemma. Därför säger du till Anna: <i>Four different verb choices:</i> Jag går/åker/kör/far till matbutiken och köper bröd. Behöver du någonting? <i>Option to not select any verb:</i> Ingen av dessa.

2	<p><i>Context:</i> Du hast dich mit Clara am Bahnhof verabredet. Leider verpasst du deinen Bus. Deswegen schreibst du folgende SMS:</p> <p><i>Four different verb choices:</i> Bus verpasst, ich gehe/fahre/laufe/reise stattdessen, komme 5 Min später!</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du och Clara ska träffas på stationen om en kvart. Tyvärr missar du bussen. Därför sms:ar du till Clara:</p> <p><i>Four different verb choices:</i> Missade bussen, jag går/åker/kör/far istället, kommer 5 min senare!</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
3	<p><i>Context:</i> Du und Anna, ihr fliegt morgen in den Urlaub nach Italien. Anna ist zuständig für die Reise. Weil du wissen willst, ob es reicht, wenn du deinen Koffer erst morgen früh packst, fragst du sie:</p> <p><i>Four different verb choices:</i> Wann gehen/fahren/laufen/reisen wir morgen los?</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Anna och du ska på semester till Italien. Det är Anna som är ansvarig för flygresan dit. Du undrar om du hinner packa imorgon bitti eller om du hellre ska göra det ikväll. Därför frågar du Anna:</p> <p><i>Four different verb choices:</i> När går/åker/kör/far vi imorgon?</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
4	<p><i>Context:</i> Anna und du, ihr schaut eine Quizshow im Fernsehen, bei der man Kameraaufnahmen aus einem unbekanntem Land sieht und raten muss, wo man sich gerade befindet. Anna tippt auf Australien. Du sagst skeptisch:</p> <p><i>Four different verb choices:</i> Aber geht/fährt/läuft/reist man in Australien wirklich auf der rechten Seite?</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Tillsammans med Anna tittar du på "På spåret", ett tv-program där man ska gissa var i världen man befinner sig utifrån ledtrådar och det man ser. Anna säger att det måste vara i någonstans i Australien. Skeptiskt svarar du:</p> <p><i>Four different verb choices:</i> Men, går/åker/kör/far man verkligen på höger sida i Australien?</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
5	<p><i>Context:</i> Du arbeitest im sechsten Stock. Manchmal bist du zu faul dafür, die Treppe zu benutzen. Heute ist ein solcher Tag. Als der Fahrstuhl endlich kommt, befindet sich bereits eine Frau darin. Du fragst sie:</p> <p><i>Four different verb choices:</i> Geht/Fährt/Läuft/Reist dieser Fahrstuhl hoch oder runter?</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du jobbar på sjätte våningen. Ibland är du för trött för att ta trappan upp. Idag är en sådan dag. När hissen äntligen kommer är en kvinna redan i den. Du frågar henne:</p> <p><i>Four different verb choices:</i> Går/Åker/Kör/Far den här hissen ner eller upp?</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
6	<p><i>Context:</i> Du wartest an einer grossen Bushaltestelle. Eine ältere Dame spricht dich an und fragt dich, ob du weisst, wann Bus Nummer 8 kommt. Du antwortest:</p> <p><i>Four different verb choices:</i> Der Achter ist eben abgegangen/abgefahren/abgelaufen/abgereist.</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du väntar på en stor busshållplats på din buss. En äldre dam frågar dig om du vet när buss nr. 8 kommer. Du svarar:</p> <p><i>Four different verb choices:</i> Åttan gick/åkte/körde/for precis!</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
7	<p><i>Context:</i> Erik, Anna und du, ihr seid zu einer Party auf einem etwas abgelegenen Bauernhof eingeladen. Anna schlägt vor, dass ihr ein Taxi nehmen könntet. Du entgegnest:</p> <p><i>Four different verb choices:</i> Nicht nötig, ich kann gehen/fahren/laufen/reisen, ich habe sowieso keine Lust auf Alkohol.</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Erik, Anna och du är bjudna på fest på en avlägsen bondgård. Anna föreslår att ni kan beställa en taxi. Du svarar:</p> <p><i>Four different verb choices:</i> Det behövs inte, jag kan gå/åka/köra/fara ikväll. Jag har ändå ingen lust på alkohol.</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
8	<p><i>Context:</i> Bei einem gemeinsamen Frühstück zuhause bei Erik kommt ihr auf eure Urlaubspläne zu sprechen. Du fragst Erik:</p>	<p><i>Context:</i> Vid en gemensam frukost hemma hos Erik börjar ni tala om era semesterplaner. Du frågar Erik:</p>

