

## **The influence of linguistic distance on foreign language attrition:**

An investigation of foreign language attrition of receptive and productive language skills in German and French among Dutch students

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30-06-2017

Master thesis

25651 words

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### **Abstract**

In building upon previous research on foreign language attrition and typological proximity, this study has investigated the effect of linguistic distance on the foreign language attrition of German and French to address this research gap. Two groups of participants were tested to examine this phenomenon, namely a baseline group of secondary school pupils at the height of their foreign language skills and an attriting group of students who have not used these foreign languages for a few years. These subjects were asked to take part in an online questionnaire that contained background questions as well as four different language proficiency measures: a reading task, receptive vocabulary translation task, productive vocabulary translation task and c-test. Since it was found that attriters showed significantly more attrition for the productive vocabulary translation task in the typologically closer German than they did in French, the present study suggests that typologically closer languages could have a negative influence on attrition. In addition, performance on productive German proficiency tasks was higher than on receptive tasks, while attrition was only found in these productive tasks. Therefore, it was concluded that further research comparing productive and receptive tasks is necessary to provide more information on foreign language attrition.

**KEYWORDS:** Foreign language attrition, receptive and productive skills, typological proximity, German, French.

## 1. Introduction

Over the past decades, much language research has focused on language acquisition. Since acquisition and knowledge of a first language are privileged over other languages in the mind, investigating the difference between L1 acquisition and L2/FL acquisition played an important role in this domain (Schmid and Köpke, 2007). Studies have investigated whether this difference results from biological properties or from factors such as input, learning strategies and language contact. After decades of research, consensus regarding the factors which govern processes of language acquisition has not been reached, and according to Myles (2013), three different theoretical families have emerged. Firstly, linguistic approaches to language acquisition focus on the formal system that underlies production and comprehension, in which input triggers universal mechanisms. It is argued that language is modular, in that its formal properties are part of a distinct structure in the mind. On the other hand, cognitive approaches focus on language learning as a skill that is processed in the brain, in which it is argued that language learning is similar to other types of learning. Therefore, it is proposed that the acquisition of language is a complex, non-modular skill. Lastly, according to interactionist, sociolinguistic and sociocultural approaches, language is a cultural product, due to which these researchers focus on the social context of the learner.

Although the first language has long been seen as stable baseline against which the acquisition and knowledge of second languages could be compared, more recent studies have stated otherwise. Not only have languages found to be changing over time, it was also discovered that the different languages of a speaker influence each other. Therefore, it is argued that monolingual speakers have different characteristics than multilingual speakers (Cook, 2003). According to Schmid and Köpke (2007), the nature of the cross-linguistic influence of the L1 and L2 can change over time during the acquisition process, depending on the use and dominance of the languages. Even though the influence of the first language is particularly evident in the first stages of learning a second language, this influence reduces when the learner becomes more advanced in the second language. Moreover, this process of shifting language influence can even result in the second language becoming dominant in the mind and environment of the speaker. In this case, the second language can increasingly start to influence the first language, eventually causing the speaker's first language to deteriorate. Language loss due to lack of input and usage among healthy individuals is commonly referred to as language attrition.

Traditionally, language research has focused on language acquisition rather than attrition. Even though interest for language attrition dates back to the 16th century, it was not until the 1980s that this phenomenon was first researched in the context of modern linguistics (Schmid & Mehotcheva, 2012). As the research field of language attrition emerged, multiple terms were interchangeably used to denote the loss of language skills in various situations, including language loss, attrition and regression. Later on, studies began to distinguish between a general term for losing language ability (*language loss*), the term for the loss of language skills due to personal developmental issues or medical conditions (*language regression*), and finally, the term for language skill loss among healthy individuals (*language attrition*) in order to create clarity (Schmid and Mehotcheva, 2012). Moreover, when the language attrition field broadened beyond investigating the attrition of mother tongues, an additional distinction was made between the research on *L1 attrition*, referring to first language attrition, and *L2 attrition* or *FL attrition*, referring to the attrition of languages that are acquired later in life.

There are multiple differences between L2 attrition and FL attrition, since second languages are acquired naturalistically, whereas foreign languages are explicitly learned through classroom instruction. According to Kecskes and Papp (2000), there are fundamental differences between L2 development and FL development due to differences in the quality and quantity of both the input and output. Not only are L2 learners less restricted in determining the amount of input they are exposed to, the input is also of a better quality as it is often more varied as well as produced by native speakers of the language. As a result, FL learners focus on generating correct sentences, whereas the L2 environment stimulates common responses to recognizable situations that occur often. The focus on functional features and language skills in L2 development often leads to near native conceptual fluency, in which the learners have advanced awareness of semantic connotations. FL development, on the other hand, is argued to concentrate on formal features and language knowledge, creating a preference for literal language over metaphoric language due to limited conceptual fluency (Kecskes & Papp, 2000). Importantly, these differences can have consequences for attrition as well. Schmid and Mehotcheva (2012) point out that “the more implicit acquisition process that can be assumed to take place in immersion learning may result in a different representation of the linguistic structures in memory, which in turn may impact on their susceptibility to attrition/forgetting” (p. 3).

Even though the distinction between first language attrition, second language attrition and foreign language attrition was made, most research has continued to focus on L1 attrition, leaving instructed FL attrition and its governing factors an under-researched domain. This niche has been noted by Schmid and Mehotcheva (2012) as well, who claim that the few existing studies that have empirically examined foreign language attrition are often out-dated and non-generalizable, and therefore argue that “the question of how much of the (often) laboriously acquired foreign language knowledge is retained later in life, which was posed by Weltens [thirty] years ago (Weltens, 1987: 22) can [...] still be considered wide open” (p. 4). This study will attempt to look into this question by investigating whether typological proximity influences instructed FL attrition. Another research gap is thereby addressed as well, since the relation between attrition and linguistic distance has remained unexplored, despite extensive research on typological proximity in the field of second and foreign language acquisition (de Bot, 1997).

## **2. Background**

In this section, a brief overview of previous research on first language attrition, foreign language attrition and language typology will be presented. Even though this study is mostly concerned with foreign language attrition, studies in first language attrition are briefly touched upon first. Work on first language attrition is relevant to studies in foreign language attrition because L1 attrition has been the focus of most studies in the field, and since the results of these studies can often be applied to work on FL attrition as well. Subsequently, a selection of previous work in foreign language attrition is introduced, through which the various factors that have been found to influence foreign language attrition are discussed. Here, the differences between attrition in receptive and productive skills, as well as the effects of attitude, motivation and language contact and use on attrition will be underlined. Afterwards, the notion of linguistic distance and its effect on language development will be considered. In this section, both actual distance and perceived distance are addressed by looking at the effect that these aspects of linguistic distance have on the acquisition and attrition of foreign languages. After introducing Andersen’s (1982) linguistic features hypothesis, studies on the difference between cognates and non-cognates in acquiring and forgetting vocabulary will be presented. Lastly, the present study will be introduced, together with its research questions and hypotheses.

## 2.1. First language attrition

Research on language attrition can be argued to have started in the early 1980s, when Lambert decided to organize a national stocktaking conference because of personal and professional interest in the research field (Köpke & Schmid, 2004). Following the event, Lambert and Freed's (1982) *The Loss of Language Skills* was published, which addressed both first and second language loss from multiple perspectives and also included methodological papers. Together, the conference and publication provided the emerging field of language attrition research with theoretical and methodological frameworks from which "the study of language loss research branched out across disciplines and countries" (Schmid & Köpke, 2004, p. 2). In these years, from 1982 to 1990, the attrition phenomenon was explored through a dense network of studies that was formed through contacts in the United States as well as in the Netherlands, where a two day workshop was organized to initiate language attrition research in Europe. Unfortunately, this network of language attrition research mostly consisted of preliminary studies, pilots, work in progress and PhD projects, several of which were never carried out. Furthermore, although these studies investigated various topics regarding individual and societal language loss from multiple perspectives, individual L1 attrition was only researched in a few more isolated studies.

Seliger and Vago's (1991) *First Language Attrition* marked the beginning of a new phase in L1 attrition research, as this was the first collection of papers that focused on the attrition of the mother tongue. According to Schmid (2016), this publication marks "the beginning of a decade of a more focused, theoretically and empirically driven approach to language attrition, characterized mainly by a limited number of comparatively large-scale investigations of first language attrition, usually in the form of Ph.D. projects" (p. 186). Even though these changes created a defined research field with clear theoretical foundations and predictions, they also led to the individualisation of language attrition research. Where the previously active research network had largely lost interest in the phenomenon, PhD studies were blooming due to the availability of theoretical frameworks. Unfortunately, these studies are often not readily available, due to which researchers could not draw on each other's work. In addition, research on first and second/foreign language attrition started to separate, since L1 attrition studies were placed in research areas that relate to the maintenance and loss of minority languages, whereas other attrition studies were conducted within the field of language teaching.



From the early 2000s, the more individual character of studies on first language attrition as well as the reduced interest in the phenomenon were acknowledged and tackled. In this period, there has been a focus on creating a community of attrition researchers with a common methodology framework. Nowadays, the research field has become increasingly visible, as it is recognized that attrition studies can provide insight in other research areas that are related to multilingualism. According to Köpke (2007), who claimed that “language attrition is a promising research issue for the exploration of links between the brain, mind and external factors that are also of particular interest for research in multilingualism” (p. 10), multiple factors have been identified that predict attrition. These factors can be divided into three groups. Firstly, there are four important brain mechanisms that influence attrition, including brain plasticity, activation, inhibition and subcortical involvement. Secondly, cognitive processes that have been found to predict attrition include internal cognitive factors such as working memory and the use of either procedural or declarative memory. Factor such as language aptitude, literacy and task dependency also play a role in these processes. Lastly, as the human mind is partially shaped by its environment, external factors have been found to influence attrition as well, which is the focus of this study.

## **2.2. Foreign language attrition**

Research on foreign language attrition had a more practical origin than the work on L1 attrition, as the first studies were fuelled by its possible relation to second language acquisition and language teaching. According to Schmid and Mehotcheva (2012), most studies focused on the attrition of naturalistically acquired second languages, due to which the attrition of languages that have been acquired in an educational setting has been empirically researched on a larger scale by only a small number of studies. In this section, some of the early work by Bahrck (1984), Weltens (1989) and Grendel (1993) as well as more recent work by Murtagh (2003), Mehotcheva (2010) and Xu (2010) will be presented to provide an insight in the studies that have been conducted in the field of foreign language attrition. Then, some of the main findings from these studies will be discussed, together with a selection of internal and external factors that have been found to play a role in foreign language attrition. Of these factors, the differences between attrition in receptive and

productive skills, as well as the effects of attitude, motivation and language contact and use on attrition will be considered in more detail for the purposes of this study.

### 2.2.1. Previous studies

An early and influential study has been conducted by Bahrck (1984), who looked at the attrition and retention of Spanish by studying 773 native English speakers. From this large subject pool, 146 participants were controls who were studying Spanish in high school or college courses. The other participants were categorized into groups, depending on both the amount of Spanish training they had received and on the length of the 'attrition period', which refers to the amount of time that passed since the instruction period. Various language tests and background questionnaires were used to gain information on current proficiency, previous school grades and language use during the attrition period. In looking at the results of the study, three important findings attract attention. Firstly, it was found that attrition mostly depended on attained proficiency. The study did not only show that school grades were still valid predictors of proficiency after a large attrition period, it was also found that the absolute amount of attrition was relatively similar in all participants, due to which highly proficient speakers lost a relatively smaller portion of their attained proficiency than the less proficient speakers. Secondly, it was also discovered that language exposure during the period of language attrition alone does not suffice to prevent attrition, since activities such as watching Spanish TV programmes and conversing in Spanish were found to have little influence. Lastly, it was also found that attrition rapidly sets in the first few years before levelling off in the following years, after which most of the language knowledge remains relatively stable. Bahrck named this knowledge 'permastore-content', and argues that "during an extended acquisition period, portions of the long-term memory content acquire a semipermanent character. This content is maintained indefinitely without rehearsals, and is immune to ordinary interference effects" (p. 2).

In another important landmark study, Weltens (1989) posed the question "whether, and if so, to what degree, foreign language proficiency 'attrites' during longer periods of non-use" (p. 21). A design that combined cross-sectional and longitudinal elements was employed to investigate the possible attrition of French among approximately 150 Dutch students. These participants consisted of a control group with subjects who had just completed their four or six years of training, and an experimental group of participants who had received the same training, yet had not used French for two or four years. Multiple

receptive language proficiency tests were used to retrieve data on participants' receptive proficiency, which was complemented with self-reported attitude and proficiency data that was gathered through the use of a questionnaire. In support of Bahrck (1984) it was again found that a fixed amount of a language is lost rather than a fixed proportion, in that all participants showed similar amounts of attrition, which had more impact on the relative amount of remaining proficiency of speakers who had a lower attained proficiency at the onset of attrition. Interestingly, even though participants estimated their language loss to be severe, it was discovered that lexical, morphosyntactic and grammatical language knowledge had deteriorated slightly, and that reading and listening skills had even improved over time. Since reading and listening especially showed improvement for subjects who had continued learning other foreign languages, it was suggested that cognitive maturation as well as further language training could have influenced these skills. In addition, Weltens suggested that time-limited testing should be employed in order to find more attrition in lexical and grammatical language skills, since in this study "subjects had ample time to squeeze out of their memories anything that was still there, however vaguely or remotely" (p. 93). Lastly, Weltens's study also showed that the similarities between the L1 and FL might influence attrition, since lexical cognates and morphosyntactic structures that were similar in the first language were found to be less susceptible to attrition than non-cognates and dissimilar structures.