	<p><i>Four different verb choices:</i> Gehst/Fährst/Läufst/Reist du dieses Jahr ins Ausland?</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Four different verb choices:</i> Går/Åker/Kör/Far du på semester utomlands i år?</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
9	<p><i>Context:</i> Du nimmst jeden Morgen den gleichen Bus zur Arbeit und kennst deshalb die Busfahrerin recht gut. Heute kommt ein Bus, den du noch nie gesehen hast. Der Bus ist fast geräuschlos. Als du einsteigst, fragst du die Fahrerin:</p> <p><i>Four different verb choices:</i> Gehen/Fahren/Laufen/Reisen Sie neuerdings einen Elektrobus?</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du brukar ta samma buss till jobbet varje dag. Därför känner du busschauffören rätt så väl. Idag kommer en buss som du aldrig sett tidigare. Bussen är nästan ljudlös. När du går ombord frågar du chauffören:</p> <p><i>Four different verb choices:</i> Går/Åker/Kör/Far du en elbuss nuförtiden?</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
10	<p><i>Context:</i> In letzter Zeit wirkt Erik sehr gestresst. Als du ihn darauf ansprichst, sagt er, dass ihm zurzeit alles über den Kopf wächst. Dein Rat an ihn lautet:</p> <p><i>Four different verb choices:</i> Geh/Fahr/Lauf/Reise einfach mal weg für eine Zeit und genieß das Leben!</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> På sistone verkar Erik vara stressad hela tiden. När du påtalar det säger han att allt håller på att växa över hans huvud just nu. Du ger honom följande råd:</p> <p><i>Four different verb choices:</i> Gå/Åk/Kör/Far bort ett tag och njut av livet!</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
11	<p><i>Context:</i> Du bist im Reisezentrum der Deutschen Bahn und willst ein Ticket nach Paris kaufen. Deine erste Frage an den Schalterbeamten lautet:</p> <p><i>Four different verb choices:</i> Wie oft am Tag geht/fährt/läuft/reist der Zug nach Paris?</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du är på en resebutik och ska köpa en tågbiljett till Paris. Din första fråga till biljettsäljaren lyder:</p> <p><i>Four different verb choices:</i> Hur ofta om dagen går/åker/kör/far tåget till Paris?</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
12	<p><i>Context:</i> Du bist als Tourist in Zürich unterwegs. Als nächstes möchtest du das Kunstmuseum besuchen. Gemäss Reiseführer bringt dich Bus Nummer 5 dorthin. Beim Einsteigen fragst du zur Sicherheit:</p> <p><i>Four different verb choices:</i> Geht/Fährt/Läuft/Reist dieser Bus zum Kunstmuseum?</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du är i Göteborg som turist och vill besöka konstmuseet. Enligt reseguiden är det buss nr. 5 som tar dig dit. När du stiger ombord frågar du för säkerhets skull chauffören:</p> <p><i>Four different verb choices:</i> Går/Åker/Kör/Far den här bussen till konstmuseet?</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
13	<p><i>Context:</i> In der Kaffeepause bei der Arbeit erzählt dir Peter, dass er im Sommer mit seinen Kindern in den Alpen wandern will. Er fragt dich, ob du schon Pläne für den Sommer hast. Du antwortest:</p> <p><i>Four different verb choices:</i> Anna und ich wollen eine Auto mieten und durch Südfrankreich gehen/fahren/laufen/reisen.</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> På fikapausen berättar Peter att han vill åka till Alperna och vandra med sina barn i sommar. Han frågar dig om du har planer i sommar. Du svarar:</p> <p><i>Four different verb choices:</i> Anna och jag ska hyra en bil och gå/åka/köra/fara genom Sydfrankrike.</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
14	<p><i>Context:</i> Du und Erik, ihr seid mit dem Auto unterwegs. Erik sitzt hinter dem Steuer. Als die Ampel auf Grün wechselt auf, reagiert Erik nicht. Du sagst:</p> <p><i>Four different verb choices:</i> Geh/Fahr/Lauf/Reise los, die Leute fangen gleich an zu hupen!</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du och Erik sitter i en bil, Erik sitter bakom ratten. När trafikljuset blir grönt, reagerar Erik inte. Du säger:</p> <p><i>Four different verb choices:</i> Gå/Åk/Kör/Far, innan folk börjar tuta.</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>

15	<p><i>Context:</i> Als Anna abends von der Arbeit nach Hause kommt, ist sie verschnupft. Sie erzählt dir, dass sie am Morgen komplett verregnet wurde. Du fragst sie:</p> <p><i>Four different verb choices:</i> Bist du den ganzen Tag in nassen Schuhen herumgegangen/herumgefahren/herumgelaufen/herumgereist?</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> När Anna kommer hem från jobbet är hon snuvig. Hon berättar att hon hamnade i en rejäl regnskur imorse och blev genomblöt. Du frågar henne:</p> <p><i>Four different verb choices:</i> Har du gått/åkt/kört/farit runt i blöta skor hela dagen?</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
16	<p><i>Context:</i> Eriks Eltern sind vor ein paar Jahren nach Marokko ausgewandert. Da Marokko nicht gerade um die Ecke liegt, fragst du ihn:</p> <p><i>Four different verb choices:</i> Wie oft gehst/fährst/läufst/reist du sie eigentlich besuchen?</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Eriks föräldrar utvandrade till Marocko för några år sedan. Eftersom Marocko ligger rätt så långt borta så frågar du honom:</p> <p><i>Four different verb choices:</i> Hur ofta går/åker/kör/far du dit för att besöka dem?</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
17	<p><i>Context:</i> Du spazierst zusammen mit Anna durch die Stadt. Anna kriegt Hunger und sagt, sie wolle eine Banane im Supermarkt kaufen. Da die Sonne so schön scheint, wartest du lieber draussen. Du sagst zu ihr:</p> <p><i>Four different verb choices:</i> Geh/Fahr/Lauf/Reise alleine in den Laden – ich genieße lieber die Sonne!</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du promenerar tillsammans med Anna genom stan. Anna blir hungrig och säger att hon vill köpa en banan i en affär. Eftersom solen skiner så fint, vill du hellre vänta ute. Du säger till henne:</p> <p><i>Four different verb choices:</i> Gå/Åk/Kör/Far du in i affären, jag njuter av solen så länge!</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
18	<p><i>Context:</i> Peter hat dir heute auf Arbeit erzählt, dass er nächstes Jahr ein Sabbatical machen möchte. Als du Anna davon erzählst, kommentiert sie, dass ihm bestimmt schnell langweilig wird. Du sagst:</p> <p><i>Four different verb choices:</i> Nein, er hat einen Plan: Er will den gesamten Jakobsweg von Deutschland nach Spanien gehen/fahren/laufen/reisen.</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Peter berättade för dig att han vill ta ett sabbatsår nästa år. När du berättar det för Anna undrar hon om han inte får tråkigt om han inte jobbar. Du svarar:</p> <p><i>Four different verb choices:</i> Han har en plan. Han ska gå/åka/köra/fara Jakobsleden hela vägen från Sverige till Spanien.</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
19	<p><i>Context:</i> Bald kommt der Sommer. Deshalb holst du die Sommermöbel aus dem Keller. Clara hilft dir beim Hochtragen. Sie fragt dich, wo der Sonnenschirm hin soll. Du antwortest:</p> <p><i>Four different verb choices:</i> Du kannst ihn auf den Balkon stellen/legen/setzen/tun.</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Snart börjar sommaren. Därför hämtar du sommarmöblarna nere i källaren. Clara hjälper dig med att bära upp dem. Hon frågar dig var hon ska placera parasollet. Du svarar:</p> <p><i>Four different verb choices:</i> Du kan ställa/lägga/sätta/slå ned det på balkongen.</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
20	<p><i>Context:</i> Du bist bei Erik zuhause. Er erzählt dir, dass er in Betracht zieht, in einen anderen Stadtteil umzuziehen. Da du ihn nicht als Nachbar missen möchtest, sagst du:</p> <p><i>Four different verb choices:</i> Das darfst/musst/sollst/kannst du nicht tun!</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du och Erik fikar tillsammans. Han berättar för dig att han funderar på att flytta till en annan lägenhet. Eftersom du verkligen gillar att vara granne med honom, säger du:</p> <p><i>Four different verb choices:</i> Det får/måste/ska/kan du inte göra!</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
21	<p><i>Context:</i> Anna hat neue Gardinen gekauft. Erst als sie sie aufhängen will, merkt sie, dass sie viel zu lange sind. Du bietest ihr deine Hilfe an:</p> <p><i>Four different verb choices:</i> Ich kann sie zuschneiden/nähen/zusägen/kürzen.</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Anna har köpt nya gardiner. Först när hon hänger upp dem inser hon att de är alldeles för långa. Du erbjuder henne din hjälp:</p> <p><i>Four different verb choices:</i> Jag kan skära/klippa/kapa/såga till dem.</p>