On the basis of the study by Weltens (1989), Grendel conducted a study in which a lexical decision paradigm was employed to re-examine the possible attrition of French among Dutch learners (reported in Weltens & Grendel, 1993). In a design that resembles the work by Weltens (1989), approximately 200 Dutch subjects from two training levels were tested at the end of their foreign language education, as well as two and four years later. Participants' knowledge of the French writing system was tested through using pseudowords with frequent consonant clusters and pseudowords with non-frequent consonant clusters. It was expected that this task would show participants' sensitivity to French orthographic knowledge, as this knowledge would cause participants to reject pseudowords with low-frequency consonant clusters faster than non-frequent ones. Even though Grendel hypothesized that this sensitivity would disappear after these years of non-use, meaning reaction times would show less differences, it was found that differences in reaction times were still the same after two and four years of non-use. In addition, although it was also

expected that congruent semantic priming would cause faster reaction times which would later disappear due to a lack of use, this was not confirmed by the data either. Therefore, Weltens and Grendel (1993) concluded that “future studies of language attrition should focus on language production” (p. 154).

Unfortunately, substantial differences in the teaching, learning and use of foreign languages in the latest years have made it difficult to generalize these earlier findings, due to which it is still unclear whether foreign language skills deteriorate after longer periods of non-use (Schmid & Mehotcheva, 2012). According to Weltens (1988), foreign language teaching in the 80s primarily focused on receptive skills rather than communicative ability. This education characteristic influenced all aspects of language learning, as few other options outside the classroom were available. Not only did learners receive very limited foreign language input, the opportunities where the target language could be used in real life situations were also very limited, as travelling abroad was less frequent. Where foreign language learning used to only occur in formal language settings in the classroom, the current situation is quite different. Nowadays, there is an increasing emphasis on the importance of communicative skills in the classroom, and there is an increasing number of opportunities to receive naturalistic language input and learn foreign languages both inside and outside the classroom. According to Schmid and Mehotcheva (2012), “Globalization, mobility within the EU, the Internet, technological developments and the easy and cheap access to travel have made foreign languages very accessible. Authentic materials [...] can be downloaded from the Internet and experienced at the learner's convenience” (p. 6).

These transformations in language teaching, learning and use can be found to have an influence on the increasingly multilingual Dutch population as well. The changes in the Dutch society are especially visible in research conducted for the European Commission in 2006 and 2012, where respondents were asked how many languages they could speak well enough to engage in a conversation, excluding the mother tongue. Where in 2006 91% of the Dutch respondents claimed to speak at one foreign language, 75% at least two foreign languages, and 34% three or more foreign languages, these percentages rose to respectively 94%, 77% and 37% in 2012 (TNS opinion & social network, 2006; 2012). All in all, since innovation in language teaching, learning and use have led to a more multilingual population, generalizing earlier research to the present language learning context can be problematic, due to which it remains important “to address the question to which degree

the results reported here can be generalized to subjects who have received French training with teaching methods that are fundamentally different from the ones currently employed in Dutch secondary schools” (Weltens, 1988, p. 99).

### 2.2.2. More recent studies

As the findings of earlier research might not be generalizable to the present study because of changing language practices and different settings, more recent studies by Murtagh (2003), Mehotcheva (2010) and Xu (2010) will now be discussed as well. Firstly, in the study by Murtagh (2003), the retention and attrition of formally acquired Irish was tested among participants during and after high school. Even though this research took place in Ireland and could therefore be considered a L2 rather than a FL attrition study, it should be emphasized that Irish is only collectively used by 2.4% of the population, due to which language learners still have little opportunities to practice their Irish (Murtagh, p. 3). Since the acquisition and use of Irish is thus similar to that of foreign languages, Murtagh’s study will be considered here as well, especially since the study looked at whether high school leavers managed to maintain and use their Irish in this situation. By looking at 59 students from three different levels of proficiency and immersion both at the end of their education as well as 18 months later, Murtagh not only investigated whether there was attrition in FL Irish skills after 18 months of non-use, but also looked at the role of factors such as motivation, attitudes, language use and proficiency in this process. Results showed that initial proficiency and reading in Irish were predictors of language proficiency performance. However, no significant evidence of language attrition over the investigated 18 months could be found, which, in line with Weltens’s (1989) study, was in contrast with their negative self-ratings. It was suggested that a longer time-period together with tests that could detect more subtle difference in language proficiency might have yielded different results.

Recently, Xu (2010) and Mehotcheva (2010) published doctoral dissertations on foreign language attrition as well. In looking at the attrition of English among Dutch and Chinese learners, Xu investigated the effect of attained proficiency, language contact and use, and language attitude in two different environments. Two years after the language learning ended, attrition was observed in both participant groups. Where Chinese speakers showed deterioration across all performance tests (reading, speaking, writing and listening), Dutch participants only displayed attrition in writing. Unexpectedly, it was found that

language contact did not predict performance, which demonstrates that the different environments had no effect on attrition. It was also discovered that both initial proficiency and language attitudes influenced attrition, however, where the effect of language attitudes was only significant for the Chinese learners, initial proficiency had a strong influence on the attrition of both participant groups. The importance of initial proficiency for attrition was also found in the dissertation by Mehotcheva (2010). In this study, Mehotcheva focused on the attrition of Spanish acquired by Dutch and German learners in university settings and then practised in real life for a short amount of time during exchange programs. The attrition was researched by comparing three attriting groups to a baseline group as well as by studying the longitudinal data of five attriting students over the span of a year. In thus combining a cross-sectional and longitudinal research design, the influence of factors such as length of the attrition period, contact with the language, attitude and motivation and initial proficiency on the attrition of Spanish among the Dutch and German learners was investigated. Attrition was found on both linguistic and psycholinguistic levels, as the results showed less fluency and slower reaction times in the attriting groups. Even though the results on most background variables were mixed, it was found in this study that attained proficiency was the strongest predictor of language attrition, which is in line with the studies by Xu (2010) and Murtagh (2003).

Even though these and other studies on FL attrition have recently attempted to provide more information on whether foreign languages can attrite after a period of non-use and the governing factors of this process by looking at the influence of aspects such as attained proficiency, language attitudes and contact with the language, much is still unclear. Previous studies have now laid the groundwork for future studies to build on, yet further research into the field of foreign language attrition is still considered vital in order to further explore the phenomenon. It remains important to validate previous findings and look further into the factors and principles that govern foreign language attrition. This has been pointed out in Schmid and Mehotcheva's (2012) overview on foreign language attrition as well, in which they argued that future research should address the following three core issues:

First, there is need to confirm the validity of the existing findings since they are based on a very limited number of studies and target languages. Second, there is still a great deal to be discovered about the governing principles of FL attrition and third, it

should be further established what factor(s) and/or combination of factors influence the processes of attrition and how (pp. 4-5).

### 2.2.3. Summary of findings

As a lack of validation studies is a core issue in foreign language attrition research, findings from previous studies will be summarized first. Schmid and Mehotcheva (2012) have identified the main findings in previous work on FL attrition, which can be summarized into three groups, namely findings regarding the influence of task type, regarding attrition over time and those regarding the influence of proficiency and language use.

Considering the type of tasks, it has been suggested that receptive skills are less susceptible to attrition than productive skills. Since receptive skills did not show attrition in studies by Weltens (1989) and Weltens and Grendel (1993), it was concluded that recall is more difficult than recognition. Other studies have focused on attrition over time. Bahrck (1984), for example, first discovered that attrition heavily sets in the first few years, after which performance levels remain relatively stable. Similarly, Mehotcheva (2010) and Taura (2008) found that the process is not linear, as the length of the attrition period did not predict the amount of language loss. This could be explained by the finding that attrition is not only predicted by time, since other factors are involved as well (Murtagh, 2003; Weltens, 1989). In further research, attained language proficiency and language use during the attrition period have been studied as possible predictors. In these studies, it was found that both higher course grades (Bahrck, 1984) and higher initial proficiency (Mehotcheva, 2010; Murtagh, 2003; Weltens, 1989; Xu, 2010) predict better foreign language retention, and that languages that are mastered to a certain extent are relatively immune to attrition (Bahrck, 1984; Mehotcheva, 2010). Interestingly, even though attained proficiency often plays an important role in attrition, it was discovered that language exposure during the attriting period does not suffice to prevent attrition (Bahrck, 1984; Weltens, 1989; Xu, 2010).

### 2.2.4. Predictive factors

Apart from validating these previous findings, it is also important to further explore the factors and principles that govern foreign language attrition. Many empirical studies on attrition have shown variation within the tested populations, in which multiple factors have been identified that could predict attrition. Apart from the aforementioned attained proficiency and language contact and use during the attrition period, other extralinguistic predictors of attrition include age, attitude and motivation, and the length of the periods of exposure and attrition. All of these factors will be addressed in the following section.



Since learners of foreign and second languages display much more variation in their language skills than native speakers, *attained proficiency* at the onset of the attrition period is especially important for research on L2 and FL attrition. In contrast to language acquisition, there is no common starting point for language attrition. Many studies have found that there is a relation between attained proficiency and attrition, in which a lower language proficiency at the onset of attrition is often associated with a greater amount of attrition (see de Bot & Clyne, 1989; Harley, 1994; Mehotcheva, 2010). However, studies by Bahrack (1984) and Weltens (1989) have reported that the amount of attrition is not related to attained proficiency, as they found that a fixed amount of a language is lost rather than a fixed proportion. Proficiency still plays a role however, since the fixed amount of attrition has a relatively larger impact on attriters with a lower proficiency at the onset of the attrition period, and because it has been found that a certain critical threshold of FL knowledge could prevent attrition (Bahrack; Mehotcheva; Neisser, 1984).

Other factors that could influence language attrition include the *length of exposure* to the language and the *length of the attrition period*. In 1999, Hansen suggested that *length of exposure* to the language, rather than attained proficiency would facilitate better language retention. These two factors have been found to correlate in previous studies, as longer language exposure often leads to higher proficiency. Moreover, attained proficiency and language exposure are even regarded as confounds in earlier studies, since language teachers often provided the only FL input. In a more recent study, Mehotcheva (2010) looked at Spanish that was acquired in university settings and then practised in real life for varying amounts of time during exchange programs. When looking at the separate effects of attained proficiency and length of stay in the FL environment on attrition, it was found that the effect of attained language proficiency was significant, whereas no correlation between the amount of time spent in the country and attrition was found. In turning to the *length of attrition period*, it is often assumed that language skills show a gradual decline. However, even though a relation between the length of this period and the amount of language attrition has been confirmed, Mehotcheva (2010) and Taura (2008) found that the process is not linear, and that the length of the attrition period alone cannot predict the amount of language loss. This is in line with work by Bahrack (1984), who discovered that language skills show deterioration from approximately 2-3 years to 6 years after the onset of attrition, after which performance levels remain relatively stable.

Even though *language contact and use* during the attrition period is often considered to be a crucial predictor of language attrition, “research on attrition has not found unequivocal support for the importance of rehearsal for the maintenance of an attriting language” (Schmid and Mehotcheva, 2012, p. 16). Where one study found that self-reported FL exposure during the attrition period was a significant predictor of the retention of FL vocabulary among missionaries who have returned to their English speaking environment (Hansen, 2011), others reported that remaining in contact with the language is not enough to prevent foreign language attrition once attrition has set in. (Bahrick, 1984. Mehotcheva; 2010. Xu, 2010). According to Schmid (2011), similar results have been reported in work on L1 attrition, where many studies did not find a relation between the degree of attrition and frequency of language use during the attrition period. It has been suggested that it might be difficult to find an effect because language contact and use is a very complex factor which often cannot be measured objectively. Moreover, other factors such as the attitude and motivation also play a role, since these have an influence on whether the attriter actively searches opportunities to maintain and use the language.

In looking at the influence of *attitude and motivation* on language development, it is recognized that these variables are important for achievement, the active participation in language lessons, the perseverance in studying and maintaining language, and in the time spent to find opportunities to use the language (Murtagh, 2011). In linking attitude and motivation to language attrition, Gardner (1982) argued that the relation between attitude and motivation and FL proficiency is likely to influence language retention as well. However, the effect of attitudinal factors on language attrition has not been conclusively shown (Schmid and Mehotcheva, 2012), which has led Weltens and Grendel (1993) to suggest that attitudes and motivation might have less of an effect on language attrition than on language acquisition. This has been further supported through the findings by Hansen (2011) whose study on foreign language vocabulary among missionaries did not find a relation between vocabulary retention and attitudes, whereas such a relation was found in the acquisition of this vocabulary. Schmid (2016) has suggested that this might have resulted from the fact that attrition takes place over the course of years, whereas language attitudes is considered a very dynamic variable, and thereby claims that “the impact of attitudes on attrition may be too variable and unstable to establish” (p. 9). Furthermore, the influence of these attitudinal factors might also vary depending on the skills that were tested in the FL proficiency tasks

since a study by Snow, Padilla and Campbell (1998) showed that attitudinal factors did influence retention in writing and speaking FL Spanish, but did not influence receptive skills.

In addition, where *age* is often found to have a negative effect on acquiring languages, in which older language learners are usually less successful, this effect seems to be reversed in language attrition. In studies by Bylund (2009) and Pallier (2007), for example, it was found that individuals who stop using their L1 before puberty display high levels of attrition. Similar results were found in studies on the effect of age on foreign language attrition. In a study by Berman and Olshtain (1983) for example, younger children showed a larger amount of attrition than older children, and in looking at the retention of Hindi-Urdu after an attrition period of 20 years, Hansen (1983) found that proficient preschool children showed more attrition than their initially less-proficient mother. Although studies have not been able to pinpoint a specific age period during which individuals are most susceptible to attrition, studies with young children have often reported considerable language deterioration whereas most post-puberty research has barely found any attrition (Schmid and Mehotcheva, 2012). The development of literacy has often been suggested as possible explanation of these large differences (Hansen, 2001; Köpke, 1999), and Köpke and Schmid (2004) even suggested that “the younger the child is when the language of her environment changes, the faster and deeper she will attrite” (p. 7).