		<i>Option to not select any verb:</i> Ingen av dessa.
22	<p><i>Context:</i> Anna und du, ihr redet über eure Lieblingsstädte in Europa. Deine Lieblingsstadt ist eindeutig Berlin. Als Anna dich nach einer Begründung fragt, antwortest du:</p> <p><i>Four different verb choices:</i> So viel Geschichte ist in dieser Stadt passiert. / So viel Geschichte hat in dieser Stadt stattgefunden. / So viel Geschichte hat sich in dieser Stadt ereignet/zugetragen.</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Anna och du pratar om era favoritstäder i Europa. Din favoritstad är helt klart Berlin. När Anna ber dig motivera det, säger du:</p> <p><i>Four different verb choices:</i> Så mycket historia har skett/ägt rum/hänt/blivit av i Berlin!</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
23	<p><i>Context:</i> Beim gemeinsamen Kochen sagt Anna, dass sie schon lange nichts mehr von Clara gehört hat. Du stimmst ihr zu:</p> <p><i>Four different verb choices:</i> Ich habe sie auch schon lange nicht mehr getroffen/gesehen/erblickt/erkannt.</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> När du och Anna lagar kvällsmat säger hon att det var längesen hon hade hört någonting från Clara. Du instämmer:</p> <p><i>Four different verb choices:</i> Jag har heller inte sett/mött/träffat/stött på henne på länge!</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
24	<p><i>Context:</i> Anna will sich weiterbilden. Sie hat sich deshalb um einen Platz im Kurs "Kulturmanagement" beworben. Da du wissen willst, ob sie reingekommen ist, fragst du sie:</p> <p><i>Four different verb choices:</i> Hast du Bescheid von der Universität entgegengenommen/gekriegt/erhalten/bekommen?</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Anna vill vidareutbilda sig. Hon har sökt en kvällskurs i kulturmanagement. Du undrar om hon har kommit in och frågar henne:</p> <p><i>Four different verb choices:</i> Har du hört/fått/tagit emot/erhållit besked från skolan?</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>