#### 2.2.5. Attrition in receptive and productive skills

Another important factor that will be addressed in this study is the difference between the extent of attrition in receptive and productive tasks. Since receptive skills are acquired earlier than productive skills, it is expected that they will be easier to retain as well (Murtagh, 2003). Multiple studies on foreign language attrition have supported this theory for more proficient individuals. Bahrack (1884), for example, reported more attrition in recall tasks than in similar recognition tasks, and research by Cohen (1989) and Hedgcock (1991) found more attrition in productive skills such as writing and speaking than in receptive skills such as reading and listening. According to Bardovi-Harlig and Stringer (2010), “receptive vocabulary (as opposed to vocabulary that is produced) and receptive grammar are also included as receptive skills [...] although neither is a skill but rather a component of the L2 grammar” (p. 24). Within the lexical domain, it has been found that receptive word knowledge is easier to acquire and retain than productive word knowledge (Webb, 2008).

Research by Weltens (1989) could not find a significant amount of attrition in testing receptive skills, while the attriters reported to experience considerable lexical loss. According to Weltens (1989), it may be the case that “the accuracy may not have suffered (yet), but that the speed has” (p. 93), in which it is argued that attriters are not able to retrieve the correct information in time. Therefore, it was expected that a timed lexical decision task would show a larger extent of attrition. However, in a follow up study by Weltens and Grendel (1993) that used lexical decision experiments with time restrictions to investigate the possible attrition of French among Dutch learners, no significant levels of FL attrition were found.

According to Schmid and Mehotcheva (2012), “Recognition of items is based on stimulation from the outside, such as auditory or visual signals, whereas production of the same item requires an impulse from within the system, thus making it a more difficult process” (p. 10). An individual could therefore be able to understand a word but not produce it. This might explain why Weltens and Grendel (1993) could not find significant levels of attrition through using an time restricted lexical decision task, since the online task would have to be productive rather than receptive to show larger extents of attrition that the subjects reported. According to Hansen (1999), forgetting vocabulary items resembles being unable to find a misplaced object, as the missing information is ‘lost but not gone’. This is most noticeable in language production, as the item is not provided but has to be remembered. This is supported by the ‘tip of the tongue’ state as well, a phenomenon in productive tasks where subjects report to ‘know’ the required item, but experience issues in accessing it (Murtagh, 2011). According to Ecke (2004), attrition studies with productive tasks have found both a greater degree of disfluency, in which attriters display more pausing, hesitation and self-repair, as well as lexical retrieval problems that resemble ‘tip of the tongue’ states. The few studies that compared productive and receptive skills found that receptive skills can be affected by attrition, but to a lesser extent (Ammerlaan, 1996; de Bot and Stoessel, 2000). However, more studies that compare productive and receptive skills are needed to further understand the foreign language attrition phenomenon.

### **2.3. Linguistic distance**

A factor that has received remarkably little attention in foreign language attrition is the effect of the linguistic distance between the mother tongue and the attriting language. In this section, linguistic distance and the two components where it is comprised of will be discussed before turning to previous findings on its effects on language development.

#### 2.3.1. Defining linguistic distance

Linguistic distance is often divided into objective and a subjective distance. The objective side, also called language distance or language typology refers to the distance that can be objectively established between languages and language families and is often used for language classification. According to de Angelis (2007), both relatedness and formal similarity can be used to identify this objective distance. Relatedness is defined on the basis of genetic affiliation and refers to a more qualitative measure of language typology, “whereby languages are said to be related or close to one other when they belong to the same family (e.g. Indo-European) or the same subgroup of a family” (p. 26). Formal similarity, on the other hand, is a more quantitative language typology measure in which the similarity between formal features of the different languages is measured by looking at elements such as lexicon, phonetic features or grammatical structures. Schepens, van der Slik and van Hout (2016) argue that distance measurements on the basis of qualitative notions such as relatedness are useful in studies that compare a few languages, whereas quantitative measures that use formal similarities are required for larger comparisons.

Moreover, the subjective side of linguistic distance, also called perceived linguistic distance, “is the distance that learners perceive to exist between languages that may, or may not, correspond to the distance that actually exists between them” (de Angelis, 2007, p. 22). The concept of perceived language distance was created by Kellerman (1977; 1978; 1987), who found that Dutch learners of L2 English had varying acceptance rates in judging the use of idiomatic expressions that contained the verb ‘breken’ of ‘to break’, in that more prototypical uses of the verb had higher acceptance rates. After analysing a comparable study on Dutch learners of L2 German that yielded similar results (Jordens, 1977), Kellerman (1987) concluded that the likelihood of transfer between two languages depends on both perceived language distance and prototypicality. Thus, if learners encounter languages that are perceived as close to each other, typically used forms have a higher transferability.

### 2.3.2. Previous findings

Linguistic distance has received much more attention in the field of language acquisition than in language attrition (de Bot, 1997). Therefore, findings in the acquisition context will be introduced first, after which previous work on linguistic distance in attrition will be discussed. In looking at the effects of linguistic distance within the language acquisition context, language transfer and learnability have been identified as important factors. According to de Angelis (2007), studies on the effect of language distance on transfer between languages have established that transfer is more likely between linguistically close languages than between more distant languages. Cenoz (2001), for example, found that both typological distance and perceived distance influence the occurrence of linguistic transfer among multilinguals. In looking at the acquisition of English as a third language among learners with knowledge of Spanish and Basque, it was discovered that students showed stronger cross-linguistic transfer from the typologically closer Spanish, even when Basque was their L1. Perceived language distance could play a role here as well. Because older students were found to transfer fewer Basque items than younger students, Cenoz (2001) argued that transfer differences could result from a higher metalinguistic awareness among older students, which in turn may increase awareness on language distance.

The influence of language typology on the occurrence of linguistic transfer is important for the field of language acquisition because of its moderating effects on learnability. For the purposes of this study, the concept of learnability can be defined as the degree to which previously learned languages impede or facilitate the learning of additional languages. In a study on L2 learnability that looked at the speaking scores of Dutch learners with 35 different mother tongues, Schepens, van der Slik and van Hout (2013) found that larger linguistic distances correlate with lower rates of learnability. In later applying the concept of learnability to the acquisition of a third language, Schepens, van der Slik and van Hout (2016) claim that “the current understanding of typology effects on L3 learnability suggests that a typological similarity or overlap between languages leads to positive cross-linguistic influences, both for L1 to L2 influence”. This theory was confirmed in their study as well, in which it was found that both the linguistic distance of the L1 and the linguistic distance of the L2 have an effect on the learnability of the L3, and that the L2 is less influential than the L1. As the study focused on typological proximity, perceived distances were not taken into account.

Regarding the effects of typological proximity on attrition, it has been proposed that typologically closer languages could either have an inhibitory or facilitatory effect on attrition (Ecke, 2004; Schmid and Mehotcheva, 2012). In the study by Altenberg, for example, a married native German couple living in the US was studied to compare their attrition across different domains. Through using acceptability ratings, it was found that first language attrition is most likely to occur in cases where the first and second language are similar. In contrast, other researchers have argued that typologically closer languages might be more resistant to language attrition than languages that are more distant (Andersen, 1982; Romaine, 1995). In a study by Hansen (2011), for instance, the acquisition and attrition of German, Spanish, Portuguese, Japanese, Korean, or Mandarin vocabulary by L1 English missionary learners was compared to see whether typological proximity influences language development. It was discovered that the learners of the three Asian languages showed much less attrition than those who had acquired Spanish and Portuguese vocabulary.

In the present study, Andersen's (1982) Linguistic Feature Hypothesis will be used to provide a better insight in the influence of typological proximity on foreign language attrition. According to Andersen, linguistic features that are similar in the L1 and the L2/FL are less susceptible to attrition than features that are different. Since typologically closer languages have more of these similar features than more distant languages it can be argued that typologically close languages are less likely to show attrition. So far, this hypothesis has mostly received support from evidence on the acquisition and retention of cognates. According to Lado (1955), cognates can be described as "words that are similar in form and meaning" across different languages. In comparing different aspects of word difficulty in the acquisition of vocabulary, Willis and Ohashi (2012) found that cognateness was the largest contributor to word difficulty. Since non-cognates were significantly more difficult to acquire than cognates, this supports the hypothesis that similarity in linguistic features aids language development. In addition, in applying the linguistic feature hypothesis to foreign language attrition, Weltens (1989) found that cognates also showed better retention than non-cognates. Weltens concluded that the linguistic feature hypothesis was not only confirmed by the differences that were found between cognates and non-cognates in the lexical domain, but that it was also supported in the domains of phonology and grammar because structures that are similar in the L1 and FL showed less attrition in these domains than those that are different.

## 2.4. The present study

Since the attrition of instructed foreign languages has been an under researched field in language attrition research, little is known about the factors and principles that govern FL attrition. The short literature review above shows that studies have identified multiple linguistic and extralinguistic factors that could influence FL attrition, including attained language proficiency, age at the onset of attrition, language contact during the attrition period, attitude and motivation, the length of the periods of exposure and of attrition, and linguistic distance. However, few studies have addressed these factors through empirical research, and even fewer have compared the attrition of different languages.

In aiming to address this gap and contribute to the field of foreign language attrition research, the present study was conducted to investigate the foreign language attrition of receptive and productive language skills in German and French among Dutch learners. Moreover, there was a focus on the effect of linguistic distance on FL attrition, since van der Slik (2010) reported that German is typologically closer to Dutch than French. This was analysed through using McMahon and McMahon's (2005) cognate distance measure, in which French (.244) showed a smaller portion of cognates than German (.838), thereby demonstrating less similarity to Dutch.

Therefore, a study was conducted that aimed to answer the following research question: *"Does linguistic distance influence the receptive and productive foreign language attrition of German and French among Dutch students?"*. This question was tackled through comparing an attriting group and control group on receptive and productive tasks measuring foreign language proficiency in either French or German, in which variables such as language attitudes and use were also taken into account. Through this research design, the following sub-questions were addressed:

1. Are there differences between the control group and the attriting group that point to foreign language attrition?
2. Are there differences between the attrition of French and that of German?
3. Do receptive tasks show a different degree of attrition than productive tasks?



## 2.5. Hypotheses

Even though little research has been done in the field of foreign language attrition, we still had expectations regarding the outcomes of the aforementioned questions.

Firstly, it was hypothesized that there would be differences between the baseline group and the attriters, as it was expected that students would display foreign language attrition in this study, because the lack of foreign language instruction and language contact they experienced after the end of their secondary school can cause a deterioration of language skills, while the baseline group has had constant instruction and language exposure. However, it was also taken into account that students might outperform the controls due to a larger amount of language experience.

Secondly, in turning to the attrition of the different languages, it was expected that there would be different degrees of attrition in French than in German due to the effects of linguistic distance on language attrition. It was expected that German would show a smaller degree of attrition than French, since van der Slik (2010) has demonstrated that German is typologically closer to Dutch than French, and because previous research has suggested that typologically closer languages facilitate language learnability and retention (Hansen, 2011; Schepens, van der Slik and van Hout, 2016; Weltens, 1989). However, since other studies have found that typologically closer languages could have a negative influence on attrition due to a greater susceptibility to conflict, discrimination problems and interference (Altenberg, 1991; Clyne, 1992; Isurin & McDonald, 2001; Saville-Troike, Pan & Dutkova-Cope, 1995), it was taken into account that there could be more attrition in German than in French.

Regarding the second question on the effect of task type, it was expected that there would be variation between performance on productive and receptive tasks that reflects different amounts of attrition in these tasks. It was most probable that productive tasks would demonstrate a larger amount of language deterioration between the different groups than receptive tasks, since previous studies have suggested that productive skills might be more susceptible to attrition than receptive skills (see Bahrack, 1984; Webb, 2008; Weltens and Grendel, 1993). However, this was only a tentative hypothesis as only few studies have investigated the differences between foreign language attrition in productive and receptive skills, leaving many options undiscovered.

### 3. Method

In order to investigate the influence of linguistic distance on foreign language attrition, two groups of participants were asked to fill in an online questionnaire that consisted of language proficiency tests in either one or two languages as well as several background questions. More information regarding participants, materials, design and procedure and analyses is presented in the sections below.

#### 3.1. Participants

Participants were recruited through the use of different Facebook groups and personal contacts with teachers, through which they were asked to take part in an online questionnaire. From the 268 participants who had started the online survey, 149 had to be excluded because of incomplete data, and 24 others were ruled out because the information gathered through the background questions indicated that they were not suitable to participate in this study. Examples included participants who were still using their attriting language on a daily basis as well those who were studying the attriting language in higher education settings. In addition to this, eight participants who had completed the questionnaire within a ten minute time frame were also excluded. This selection left 87 valid response sets, which could be divided according to level of education.

The first response set consisted of 30 responses from secondary school pupils from different schools throughout the Netherlands. The participants in this groups have had approximately six years of French and/or five years of German classes in their secondary school, participated in the national final exams shortly after filling out the survey. Since these participants have received a more or less continuous foreign language instruction up to the moment of testing, this group is also referred to as the baseline group or control group. Only secondary school pupils with VWO or gymnasium level were asked to participate in this study, since this educational level requires the highest foreign language proficiency in the Dutch school system. The group consisted of 3 male participants and 27 female participants, all of whom were between 16 and 19 years of age ( $M=17.6$ ,  $SD=.861$ ). Even though some participants complete the questionnaire for both of the languages, it was decided that only the language in which they first participated in was used for the analyses of the study to ensure validity. As a result, there were 19 responses for French and 11 responses for German.

The second response set consisted of 57 responses from attriting students from different bachelor and master programs and various universities. Even though the participants in this group have received similar foreign language education at a VWO level, they have taken the official final exams in these foreign languages a few years ago, and reported to have barely used their German and French in this 1 to 7 year attrition period after their secondary school education ended ( $M=4.19$ ,  $SD=1.542$ ). This participant group, also referred to as the attriting group, consisted of 9 male and 48 female participants who were between 18 and 25 years old ( $M=21.9$ ,  $SD=1.599$ ). In this group, 26 participants completed the questionnaire for German, and 31 completed it for French.

### **3.2. Materials**

For the purpose of this study, an online questionnaire was created through using Qualtrics (2017), which is included in appendix I. This survey was designed to measure foreign language attrition in German and French, and contained both background questions and four different tasks that measures foreign language proficiency, namely a c-test, a reading test and a receptive and productive vocabulary test.

#### **3.2.1. Background questions**

Since the questionnaire was designed to measure attrition in German and French, participants could fill in the questionnaire for either one or both of the languages, depending on whether they had received five to six years of secondary school education in the particular language. Therefore, background questions were split into two parts. The first part of the survey was used to collect information on the participants' gender, age and current level and year of education so that the participants could be divided into two groups on the basis of their level of education. In addition, general questions that were relevant for all participants, regardless of the state of attrition and language(s) that were tested, were included here as well. These questions collected data on matters such as the year in which the subject had participated in the Dutch secondary school exams, the number of languages spoken, and the current (self-reported) proficiency in those languages.

The second set of background questions was used to collect language-specific background information on aspects such as language attitude and use and was partially adapted from Weltens (1989). This part included questions on the participant's attitude

towards the language, as well as on the attitude towards the received language instruction, towards using the language, and towards one's personal proficiency. In addition, participants were also asked to indicate how often they had used the language for reading, writing, speaking and listening in the last two years, and in which contexts.

### 3.1.2. Language proficiency tests

After the background questions, participants were asked to take part in several language proficiency measures for either German, French or both languages, depending on whether participants had indicated that they had received a sufficient amount of foreign language instruction in those languages. In order to obtain a measure of the participants' foreign language proficiency, participants here had to complete a reading task, two vocabulary translation tasks and a c-test.

For the reading tests, participants were asked to read a text in the foreign language and then answer a combination of five multiple choice questions and open questions about that text. As can be seen in appendix I, there were three open questions and two closed questions for German, and one open question and four closed questions for French. In order to ensure that the reading texts had the right level of difficulty which was comparable for both languages, texts and questions were adapted from the standardized CITO tests that are freely available at '*Examenblad*', a website created by de College van Toetsen en Examens (2017) that is commissioned by the Dutch ministry of Education and Culture. Since more recent CITO exams are still regularly used in secondary schools to provide test-specific reading practice, older CITO exams were used in this study to ensure that participants had a minimum amount of prior knowledge and experience with the test. Therefore, the French text was adapted from the secondary school resit exam of 2003, and the German text from the regular exam of 2004. Both of the reading texts were roughly half a page long and contained approximately 400 to 500 words. The reading tests in the questionnaire consisted of five items measuring German reading skills ( $\alpha = .29$ ) as well as five items measuring French reading skills ( $\alpha = .34$ ).

The vocabulary translation task was divided into two parts, in which participants were first asked to translate ten words from the foreign language to the mother tongue, and then ten words from the mother tongue to the foreign language. All words that have been used in this study were adapted from the same word list that contains words that frequently

occur in the final foreign language exams and is created by Stichting Studiebegeleiding Leiden [SSL] in collaboration with the university of Leiden (2016). The two vocabulary parts have been treated as different tests in this study because the first part can be argued to measure receptive vocabulary knowledge, whereas the second part measures productive vocabulary knowledge. Furthermore, to ensure similarity, each vocabulary translation task was manipulated to contain five nouns, three verbs and three cognates. In accordance with Weltens (1989), cognates were here operationalized as words “that (1) were very similar in meaning to their Dutch equivalents, and (2) could be deduced from their Dutch equivalents by means of one or two transformations” (p. 39). The vocabulary tests all consisted of ten productive items and ten receptive items per language. In analysing the reliability of the tests, it was found that the German vocabulary test showed better reliability on the productive items ( $\alpha = .67$ ) than French ( $\alpha = .39$ ), whereas French ( $\alpha = .59$ ) scored slightly higher than German ( $\alpha = .52$ ) on the receptive items.

The last test that participants completed was a ten item c-test. This test has been chosen as replacement of the cloze test because it has been found to minimize deletion problems and can be completed faster because it requires a smaller number of words (Grotjahn & Stemmer, 1985). In a c-test, the second part of every second word is left out after a one to two sentence lead in. In this study, the c-tests were created through using authentic texts adapted from websites commissioned by the Centre International d’Antibes (2017) and De Weg (2017). The tests were judged by a graduate student of German and a graduate student of French to ensure that they had the right difficulty level. Since these graduate students indicated that twenty items might take the participants too long to complete in combination with the other proficiency measures, it was decided to include ten items per c-test in this study. Reliability analyses of these items showed that the c-test items had a remarkably better reliability for French ( $\alpha = .71$ ) than for German ( $\alpha = .14$ ).

### 3.3. Procedure

Firstly, participants were presented with an introductory screen through which they were informed about the nature of the questionnaire, and were informed that the participation included consent. Then, general background questions were administered to gather the data on basis of which the participants were divided into groups.

Subsequently, the main part of the study was conducted, which consisted of a 2 (language: German vs. French) x 2 (Group: baseline vs. attrition) x 4 (task type: reading, receptive vocabulary, productive vocabulary, C-test) design. In this section, participants were presented with the two language related blocks that were presented in a counterbalanced order so that some participants would see the German part of the survey first, while others would see the French part first. In this way, no training effects would occur for the participants who completed the survey for both languages. In each block, participants answered the language related background questions to make sure that they met the conditions, and then completed the different language proficiency tests. For both languages, the reading test was presented first, the two vocabulary tests after (from FL to L1 and then from L1 to FL) and the C-test last.

### 3.4. Analyses

The responses on the different proficiency tests were all scored manually, in that correct answers were recoded as ones, whereas incorrect answers were recoded as zeros. In both the vocabulary tasks and the c-test only one answer was correct, due to which objective scoring was possible. However, the reading test contained open questions as well. Therefore, the graduate students of German and French who had provided c-test judgements were also asked to score the open reading questions. Although these ratings differed from the experimenter's ratings in 7% of the cases (11 out of the 161 items), it was decided to discuss these items so that one final answer was used in the analysis.

Subsequently, group means and standard deviations were calculated for the participants, after which several analyses were performed to explore the questionnaire data. It should be noted here that parts of the test data were found to have a statistically significant deviation from normality. Therefore, bootstrapping with 1000 samples was performed for the analyses that involved the French reading test and receptive vocabulary

test, as well as for those that involved the German receptive vocabulary, productive vocabulary and c-test.

Several independent samples t-tests were performed so that the differences between the attriting group and the baseline group could be analysed separately for each proficiency test. As mentioned before, two vocabulary translations tests have been separated in these analyses as well, since translating to the mother tongue measures receptive vocabulary, whereas translating to the foreign language measures productive vocabulary. Additionally, it was also decided to perform two-way ANOVAs so that the combined effects of participant group and the tested language on participants' test scores could be analysed for each of the proficiency tests.

Moreover, dependent t-tests were performed to analyse the difference between participants' performance on productive and receptive tasks, so that the effects of the different task types on the test scores could be investigated. Scores on the different tests were standardized to enable comparing them in these analyses. In addition to this, it was also researched whether the attriters or controls were performing significantly better on productive or receptive tasks. For these purposes, it was decided to analyse the combined effects of the within subjects effect of task type and the between subjects effect of participant group per language through using a repeated-measures ANOVA.

Lastly, the data was further explored by looking at the relation between course grades and test scores, between attrition period and test scores, and between the period of attrition and test scores while controlling for received course grades. For these analyses, attrition period was calculated as the amount of years that had passed since secondary school exams in these languages had been taken, and correlations as well as partial correlations were used to investigate the relation between this period and the test scores on the different proficiency tests. Furthermore, the effect of cognateness on participants' vocabulary translation test scores was explored as well. Both dependent t-tests and repeated measures ANOVA's were again used to analyse this data, which was standardized.

## 4. Results

In this section, the results of the conducted study are presented. Results of the reading tests are introduced first, followed by the vocabulary tests and C-tests. Some explorations and a preliminary conclusion are presented last.

### 4.1. Reading tests

In looking at the difference between the baseline group and the attriters on the reading tests, separate analyses were performed for German and French, which yielded no significant differences. Descriptive statistics on the reading test performance are presented below in Table 1, the maximum possible scores was 5 points, due to which it can be concluded that there were no ceiling effects. Firstly, in looking at the performance differences on the French reading test, it can be observed that the attriters had a higher average score ( $M=2.26$ ,  $SD=1.210$ ) than the baseline group ( $M=1.89$ ,  $SD=1.329$ ). However, this difference of  $-0.363$ , 95% CI  $[-1.059 - .349]$  was not statistically significant  $t(48)=-.993$ ,  $p=.326$ , which indicates that the attriting group did not perform significantly better on the reading tests than the baseline group. Moreover, although it was observed that the difference between the baseline group and the attriters was larger for German, with attriters again scoring higher ( $M=1.96$ ,  $SD=1.371$ ) than the baseline group ( $M=1.45$ ,  $SD=.820$ ). This difference of  $-0.507$ , 95% CI  $[-1.214 - .170]$  was again not found to be significant ( $t(35)=-1.138$ ,  $p=.263$ , due to which it can be concluded that the attriters did not perform significantly better on the reading tests than the controls.

Table 1. Reading scores of the participant groups

		<b>M</b>	<b>SD</b>	<b>N</b>
<b>Baseline</b>	<i>German</i>	1.45	0.820	11
	<i>French</i>	1.89	1.329	19
<b>Attriters</b>	<i>German</i>	1.96	1.371	26
	<i>French</i>	2.26	1.210	31

In addition, a two-way ANOVA was conducted to further examine the combined effects of the participant group and



the language that was tested on the reading scores (see graph 1). It was found that neither the individual effects of language ( $F(1,83)=1.625, p=.206$ ) and participant group ( $F(1,83)=2.267, p=.136$ ) nor the interaction effect of language and education on reading scores ( $F(1,83) = .062, p=.804$ ) were statistically significant. This indicates that there were no significant differences between the average scores of the two participant groups, nor between the two reading tests, and that the performance of the baseline group and the attriting group on the reading tests was not significantly influenced by the tested language.

## 4.2. Vocabulary tests

In this section, the results of the analyses of the receptive vocabulary task will be introduced first, after which the analyses of the productive vocabulary task will be presented.

Graph 1. Reading scores

The descriptive statistics of the tests are presented in Table 2 and 3. Since the maximum possible scores of these tests was 10 points, it can be concluded that there were no ceiling effects.

### 4.2.1. Receptive vocabulary test

Two separate T-tests were performed to analyse the difference between the scores of the baseline group and the attriters on the receptive vocabulary task for both languages. For the French test, it was found that the difference between the scores of the controls ( $M= 7.63, SD= 1.802$ ) and the attriters ( $M= 6.84, SD= 1.917$ ) of .793, 95% CI  $[-.377 - 1.831]$  was not statistically significant ( $t(48)=1.452, p=.153$ ). Furthermore, it was observed that the controls also had higher average scores ( $M=3.73, SD=2.328$ ) than the attriters ( $M=2.85, SD=1.347$ ) for the German receptive vocabulary task. Results of t-testing showed that this group difference, .881, 95% CI  $[-.595 - 2.500]$ , was not statistically significant ( $t(35)= 1.452, p= .155$ ). Therefore, it can be concluded that the baseline group did not perform significantly better on the receptive vocabulary test than the attriting group for both French and German.

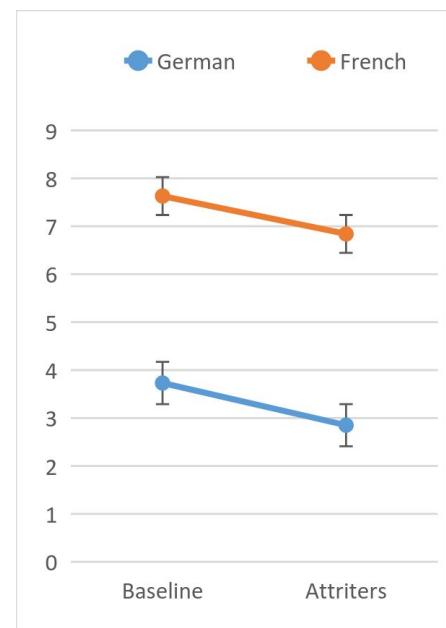
Table 2. Receptive vocabulary scores of the participant groups

	M	SD	N
<b>Baseline</b>			
<i>German</i>	3.73	2.328	11
<i>French</i>	7.63	1.802	19

<b>Attriters</b>	<i>German</i>	2.85	1.347	26
	<i>French</i>	6.84	1.917	31

Moreover, in conducting a two-way ANOVA on the effects of the tested language and the participant group on receptive vocabulary scores, no statistically significant interaction could be found between these variables, whereas the effects of education and language did prove to be significant (see graph 2).

Firstly, a statistically significant effect was found for participant group on receptive vocabulary score,  $F(1,83)=4.048$ ,  $p=.047$ , indicating that the baseline group performed significantly better on the receptive vocabulary test than the attriters. Secondly, the effect of the tested language on scores was significant as well,  $F(1,83)=90.078$ ,  $p<.001$ , which showed that scores on the French receptive vocabulary test were significantly higher than those for the German receptive vocabulary test. Lastly however, results showed that no statistically significant interaction was present between the tested language and participant group,  $F(1,83)=.011$ ,  $p=.916$ . This shows that the attrition that was found in the receptive vocabulary scores of the participant groups was not significantly influenced by the tested language.