### Training items

Item	German	Swedish
1 (multi-verb answer expected)	<p><i>Context:</i> Du bist mit der Bahn unterwegs und kommst zufällig mit deiner Sitznachbarin ins Gespräch. Sie fragt dich, wo du aufgewachsen bist. Du antwortest:</p> <p><i>Four different verb choices:</i> Ich komme/stamme/bin aus Berlin. / Ich fahre nach Berlin.</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du sitter på tåget och småpratar med en medresenär. Hon frågar dig var du är uppvuxen. Du svarar:</p> <p><i>Four different verb choices:</i> Jag kommer från /är från /har mina rötter i Stockholm. / Jag åker till Stockholm.</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>
2 (single-verb answer expected)	<p><i>Context:</i> Du betrittst ein Café und gehst auf den Tresen zu. Der Mitarbeiter an der Kasse fragt dich, was du gerne hättest. Du antwortest höflich:</p> <p><i>Four different verb choices:</i> Ich würde gerne einen Kaffee bestellen/erstellen/herstellen/verstellen.</p> <p><i>Option to not select any verb:</i> Nichts davon passt.</p>	<p><i>Context:</i> Du går in på ett kafé. Mannen bakom disken frågar dig vad du ska ha. Trevligt svarar du:</p> <p><i>Four different verb choices:</i> Jag skulle vilja beställa/anställa/förställa/verkställa en kopp kaffe.</p> <p><i>Option to not select any verb:</i> Ingen av dessa.</p>

## Appendix C. Questionnaire Interface

Screenshots of welcomes pages in German and Swedish



 **LUND UNIVERSITY**

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### Hallo und willkommen!

-----  
Bevor wir loslegen, habe ich ein paar kurze Fragen an Sie.  
-----

**Ist Deutsch Ihre Muttersprache?**

Ja  
 Nein

**Sprechen Sie zur Bewältigung Ihres Alltags hauptsächlich Deutsch?**

Ja  
 Nein

**Haben Sie jemals über einen längeren Zeitraum (>3 Monate) hinweg in einem nicht-deutschsprachigen Land gewohnt?**

Ja  
 Nein

[Weiter geht's](#)



 **LUND UNIVERSITY**

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### Hej och välkommen!

-----  
Innan vi börjar har jag några frågor till dig.  
-----

**Är svenska ditt modersmål?**

Ja  
 Nej

**Pratar du huvudsakligen svenska i din vardag?**

Ja  
 Nej

**Har du någonsin bott i något annat land än Sverige längre än tre månader?**

Ja  
 Nej

[Vidare](#)

## Screenshots of instruction pages in German and Swedish



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## Wunderbar!

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**Hier erkläre ich Ihnen, was Ihre Aufgabe ist:**

Sie werden gleich mit unterschiedlichen Situationen konfrontiert, in denen Sie entscheiden müssen, wie man sprachlich reagieren kann.

Bei jeder Aufgabe lesen Sie zuerst eine kurze Situationsbeschreibung. Anschließend sehen Sie vier Sätze, die Sie in dieser Situation äussern könnten. Ihre Aufgabe ist es, zu wählen, welche(n) dieser Sätze Sie in der angegebenen Situation als passend erachten.

Wenn *ein* Satz passt, dann wählen Sie nur diesen.  
Wenn *mehrere* Sätze passen, dann wählen Sie alle diese.  
Wenn *kein* Satz passt, dann wählen Sie „Nichts davon passt“.

**Auf der nächsten Seite folgen zwei Beispielaufgaben!**

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[Nochmal zurück](#) [Weiter geht's](#)



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## Utmärkt!

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**Nedan följer lite instruktioner:**

Du ska snart läsa om olika situationer där det är din uppgift att bestämma hur du skulle reagera språkligt i den situationen.

Vid varje deluppgift läser du först en kort beskrivning av situationen. Sedan ser du fyra olika meningar som man kanske kan yttra i den angivna situationen. Din uppgift är det att ange vilken mening/vilka meningar som passar i situationen.