Graph 2. Receptive vocabulary scores

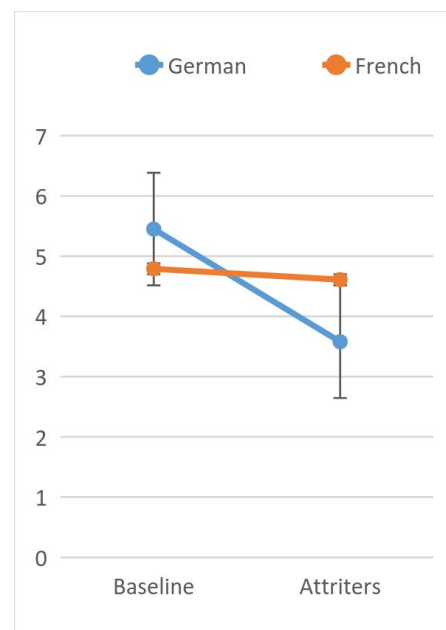
#### 4.2.2. Productive vocabulary test

Even though differences between the performance of baseline group and the attriting group were statistically significant for the German productive vocabulary test, this was not the case for the French productive vocabulary test. In comparing the differences between the scores of the baseline group and the attriters on the French productive vocabulary task, it was observed that the baseline group had a slightly higher average score ( $M=4.79$ ,  $SD=1.475$ ) than the attriters ( $M=4.61$ ,  $SD=1.801$ ) for this task (see Table 3). T-testing showed that this difference of .177, 95% CI [-.811 – 1.165] was not statistically significant  $t(48)=.359$ ,  $p=.721$ . On the other hand, it was observed that the differences between the controls ( $M=5.54$ ,  $SD=1.809$ ) and the attriters ( $M=3.58$ ,  $SD=2.212$ ) was tremendously larger for the German productive vocabulary test. Through use of an independent t-test, it was found that this difference of 1.878, 95% CI [.567– 3.346] was statistically significant,  $t(35)=2.480$ ,  $p=.018$ . Effect size  $d$  was .84, indicating a strong effect. It can be concluded that the baseline group did not perform significantly better than the attriters on the French productive vocabulary test, whereas they did for the German test.

Table 3. productive vocabulary scores of the participant groups

		<b>M</b>	<b>SD</b>	<b>N</b>
<b>Baseline</b>	<i>German</i>	5.45	1.809	11
	<i>French</i>	4.79	1.475	19
<b>Attriters</b>	<i>German</i>	3.58	2.212	26
	<i>French</i>	4.61	1.801	31

In addition, a two-way ANOVA was performed as well, in order to analyse the combined effects of tested language and participant group on the productive vocabulary scores (see graph 3). Results showed that the language that was tested did not have a statistically significant effect on scores,  $F(1,83)=.642$ ,  $p=.670$ , whereas participant group did,  $F(1,83)=19.694$ ,  $p=.020$ . These findings indicate that the baseline group performed significantly better on the productive vocabulary test than the attriting group, but that the difference between overall performance on the French reading test and the German reading test was not statistically significant. Furthermore, in looking at the combined effects of tested language and participant group on productive vocabulary scores, a statistically significant interaction was found,  $F(1,83)=4.065$ ,  $p=.044$ . This demonstrates that the attrition in the productive vocabulary scores of the different participant groups were significantly influenced by the tested language, in that the attriters showed significantly more attrition in German than they did in French, as compared to the baseline group.



Graph 3. Productive vocabulary scores

#### 4.3. C-tests

The analyses of independent t-tests on differences between the baseline group and the attriting group on c-test scores did not yield statistically significant results for German nor for French. Firstly, in comparing the descriptive statistics of the groups (see table 4), it can be seen that the attriting group had higher average scores ( $M=6.42$ ,  $SD=1.770$ ) than the baseline group ( $M=5.82$ ,  $SD=1.079$ ) for the German c-test. Furthermore, since ten points could be obtained in the tests, it can again be concluded that there were no ceiling effects. It was found that this group performance difference of  $-.605$ , 95% CI  $[-1.477 - .345]$  was not statistically significant,  $t(35)= -1.049$ ,  $p= .301$ .

Table 4. C-test scores of the participant groups

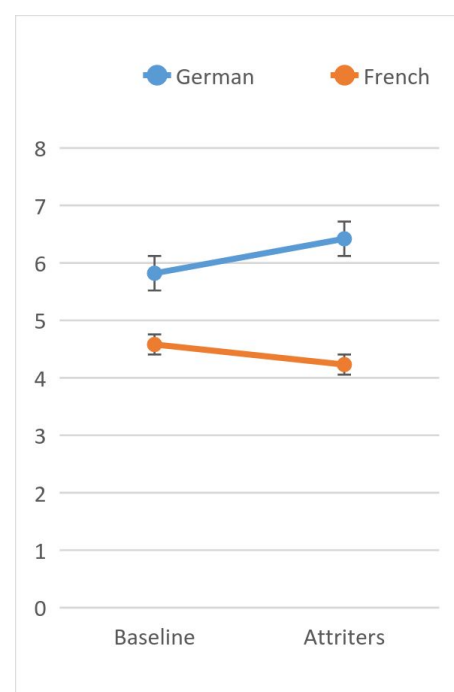
	M	SD	N
Baseline			

	<i>German</i>	5.82	1.079	11
	<i>French</i>	4.58	2.226	19
<b>Attriters</b>	<i>German</i>	6.42	1.770	26
	<i>French</i>	4.23	2.223	31

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However, the controls had a slightly better performance ( $M=4.58$ ,  $SD=2.226$ ) than the attriting students ( $M=4.23$ ,  $SD=2.223$ ) for the French c-test, with a difference of .353, 95% CI [-.918 – 1.624]. Results showed that the differences between these participant groups were not statistically significant,  $t(48)=.559$ ,  $p=.579$ , due to which it can be concluded that the groups did not have significantly different scores on the c-test.

In addition, a two-way ANOVA was conducted to examine the effects of the language of the tested language and participant group on c-test scores. Even though the effect of tested language was statistically significant,  $F(1,83)=14.476$ ,  $p<.001$ , the effect of participant group was not  $F(1,83)=.078$ ,  $p=.781$ . This indicates that the attriters did not perform significantly better on the productive vocabulary test than the controls. However, the difference between overall performance on the French reading test and the German reading test was significant, since both groups showed better performance on the German c-test than on the French c-test. Lastly, results showed that the combined effects of the tested language and participant group on c-test scores was not statistically significant,  $F(1,83)=1.125$ ,  $p=.229$ .



Graph 4. C-test scores

#### 4.4. Task type

In order to provide a further insight into the effect of the different tasks on the test scores, dependent t-tests were performed to analyse the difference between performance on productive and receptive tasks. For these analyses, participants' standardized scores on the reading task and the receptive vocabulary task were combined to create a receptive task score, and standardized scores on the c-test and productive vocabulary task were combined to create a productive task score. First, these scores were compared in dependent samples t-tests, after which the combined effects of the within subjects effect of task type and the between subjects effect of participant group per language were analysed through using a repeated-measures ANOVA.

Dependent samples t-tests were performed to look at the differences between productive and receptive test scores for the German and French proficiency tests. In looking at the performance of the controls on the German tests, it was observed that scores in productive tasks ( $M=11.40$ ,  $SD=2.271$ ) were higher than those in receptive tasks ( $M=5.20$ ,  $SD=2.530$ ). Results of the analysis showed that this difference of 6.20, 95% CI [4.521 – 7.879] was statistically significant,  $t(10)= 8.352$ ,  $p < .001$ . In addition to this, similar results were found for the attriting group, who also performed better on productive tasks than on receptive tasks (see Table 5). Again, the difference between receptive and productive tasks, 5.207, 95% CI [4.240 – 6.173] was found to be statistically significant,  $t(25)=11.036$ ,  $p < .001$ .

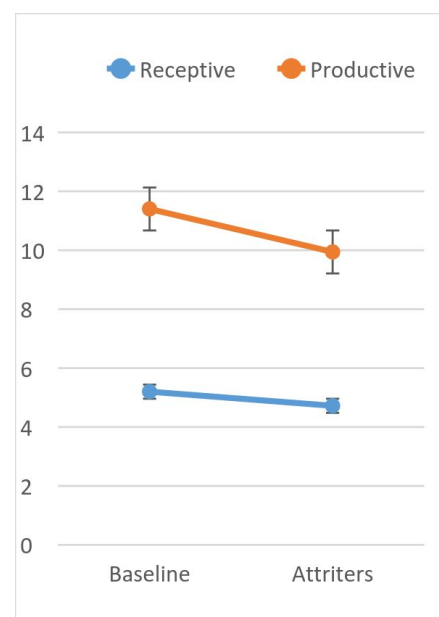
On the other hand, only slight differences between scores in productive tasks and receptive tasks were found for the French proficiency test (see Table 5). Here, it was observed that controls scored higher on receptive tasks ( $M=9.38$ ,  $SD=2.418$ ) than on productive tasks ( $M=9.24$ ,  $SD=3.048$ ), whereas for the attriting group, scores on productive tasks ( $M=8.82$ ,  $SD=3.337$ ) were slightly higher than those on receptive tasks ( $M=8.79$ ,  $SD=2.420$ ). The task type differences for both controls,  $-.143$ , 95% CI [-1.533 – 1.247], and attriters,  $-.036$ , 95% CI [-1.094 – 1.022] were analysed through a dependent samples t-test. No statistically significant results were found for the controls ( $t(18)=-.214$ ,  $p=.832$ ) nor for the attriters. ( $t(30)=-.069$ ,  $p=.945$ ). It can be concluded that score differences between receptive and productive tasks were not statistically significant for the French proficiency test, whereas participants scored significantly higher on the productive tasks than on the receptive tasks for the German proficiency test.

Table 5. Receptive and productive scores of the participant groups

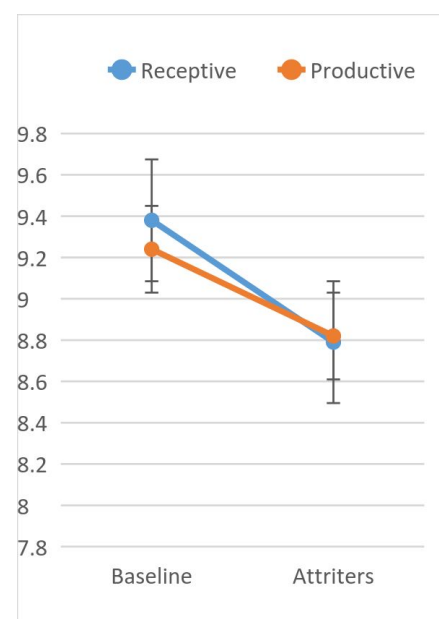
		Receptive		Productive		N
		M	SD	M	SD	
Baseline	German	5.20	2.530	11.40	2.271	11
	French	9.38	2.418	9.24	3.048	19
Attriters	German	4.72	2.130	9.93	2.939	26
	French	8.79	2.420	8.82	3.337	31

Furthermore, repeated measures ANOVAs were run for both the German and French language proficiency test to look at the effect of participant group on the productive and receptive scores. In focusing on the German proficiency test, it was observed that even though the effect of task type on test scores was found to be statistically significant,  $F(1,36)=155.405$ ,  $p<.001$ , results showed that the combined effects of task type and participant group were not statistically significant,  $F(1,36)=1.178$ ,  $p=.285$ . These results indicate that the difference between the scores in the receptive test and those in the productive test scores was not significantly influenced by the participant group (see Graph 5).

In turning to the French test, similar analyses showed that the combined effects of participant group and task type on test scores were not statistically significant,  $F(1,48)=.017$ ,  $p=.898$ . In addition, it was also found that the effect of task type on test scores was not statistically significant,  $F(1,48)=.046$ ,  $p=.830$ , indicating that there was no significant difference between participants' performance on the receptive and productive tasks, which is in line with the results from the dependent t-tests presented above. It can be concluded that for both of the tested languages, participant group did not significantly influence differences between receptive and productive tasks.



**Graph 5. Receptive and productive task scores for the German test**



**Graph 6. Receptive and productive task scores for the French test**



## 4.5 Explorations

Even though the hypotheses of this study primarily focused on analysing the differences between the two participant groups, the tested languages and the tasks that were involved, additional analyses were run to further explore the data. Firstly, correlations were run to look at the relation between the attrition period and test scores, as well as between course grades and tests scores. Secondly, a partial correlation was performed to analyse the relation between attrition period and test scores while controlling for course grade. Lastly, both dependent samples t-tests and repeated-measures ANOVAs were run to examine the difference between cognates and non-cognates in the vocabulary translation tasks, and whether this was influenced by participant group. These results are presented below.

### 4.5.1. Correlations

Firstly, correlations were calculated to determine whether there was a relationship between the different test scores and the period of attrition. For these analyses, participants' reported exam years and foreign language use were used to calculate the amount of years in which participants had barely used the attriting language, also called the period of attrition. Due to small sample sizes and non-normal distributions, Kendall's tau-b correlations were run, which were separated for German and French. Results on the French test showed that correlations for the reading test ( $\tau b = .10, p = .370$ ), receptive vocabulary test ( $\tau b = -.20, p = .072$ ), productive vocabulary test ( $\tau b = -.07, p = .558$ ) and the c-test ( $\tau b = -.01, p = .951$ ) were not statistically significant. Running similar correlations for the German test brought up comparable results, in that correlations for the reading test ( $\tau b = .14, p = .313$ ), receptive vocabulary test ( $\tau b = -.23, p = .085$ ), productive vocabulary test ( $\tau b = -.22, p = .031$ ) and c-test ( $\tau b = .19, p = .157$ ) again were not found to be significant.

Moreover, similar correlations were run to explore the relation between test German and French scores and the participants' course grades. Statistically significant medium to strong positive correlations between German test scores and participants' course grades were found for the receptive ( $\tau b = .39, p = .006$ ) and productive ( $\tau b = .36, p = .009$ ) vocabulary tests, whereas correlations for the reading test ( $\tau b = .20, p = .171$ ) and c-test ( $\tau b = .26, p = .071$ ) were not statistically significant. In looking at the French test, Kendall's tau-b correlations showed medium to strong positive correlations between the obtained proficiency tests scores and course grades, which were statistically significant for the reading

test ( $\tau b = .33, p = .005$ ), receptive vocabulary test ( $\tau b = .26, p = .028$ ), and c-test ( $\tau b = .43, p < .001$ ), yet not for the productive vocabulary test ( $\tau b = .19, p = .114$ ). These results indicate that participants who received higher course grades in secondary school often also scored higher on several of the proficiency tasks that were used in this study.

#### 4.5.2. Partial correlation

Due to the statistically significant correlations that were found between the German and French test scores and course grades, a partial correlation was run to determine the relationship between these test scores and attrition period whilst controlling for course grades. For the German language proficiency tests, results showed that correlations for the reading test ( $r(34) = .18, p = .287$ ) and c-test ( $r(34) = .09, p = .595$ ) were not statistically significant, whereas receptive ( $r(34) = -.38, p = .024$ ) and productive ( $r(34) = -.35, p = .034$ ) vocabulary tests showed medium to strong negative correlations with attrition period, indicating that a longer period of attrition leads to lower receptive and productive vocabulary scores. Moreover, in comparing these results to the non-significant zero-order correlations for the reading test ( $r(35) = .19, p = .249$ ), receptive vocabulary test ( $r(35) = -.20, p = .070$ ), productive vocabulary test ( $r(35) = -.28, p = .091$ ), and c-test ( $r(35) = .11, p = .523$ ), it was observed that course grades had influence in controlling for the relationship between attrition period and obtained test scores, as correlations were stronger and closer to significance.

A similar partial correlation on the relation between test scores and attrition period while controlling for participants' course grades was run for the French test. This time, a significant negative medium to strong correlation was only found for the receptive vocabulary test ( $r(47) = -.32, p = .024$ ), whereas correlations for the reading test ( $r(47) = .04, p = .770$ ), productive vocabulary task ( $r(47) = -.10, p = .485$ ), and c-test ( $r(47) = -.12, p = .412$ ) were not statistically significant. Again, the comparison of these correlations to the non-significant zero-order correlations for the reading test ( $r(48) = .11, p = .465$ ), receptive vocabulary test ( $r(48) = -.25, p = .086$ ), productive vocabulary test ( $r(48) = -.06, p = .702$ ), and c-test ( $r(48) = -.01, p = .931$ ) showed that participants' obtained course grades influenced the relation between the period of attrition and test scores.

#### 4.5.3. Cognateness

Multiple analyses were performed in order to provide a further insight into the differences between performance on cognates and non-cognates in the receptive and productive vocabulary translation tasks. For these analyses, scores on cognates as well as scores on non-cognates were combined for each task to create cognate and non-cognate scores. However, productive and receptive tasks were analysed separately. First, these scores were compared in dependent samples t-tests, after which the combined effects of the within subjects effect of cognateness and the between subjects effect of participant group were analysed per language through the use of a repeated-measures ANOVA.

Dependent samples t-tests were performed to look at the differences between cognate and non-cognate scores for both receptive and productive tasks in the German and French proficiency tests. In looking at the performance of the controls on the receptive French vocabulary tests (see Table 6), it was observed that performance on cognate items ( $M=7.42$ ,  $SD=2.284$ ) was better than performance on non-cognate items ( $M=4.09$ ,  $SD=3.242$ ). It was found that this score difference of 3.33, 95% CI [1.689 – 4.978] was statistically significant,  $t(18)= 4.215$ ,  $p < .001$ . Similarly, attriters also showed higher scores for the receptive vocabulary translation task for French, in that the average scores on cognate items ( $M=8.28$ ,  $SD=2.615$ ) were higher than those on non-cognate items ( $M=5.86$ ,  $SD=2.768$ ). This difference, 2.414, 95% CI [1.021 – 3.807] also proved to be statistically significant,  $t(30)= 3.550$ ,  $p=.001$ .

In addition to this, comparable results were found for the productive vocabulary task, as it was observed that both the baseline group and the attriting group again showed higher average scores for cognate items than for non-cognate items (see Table 6). These score differences were analysed for both the controls, 2.338, 95% CI [1.206 – 3.470] and the attriters, 2.266, 95% CI [1.641 – 2.891] through using dependent t-testing. Results of these analyses showed that differences between scores on cognates and scores on non-cognates were significant for both the baseline group,  $t(18)= 4.294$ ,  $p < .001$ , and the attriting group,  $t(30)= 7.427$ ,  $p < .001$ . These findings indicate that controls and attriters had significantly higher average scores on cognate items than on non-cognate items in the productive and receptive vocabulary translation task of the French proficiency test.

Table 6. Participants' cognate and non-cognate scores on the French proficiency task

		Cognates		Non-cognates		N
		M	SD	M	SD	
<b>Baseline</b>	<i>Receptive</i>	7.42	2.284	4.09	3.242	19
	<i>Productive</i>	7.66	2.093	5.32	1.931	19
<b>Attriters</b>	<i>Receptive</i>	8.28	2.615	5.86	2.768	31
	<i>Productive</i>	6.40	2.493	4.13	2.333	31

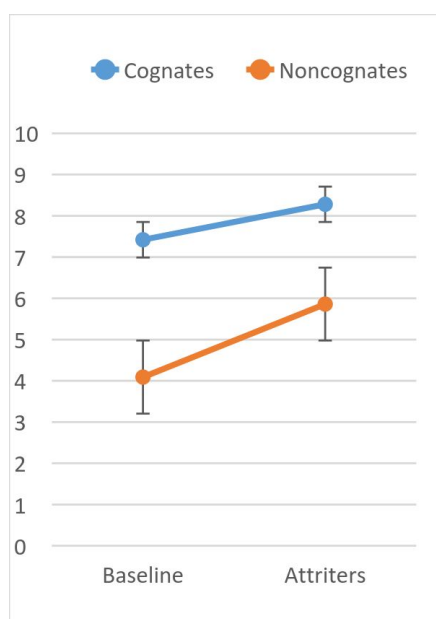
In turning to the cognate scores of the German receptive vocabulary test, presented in Table 7, it was observed that controls scored higher on non-cognate items ( $M=5.83$ ,  $SD=3.450$ ) than on cognate items ( $M=5.00$ ,  $SD=3.086$ ), whereas for the attriting group, scores on cognate items ( $M=5.12$ ,  $SD=2.124$ ) were higher than those on non-cognate items ( $M=4.52$ ,  $SD=3.038$ ). These differences for both controls,  $-.833$ , 95% CI  $[-4.080 - 2.413]$ , and attriters,  $.595$ , 95% CI  $[-.814 - 2.005]$  were analysed through a dependent samples t-test. No statistically significant results were found for the controls ( $t(10)=-.607$ ,  $p=.563$ ) nor for the attriters. ( $t(25)=.867$ ,  $p=.394$ ). For the productive vocabulary task, on the other hand, it can be seen that for both attriters and controls, non-cognate scores were higher than cognate scores (see Table 7). Dependent t-testing showed that for the controls, this difference of  $-2.679$ , 95% CI  $[-4.298 - -1.059]$  was statistically significant,  $t(10)=-3.910$ ,  $p=.006$ , which also proved to be the case for the cognate score difference,  $-1.378$ , 95% CI  $[-2.223 - -.532]$  of the attriting group,  $t(25)=.867$ ,  $p=.394$ .

Table 7. Participants' cognate and non-cognate scores on the German proficiency task

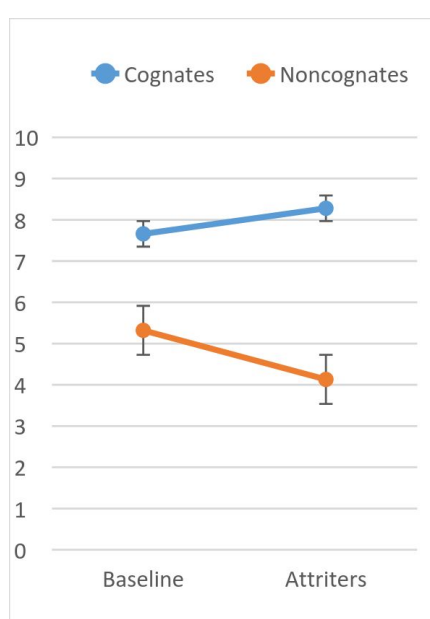
		Cognates		Non-cognates		N
		M	SD	M	SD	
<b>Baseline</b>	<i>Receptive</i>	5.00	3.086	5.83	3.450	11
	<i>Productive</i>	1.96	1.515	4.64	1.984	11
<b>Attriters</b>	<i>Receptive</i>	5.12	2.124	4.52	3.038	26
	<i>Productive</i>	1.84	1.394	3.21	2.220	26

Furthermore, multiple repeated measures ANOVAs were run for both the German and French language proficiency test to look at the effect of participant group on the test scores for cognate and non-cognate items. In focusing on the French proficiency test, it was found that the individual effect of cognateness on test scores was found to be statistically significant for both the receptive  $F(1,48)=30.475$ ,  $p<.001$ , and productive,  $F(1,48)=61.136$ ,  $p<.001$  vocabulary translation task. However, results showed that the combined effects of task type and participant group were not statistically significant, which was the case for receptive vocabulary translation task,  $F(1,48)=.780$ ,  $p=.381$ , and the productive vocabulary translation task,  $F(1,48)=.015$ ,  $p=.904$  (see graphs 7 & 8).

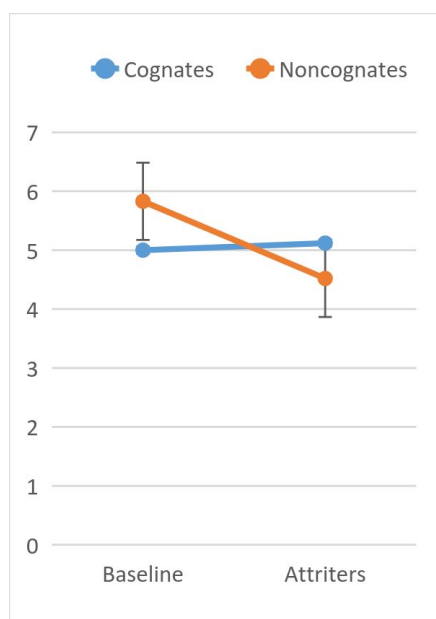
In turning to the German test, similar analyses showed that the combined effects of participant group and cognateness on test scores were not statistically significant for the receptive,  $F(1,36)=.934$ ,  $p=.341$ , and productive tasks  $F(1,36)=2.314$ ,  $p=.137$  (see graphs 9 & 10). Furthermore, it was also found that the effect of cognateness was not significant for the receptive vocabulary task,  $F(1,36)=.026$ ,  $p=.833$ , whereas the productive vocabulary task did show statistically significant differences between cognates and non-cognates,  $F(1,36)=22.288$ ,  $p<.001$ , which is in line with the results from the dependent t-tests presented above. It can be concluded that for both of the tested languages, participant group did not significantly influence differences between cognate items and non-cognate items.



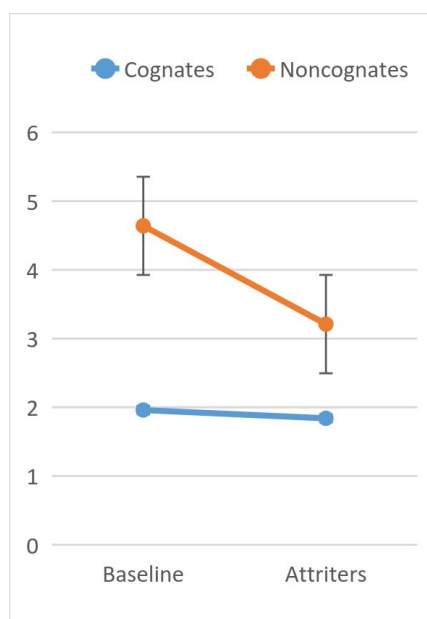
Graph 7. Cognate and non-cognate scores for the receptive French test



Graph 8. Cognate and non-cognate scores for the productive French test



Graph 9. Cognate and non-cognate scores for the receptive German test



Graph 10. Cognate and non-cognate scores for the productive German test

#### 4.6. Summary of results

Various analyses were performed in this study to examine the difference between participant groups, tested languages, and the different task types, as well as the relations between these different variables. In this section, preliminary conclusions will be presented which summarize the results of these tests.

Firstly, in separating the scores for German and French, independent samples t-tests were run to analyse differences in the performance between the baseline group and the attriting group. Results showed that score differences were only statistically significant for the German productive vocabulary test, as it was found that attriters had a significantly lower average score on this task than the baseline group. On the other hand, the receptive vocabulary task, reading task and c-test did not show significant differences between the baseline group and the attriting group.

Secondly, multiple two-way ANOVAs were performed to research the effects of participant group and the language that was tested on the different test scores. A significant interaction between these variables was only found for the productive vocabulary task, showing that the test scores were significantly influenced by both participant group and language. This implicated that the attrition that was found in the productive vocabulary scores of the different participant groups was significantly influenced by the tested language, in that the attriters showed significantly more attrition in German than they did in

French, as compared to the baseline group. In addition, in exploring the individual effects of participant group and tested language, it was also found that language had a statistically significant effect on test scores for both the receptive vocabulary test and the c-test, and that education had a statistically significant effect on test scores for the receptive and productive vocabulary test.

Thirdly, the difference between scores on receptive and productive tasks was analysed as well. Dependent samples t-tests showed that scores for German productive tasks were significantly higher than scores for German receptive tasks for both attriters and controls, whereas no significant differences were found for the French proficiency test. In addition to this, an repeated measures ANOVA was run for both of the languages to analyse the combined effects of the within subjects effect of task type and the between subjects effect of participant group. Although the effect of task type was again significant for the German proficiency test, no significant interactions were found. These results indicate that the difference between the receptive and productive test scores was not significantly influenced by the participant group.