Om *en* mening passar så anger du bara en mening.  
Om *flera* meningar passar så anger du alla dessa.  
Om *ingen* mening passar så anger du "ingen av dessa".


**På nästa sida hittar följer två testuppgifter.**

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[Tillbaka](#) [Vidare](#)



## Screenshots of example item in German and Swedish



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**Anna sagt zu dir, dass sie heute unbedingt deine Schwester Clara treffen muss, aber sie weiß nicht, wo sich Clara befindet. Wenn du dich recht Erinnerst, hat dir Clara erzählt, sie sei heute den ganzen Tag zuhause. Du antwortest Anna:**

- Ich glaube, sie ist heute zuhause.
- Ich denke, sie ist heute zuhause.
- Ich meine, sie ist heute zuhause.
- Ich finde, sie ist heute zuhause.
- Nichts davon passt.

[Nochmal zurück](#) [Weiter geht's](#)



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**Du och Anna har precis gått upp. Ni äter frukost och tittar ut genom fönstret. Det är tidigt på morgonen, men solen skiner redan. Du frågar Anna:**

- Tänker du att det är kallt ute?
- Tycker du att det är kallt ute?
- Tror du att det är kallt ute?
- Menar du att det är kallt ute?
- Ingen av dessa.

[Tillbaka](#) [Vidare](#)

## Appendix D. Sample of Background Questionnaire

### German

#### **Welche Sprachen sprechen Sie neben Deutsch? Wie gut sind Sie in diesen Sprachen?**

Englisch / Französisch / Spanisch / Italienisch / Schwedisch / Russisch:

[choose level for each above-specified language] Keine Kenntnisse / Anfängerkenntnisse / Mittlere Kenntnisse / Fortgeschrittene Kenntnisse

#### **Welche weiteren Sprachen sprechen Sie?**

*Geben Sie bitte jeweils an, wie gut Sie in diesen Sprachen sind.*

[Five open text fields]

#### **Deutsch ist ja Ihre Muttersprache. Welche Art von Deutsch sprechen Sie in Ihrem Alltag?**

Ich spreche...

Hochdeutsch / einen süddeutschen Dialekt / einen mitteldeutschen Dialekt / einen norddeutschen Dialekt / einen österreichischen Dialekt / einen schweizerdeutschen Dialekt / einen anderen Dialekt.

#### **Und spezifischer, wie heisst ihr Dialekt?**

*Lassen Sie die Frage unbeantwortet, falls Sie keinen Dialekt sprechen.*

[Open text field]

#### **Was ist ihr höchster Ausbildungsabschluss?**

Obligatorische Schule (9 Jahre) / Abitur/Matur(a)/Berufsschule/Lehre / Hochschulstudium (weniger als 3 Jahre) / Hochschulstudium (3 Jahre oder länger) / Doktoratsstudium

### Swedish

#### **Vilka andra språk utöver svenska kan du? Hur bra är du på dem?**

Engelska / Franska / Spanska / Italienska / Tyska / Ryska:

[choose level for each above-specified language] Kan jag inte / Har lite kunskap / Har relativt goda kunskaper / Har mycket goda kunskaper

#### **Vilka andra språk kan du?**

*Ange gärna hur bra du är på dem.*

[Five open text fields]

#### **Svenska är ju ditt modersmål. Vilken typ av svenska pratar du i din vardag?**

Jag pratar...

rikssvenska / en dialekt från södra Sverige / en dialekt från mellersta Sverige / en dialekt från norra Sverige / Gotländska / Finlandsvenska / någon annan dialekt.

#### **Och närmare bestämt, vad heter din dialekt?**

*Lämna frågan obesvarat om du inte pratar någon dialekt.*

[Open text field]

#### **Vilken är din högsta utbildningsnivå?**

Grundskola / Gymnasium / Eftergymnasial utbildning (kortare än 3 år) / Eftergymnasial utbildning (3 år eller längre) / Forskarutbildning