Lastly, in further exploring the data, correlations were run to observe the effect of attrition period and grade on obtained scores. Kendall's tau-b correlations showed no statistically significant correlations between the period of attrition and obtained test scores for the different French and German proficiency tasks. However, in looking at the relations between participants' course grades and obtained test scores, results showed several medium to strong positive correlations. For the German proficiency test, statistically significant correlations were found for the receptive and productive vocabulary translation tasks, and for the French proficiency test, these were found for the receptive vocabulary task, reading task and c-test. Due to the significant relation between the obtained course grades and test scores, partial correlations were run to examine the relationship between the period of attrition and test scores while controlling for course grade. This time, results showed medium to strong negative correlations between attrition period and test scores for both the German receptive and productive vocabulary test as well as for the French receptive vocabulary test. Participants' reported course grades were found to be influential in controlling for the relationship between attrition period and obtained test scores.

## **5. Discussion**

The main purpose of this study was to examine the influence of linguistic distance on foreign language attrition in German and French among the receptive and productive skills of Dutch learners. In this section, results of the study will be discussed in light of the theory and earlier findings reviewed in the background section. The discussion will be presented in the same order as the research questions in section 2.4. Thus, the difference between the controls and attriters will be considered first, after which the effect of the languages that were tested as well as the influence of the different task types will be addressed.

### **5.1. Differences between controls and attriters**

Two participant groups were compared across the four foreign language proficiency tasks that were used in this study. The baseline or control group consisted of secondary school pupils who received approximately 5 to 6 years of almost continuous foreign language instruction in German and French prior to taking part in this study. Even though the attriting group received a comparable foreign language education, they finished their secondary school a few years ago and reported to have barely used their German and French since their foreign language instruction ended.

Results of independent t-tests on the proficiency tests for German and French across the four tasks showed that score differences between the participant groups were only statistically significant for the German productive vocabulary test, as it was found that attriters had a significantly lower average score on this task than the controls. In addition, although score differences between the groups for the other tasks were not found to be significant, an ANOVA showed that controls had significantly higher average scores for both the receptive and productive vocabulary task when the German and French tests were taken together. On the other hand, it should be noted that there was an unexpected tendency for higher average scores for attriters than for controls on both the reading task and the c-test. However, this finding did not prove to be statistically significant.

Previous research that was presented in the background of this paper has shown that foreign language attrition is a complex phenomenon which is influenced by a number of factors. Since multiple factors might have influenced the results presented above, some of these, such as length of the attrition period and the influence of proficiency level, will be discussed in the following subsections.



### 5.1.1. Influence of length of the attrition period

One of the factors that may have played a role in the fact that attrition has only been found in the vocabulary translation tasks is the length of the attrition period. Even though previous studies that investigated the length of the attrition period have found contradicting results regarding the moment when foreign language attrition sets in, it has been generally accepted that FL attrition sets in rapidly during the first years of non-use, and levels off in the following years (Mehotcheva, 2010; Schmid & Mehotcheva, 2012). A study by Bahrack (1984), for example, showed that foreign language attrition occurs most between three and six years of non-use, after which language skills remain remarkably stable. The average attrition period of the attriting group in this study was just over four years ( $M=4.19$ ,  $SD=1.542$ ), which falls within the three to six year attrition period that was identified by Bahrack (1984). However, it should be noted that not all participants fell within this range, as the period of non-use among the participants ranged from one to seven years. The fact that 10 of the 57, or 11.4% of the attriting participants were thus attriting for a shorter amount of time may have led to smaller differences between the groups.

Moreover, in running correlations to analyse the relation between the period of attrition and the obtained test scores, no statistically significant results were found. In order to investigate whether the shorter attrition period among a portion of the participants may have had an effect on the results of the present study, it was decided to analyse the relation between the obtained test scores and length of the attrition period for the various tasks that were used to measure German and French proficiency. In this study, the 1-7 year attrition range of the participants meant that a large part of the participants fell within the 3 to 6 year attrition period where Bahrack (1984) predicted the most attrition to occur, whereas a smaller part of the participants may not have attrited to a larger extent yet because they did not fall within this range. Therefore, it was expected that participants with a longer attrition period would have lower scores on the foreign language proficiency tests, as this would demonstrate a larger degree of FL attrition. However, no statistically significant correlations were found between the length of the attrition period and the scores of the different proficiency tasks, which indicated that participants with longer periods of attrition do not necessarily experience larger degrees of FL attrition.

Since other studies also could not find a relation between the length of the attrition period and the degree of attrition, the effects of attained proficiency on this relation were analysed. In the interpretation of the results of the aforementioned correlations, it is important to note that previous studies by Mehotcheva (2010), Murtagh (2003) and Taura (2008) also failed to find a relation between the amount of attrition and length of attrition. These findings have led Mehotcheva (2010) to argue that “disuse alone is not sufficient for attrition to take place. It might be the case that in combination with other factors [length of attrition] becomes an important factor, which contributes to the attrition of linguistic competence” (p. 152). One of the factors that might influence the relation between the degree of attrition and period of attrition is the attained proficiency before the onset of attrition, as multiple studies have found this to be the most important predictor of attrition (Bahrick, 1984; Mehotcheva, 2010; Schmid and Mehotcheva, 2012; Xu, 2010). In further explorations that are discussed in the following section (5.1.2.), correlations between attained proficiency and test scores were run. The results of these analyses led to the decision to perform a partial correlation on the relation between the period of attrition and test scores while controlling for attained proficiency. Interestingly, results showed medium to strong negative correlations between attrition period and test scores for both the German receptive and productive vocabulary test as well as for the French receptive vocabulary test, which demonstrates that attained proficiency may have influenced the relation between the amount of attrition and length of the attrition period. However, since the c-test and reading test did not yield significant results, this could also indicate that these skills might be less susceptible to attrition.

Furthermore, differences between the vocabulary translation task on the one hand and the reading task and c-test on the other hand could also be caused by the relatively short attrition period of the participants, as some linguistic knowledge may attrite earlier and faster than other knowledge. According to Bahrick (1984), there is a discontinuous lifespan distribution of the learned information, in that a fixed amount of knowledge is lost in the first three to six years, no knowledge is lost between 6 and 25 years of non-use, and other parts are lost after over 25 years of non-use. This latter type of knowledge was named ‘permastore-content’. In turning to the results of this study, it could be argued that the skills tested in the reading test and c-test belong to the more entrenched permastore-content, whereas part of the vocabulary knowledge is lost within the first three to six years of

non-use. In this case, the period of attrition tested in this study would not have significant effects on the differences between participants for the reading test and c-test, as the skills tested in these tasks would attrite after 25 years of non-use. Research by Tomiyama (1999) and Herdina and Jessner (2002) lends support to this claim as well, as they not only found that foreign language attrition is selective, but also discovered that the lexicon is more prone to attrition than morphology, syntax and phonology (Wei, 2014).

#### 5.1.2. Influence of attained proficiency

Another important factor that possibly influenced the amount of attrition that was found in this study is the attained proficiency level of the participants. Attained proficiency is considered especially important for research in foreign language attrition, since the language proficiency at the onset of attrition is often more varied for FL attriters than for L1 attriters. In addition to this, previous studies have found that both higher course grades (Bahrick, 1984) and an higher initial language proficiency (Mehotcheva, 2010; Murtagh, 2003; Weltens, 1989; Xu, 2010) are associated with better foreign language retention. Therefore, it could be the case that the proficiency that was attained by the participants before the onset of attrition may have led to the found test scores differences between the participant groups. In order to explore the possible relation between the obtained test scores and the proficiency at the onset of attrition among the attriting participants in this study, correlations between test scores and reported the course grades were run. Results showed medium to strong positive correlations for several tasks. For the German proficiency test, statistically significant correlations were found for the receptive and productive vocabulary translation tasks, and for the French proficiency test these were found for the receptive vocabulary task, reading task and c-test. Since these results indicate that participants with higher course grades often also scored higher on the different proficiency tasks, it can be concluded that attained proficiency influences foreign language attrition in this study. In addition to this, partial correlations that analysed the relation between attrition period and test scores while controlling for course grades also yielded significant results (section 5.1.1.). Therefore, it can be argued that attained proficiency not only affected the amount of attrition as measured by the different FL proficiency tests, but also influenced the relation between the amount of attrition and length of the attrition period.

Furthermore, the high proficiency levels of the participants could also cause less susceptibility to the effects of foreign language attrition. Previous studies have noted that languages that are mastered to a certain extent may be relatively immune to the effects of attrition, as there might be a certain proficiency threshold after which attrition barely occurs (Bahrick, 1984; Mehotcheva, 2010; Neisser, 1984). In this study, the participants' proficiency can be argued to be relatively high, as they completed the educational level where the highest levels of foreign language proficiency are reached in the Netherlands. A study by Feskens, Keuning, van Til, and Verheyen (2014) that investigated the foreign language proficiency levels in Dutch secondary school showed that French proficiency levels are around B1 for productive skills and B2 for receptive skills, and that for German, these levels are around B1 to B2 for receptive skills and B2 to C1 for receptive skills. Even though the required proficiency level at which language skills are immune to attrition has not been found, this could be another explanation for the relatively small amount of attrition that was found in this study, as the relatively high FL proficiency could cause a lower susceptibility to the effects of foreign language attrition. This is also supported by the above mentioned correlations on the relation between participants' reported course grades and the attrition tests as well, since these results demonstrate that both attriters and controls who reported higher course grades often also scored higher on the different proficiency tasks. Moreover, these results are in line with findings by Weltens (1989), who also studied the attrition of French amongst Dutch secondary school participants, and found remarkably little attrition in the tested receptive skills. It was argued that "it may well be that our subjects had indeed reached such a level of mastery of French, making their French language skills relatively immune against forgetting" (p. 137).

Lastly, participants' attained proficiency could play a role at item level as well, in that the degree to which linguistic structures are learned could influence the degree of attrition. In research by Moorcroft and Gardner (1987) on foreign language attrition, grammatical losses were examined in more detail in order to find out what was lost. Results showed that "a thoroughly learned structure is relatively immune to language loss" (p. 339). This is in line with findings on the proficiency threshold presented in the paragraph above, as there again seems to be a proficiency level that prevents foreign language attrition. The self-reported attrition differences in Gardner, Lalonde & Macpherson (1985) confirmed this finding, in that no significant loss was reported in over-learned skills. Interestingly, attriters also reported

little differences in skills in which they had a very low proficiency, yet displayed most attrition in skills that were learned to an average degree. Even though these findings cannot be confirmed in the present study due to insufficient knowledge on the degree to which the different skills are learned as well as a lack of detail in the tasks that were performed, further research should look into the effect of attained proficiency on item level.

### 5.1.3. Influence of other factors

Even though most results could be explained through the effects of the length of the attrition period and attained proficiency at the onset of attrition, group differences for the c-test and reading task remain unaccounted for, which is where cognitive maturation, further academic training and language experience should be taken into account. Despite the lack of statistical significance, it should be noted that there was an unexpected tendency for higher average scores for attriters than for controls on both the reading task and the c-test. Similar results were found in studies by Weltens and van Els (1986) and Weltens (1989), where respectively performance on the multiple choice cloze-test and reading and listening skills were found to have improved over time. Since these tests especially showed improvement for subjects who had continued learning other foreign languages, Weltens, van Els and Schils (1989) later suggested that “factors as general cognitive maturation, further academic training, and continued learning of other foreign languages have to be considered as potential explanations for this increase” (p. 214). These factors are relevant to the present study as well, since baseline subjects were between 16 and 19 years old ( $M=17.6$ ,  $SD=.861$ ), whereas attriting subjects were between 18 and 25 years of age ( $M=21.9$ ,  $SD=1.599$ ), which could have led to differences in cognitive maturity. In addition to this, it should be taken into account that all participants of the attriting group have received further academic training, and that almost half of the attriting participants (25/57) continued to study English Language and Culture at university level, which could have influenced their test results as well.

Additionally, due to the effects of crosslinguistic influence (CLI) in using language, factors such as age and perceived linguistic distance, which determine transferability, should also be taken into account. An increasing amount of research has shown that bilinguals constantly access both of their languages, even when the use of language is not necessary (Dijkstra, 2005). This co-activation of languages has been found to take place in many aspects of language use, including both receptive and productive tasks (Kroll & Tokowicz,

2005; Starreveld, De Groot, Rossmark & van Hell, 2014). Since all languages are thus always activated, it should be taken into account that CLI, or “the influence of a person’s knowledge of one language on that person’s knowledge or use of another language” can influence language use and development (Jarvis and Pavlenko, 2008, p. 1). Moreover, as a study by Bergmann, Sprenger and Schmid (2015) has shown that the speech of L1 attriters reflects CLI from the co-activated L2, it can be argued that in the present study, influence from the L1 may be expected on participants’ performance in the FL tasks. Therefore, factors that may influence whether crosslinguistic transfer takes place should be taken into account.

According to Jarvis and Pavlenko (2008) such factors influencing transferability include participants’ age, perceived linguistic distance between the different languages, and the perceived importance of the specific language structures to the used language. In addition, individual differences between participants such as language anxiety and aptitude have also been found to play a role (Odlin, 1989). Even though this study was not designed to provide information on these factors, it can be noted that the age of the attriting participants ( $M=21.9$ ,  $SD=1.599$ ) was higher than the age of the controls ( $M=17.6$ ,  $SD=.861$ ). This difference could influence transferability, since Cenoz (2001) found that older children have a sharpened perception of linguistic distance, through which they are better at deciding which of the languages they know is most useful for language transfer in various situations. Therefore, attriters may make better use of the languages they know in completing the proficiency tasks in this study due to an enhanced sense of linguistic distance.

Moreover, factors such as task type and reliability should also be considered. Another finding that remains unaddressed is the fact that although ANOVAS showed significant differences between the participant groups for both the receptive and productive vocabulary translations tasks when languages were taken together, independent t-testing only yielded statistically significant results for the German productive vocabulary task. In looking at these results, the effects of both task type and reliability should be taken into account. Firstly, previous research has found that task type has a significant effect on test scores in general, in that tasks that test receptive skills have higher retention scores than tasks that test productive skills (Bahrick, 1984; Cohen, 1989; Murtagh, 2003). The easier retention of receptive items has been confirmed for the lexical domain as well, since Webb (2008) found that receptive word knowledge is easier to acquire and retain than productive word knowledge. These findings might explain why significant group differences were only found

for a productive vocabulary task, since these are harder to retain than receptive items, and would be in line with research by Weltens (1989) as well, who could not find a significant amount of attrition in testing receptive skills, while the attriters reported to experience considerable lexical loss. However, the difference between productive and receptive tasks in this study will be further discussed in section 5.3, where the effects of task type are addressed.

The last factor that should be taken into account in looking at the findings of the independent t-tests is the reliability of the different tasks. Although the paragraph above explains why differences were found in productive rather than receptive tasks, it remains unclear why results were only significant for the German productive vocabulary translation task, and not for the French productive vocabulary translation task. Differences between German and French in general will be discussed in section 5.2. However, it should be noted here that the German vocabulary test showed better reliability on the productive items ( $\alpha = .67$ ) than French ( $\alpha = .39$ ). It could therefore be the case that attrition also occurred in the French productive items, but that the task that was used in this study to measure the attrition of French productive vocabulary was not suited to demonstrate the difference between the groups.

## **5.2. Differences between German and French**

Multiple two-way ANOVAs were performed to compare the performance of the controls and attriters across the different tasks for the German and French foreign language proficiency test. Again, the scores of the reading task, receptive and productive vocabulary translation tasks and c-test were all analysed separately, yet for each of these tasks, the scores for the French and German proficiency test were analysed together to see whether participant group and the tested language had an interaction effect on the test scores.

Results showed that there was a statistically significant interaction between these variables for the productive vocabulary translation task, whereas no significant interaction could be found for the reading task, receptive vocabulary translation task and c-test. This finding implicated that the attrition that was found in the productive vocabulary scores of the different participant groups was significantly influenced by the tested language. In addition to this, graph 3 in section 4.2.2. demonstrated that the attriters showed significantly more attrition in German than they did in French, as compared to the baseline

group. This finding was also confirmed by the t-tests mentioned above, as significant differences between the groups in performing the productive vocabulary translation task were found for the German proficiency test, yet not for the French proficiency test. Furthermore, in exploring the individual effects of participant group and tested language on the test scores, it was also found that the tested language had a statistically significant effect on test scores for both the receptive vocabulary test and the c-test.

In the following subsections, the findings presented above will be discussed in light of the linguistic features hypothesis that was posed by Andersen (1982), through which the effects of factors such as linguistic distance will be discussed. In addition to this, the influence of design of the different proficiency tests will be considered as well.

#### 5.2.1. Influence of linguistic distance

In turning to the differences between French and German, it should be taken into account that previous research has not reached consensus regarding the effects of typological proximity on attrition. In applying Andersen's (1982) linguistic feature hypothesis to the effects of linguistic distance on attrition, it was expected that French would show more attrition than German. This was mainly because the hypothesis poses that linguistic features that are similar in the L1 and the L2/FL are less susceptible to attrition than features that are different, and because van der Slik (2010) reported that German is typologically closer to Dutch than French. However, results of the present study showed that there were statistically significant differences between the attriters and controls for the German productive vocabulary translation task, whereas the French productive vocabulary translation task did not show significant differences, which indicated that attriters showed significantly more attrition in German than they did in French. At this point, it should be noted that the existing literature on the effects of linguistic distance in attrition has not reached general agreement. In one branch of studies, it is argued that typologically closer languages might be more resistant to language attrition than languages that are more distant (Andersen, 1982; Romaine, 1995). On the other hand, however, work by Altenberg (1991), Clyne (1992), Isurin and McDonald (2001) and Saville-Troike, Pan and Dutkova-Cope (1995) argues that not the more distant, but the typologically closer languages lead to more attrition due to a greater susceptibility to conflict, discrimination problems and interference.



Since the results of the present study support the second stance, it can be argued that similarities rather than differences between languages may have led to language attrition in this study. The first stance entails that typologically closer languages are less susceptible to attrition. However, results of the present study do not confirm this theory, since the receptive vocabulary translation task did not show attrition differences between German and French among the Dutch attriters, and the receptive vocabulary translation task had significantly larger amounts of attrition for German than for French, while German is typologically closer to Dutch (van der Slik, 2010). Moreover, research in the field of language transfer has found that language differences do not necessarily hinder language development. According to Jarvis and Pavlenko (2008), “differences between the source and recipient languages do not necessarily lead to learning difficulties or to [language transfer]” (p. 11). This would entail that languages with a larger linguistic distance do not have to be harder to acquire and retain, which is a possible explanation for the lack of attrition differences in the receptive vocabulary translation task. Furthermore, the second stance presented entails that not the more distant, but the typologically closer languages could have a negative influence on attrition due to a greater susceptibility to conflict, discrimination problems and interference. In applying these results to the present study, it may be argued that language similarities caused easier blending and attrition of the languages rather than better retention, which would explain why more attrition was found for the German productive vocabulary translation task than for the French productive vocabulary translation task.

Lastly, it might also be the case that the influence of linguistic distance varies across the different linguistic components, in which only the linguistic levels that are most susceptible to attrition are affected. In their foreign language attrition overview, Schmid and Mehotcheva (2012) have suggested that “it is, of course, possible that there may be a different role of typological proximity across different linguistic levels” (p. 16). Although such a theory would explain the contradicting results of work on the effect of linguistic distance on attrition that were presented in the previous paragraphs, evidence of such a variable effect of linguistic distance on attrition has not been found. Despite the lack of evidence for positive effects of typologically closer languages in the present study, it can be argued that linguistic distance only has an effect on lexical knowledge due to its larger susceptibility to attrition. Moreover, the exclusive effect of linguistic distance in case of attrition is also

supported by differences between receptive and productive vocabulary tasks in this study. Analysis showed that the combined effects of tested language and participant group were only significant for the productive vocabulary task, since the German productive vocabulary task had significant degrees of attrition. These results are in line with studies that showed that productive skills are more susceptible to attrition than receptive skills (Bahrick, 1984; Murtagh, 2003; Webb, 2008), and suggest that the retention of more distant languages is facilitated for the linguistic components which are most susceptible to attrition.

### 5.2.2. Influence of test design

Another explanation for the unexpected findings regarding the effect of linguistic distance on attrition in this study could be that the test design was not suitable to demonstrate such effects. As mentioned above, it was found that the results of the present study do not support Andersen's (1982) Linguistic Feature Hypothesis. In accounting for these results, it should be noted that in the design of most of the materials used in this study, no specific attention was paid to whether the materials for the German in fact also contained a substantially larger amount of features that resemble Dutch than the materials that were used for French. Therefore, it is possible that the facilitating effect of typologically closer languages in acquiring and retaining linguistic knowledge was present in this study, yet has not been detected due to the unsuitability of the proficiency tasks.

However, the facilitating effect of similarities between the L1 and FL in this study has been shown through the effect of cognateness in the vocabulary translation tasks. In designing the productive and receptive vocabulary translation tasks of the French and German proficiency test, three cognate items and seven non-cognate items were included per task so that the effect of linguistic similarity could be measured. In comparing the standardized scores of these items, it was found that both controls and attriters had significantly higher vocabulary translation scores on cognate items than on non-cognate items for the receptive and productive French vocabulary tests, as well as for the German productive vocabulary test. The combined effects of cognateness and participant group were not found to be statistically significant, which could be caused by the fact that the items were not completely similar on aspects such as word length. However, these results demonstrate that cognateness facilitates performance on the vocabulary translation tasks, and imply that cognates are easier to retain as well. This is in line with research by Willer and

Ohashi (2012), who found that cognateness and word length are the most important predictors for word difficulty, and by Weltens (1989), whose results showed that cognates are easier to acquire and retain than non-cognates. These results support the idea that advantages due to linguistic similarities may be present, yet generally not adequately measured in this study.

Furthermore, it should be taken into account that the French and German proficiency test might not be entirely comparable. Even though directly comparing the German and French proficiency tests was avoided in most analyses, there were cases where comparison was necessary in order to look at the combined effect of the tested language and the participant groups. Although the tests were designed to have similar difficulty, it is important to note here that these proficiency tests might not be completely comparable, which results from the use of authentic materials as well as the use of different words for the vocabulary tests (see section 6.1). These differences were found to affect task reliability as well, as it was, for example, found that the c-test had a better reliability for French ( $\alpha = .71$ ) than for German ( $\alpha = .14$ ). Therefore, it was decided that the effect of the tested language on test scores could not be interpreted as being due to differences in the proficiency of the participants, yet could likely be caused by the test design.

### **5.3. Differences between receptive and productive tasks**

Both receptive and productive tasks were included in the measurement of foreign language attrition so that the language loss across these different task types could be compared. For these analyses, participants' standardized scores on the different tasks were combined to create a receptive and a productive task score. Results showed that scores for German productive tasks were significantly higher than scores for German receptive tasks for both attriters and controls, whereas no significant differences between these tasks were found for the French proficiency test. Even though the scores of the German productive tasks were thus higher, the found attrition was only present in one of these productive tasks, namely in the productive vocabulary translation task (section 5.1). Furthermore it was also found that the effect of task type was again statistically significant for the German proficiency test, yet not for the French proficiency test. However, no significant interactions between task type and participant group were found, which indicates that the difference between the receptive and productive test scores was not significantly influenced by the participant group.

The statistically significant differences between the productive and receptive tasks of the German proficiency test as well as the lack of these differences between the receptive and productive tasks of the French proficiency test will be further discussed in the following subsections. Here, multiple factors that are related to the design of the different proficiency tests that could have influenced these results will be discussed, including the order of presentation of these tasks, timing issues and the reduced comparability between the productive and receptive tasks.

### 5.3.1. Influence of test design

The first aspect of test design that could have facilitated the higher scores for productive tasks over receptive tasks on the German proficiency test includes the order in which the different tasks were presented. In looking at previous research on the difference between productive and receptive skills in foreign language development, it can be seen that receptive skills have been consistently found to be acquired earlier than productive skills, due to which they are expected to be easier to retain as well (Murtagh, 2003). Even though more research is needed, this theory has been confirmed in studies by Ammerlaan (1996), Bahrck (1984) and de Bot and Stoessel (2000), who showed that receptive skills are less susceptible to attrition than productive skills. In the present study, however, no statistically significant differences were found between the receptive and productive tasks of the French proficiency test, and for the German test, scores on receptive tasks were significantly lower than scores for productive tasks. Although the combined effects of task type and participant group were not significant, due to which there is no evidence that there is indeed less attrition in productive tasks as well, it should be noted that the lower scores for receptive tasks among the controls and attriters are remarkable, as receptive skills are considered easier to acquire and are prioritized in Dutch secondary school education (Fasoglio, de Jong, Pennewaard, Trimbos & Tuin, 2015) due to which training effects can occur (see next paragraph). In further examining these unexpected scores, two factors that could have facilitated participants' performance on the productive tasks should be taken into account. Firstly, in looking at the order of presentation of the different tests it should be considered that although the sequence of the different languages was randomized for participants who completed the study for both French and German, the order in which the different tasks of the tests were presented was not randomized. Thus, participants always completed the

reading task and receptive vocabulary task before moving on to the productive vocabulary task and c-test. Research by Bock, Dell, Chang and Onishi (2007) has demonstrated that priming in receptive tasks facilitates scores on productive tasks, which is one of the many studies “underscoring the power of priming as an implicit learning mechanism” (p. 438). Therefore, it could be the case that scores on productive tasks were increased due to the effects of priming during the receptive tasks.

Another element that could have had an effect on this study is the reduced comparability of the c-test and reading task. In the analyses of the influence of task type on the participants’ test scores, the reading task and receptive vocabulary translation task were compared to the c-test and productive vocabulary translation task. It can be argued that despite the fact that different words were included in these tasks, the receptive and productive translation task are indeed relatively comparable since all words used in these wordlists often occur in final secondary school exams and participants are asked to perform similar actions. However, the c-test and reading task might be less comparable because of three reasons. Firstly, it should be noted that both the use of authentic materials for the c-tests and the adaption of texts from the standardized CITO tests caused differences between the c-tests and reading tests of the two tested languages. Secondly, another influential factor might be the fact that the reading task measures participants’ performance on one specific skill, whereas the c-test is considered to be a general measure of language proficiency (Grotjahn & Stemmer, 1985). Thirdly, it should be taken into account that receptive skills such as reading and listening are prioritized over other skills in the Dutch education system, in which especially the standardized reading tests are often practised because the national final exams use these tests as well (Fasoglio, de Jong, Pennewaard, Trimbo & Tuin, 2015). Therefore, a phenomenon that resembles training effects on these tests emerges that could have influenced the results, since participants are experienced in performing reading tests such as the ones used in these study, whereas the c-test is relatively new to them. Importantly, it should thus be noted that the direct comparison of these different tasks in the analyses includes comparing tasks which are less related to each other, thereby causing a diminished comparability that may have affected the results that were presented above.

Comparing the participants’ scores on the different vocabulary translation tasks supports the idea that the c-test and reading task might be less comparable, as significant

differences between the controls and attriters were found for the German productive vocabulary translation task. The fact that attrition was only found for a productive task not only supports earlier findings on the attrition in receptive and productive tasks presented in the previous paragraphs (Ammerlaan, 1996; Bahrick, 1984; de Bot and Stoessel, 2000), but also shows that the c-test and reading task might be less suitable for attrition research. Furthermore, in turning to the receptive tasks, it should be noted that the issues with timing in this study may have affected the lack of significant differences. Even though a timer was installed on the pages of the proficiency tests so that the next page would automatically be shown after a fixed amount of time, some of the participants' found out that the timer did not work properly, causing them to be able to exceed the time limit without being directed to the next page. Since according to Weltens (1989), no attrition was found in the receptive skills that were tested in his research because participants' had generous amounts of time to remember their forgotten language, these timing issues could have caused a similar situation in the present study as well, in which the fact that attriters might not be able to retrieve the correct information as quickly is not detected. Therefore, these timing issues could have influenced the amount of attrition found in this study.

## 6. Conclusions

To conclude this paper on the influence of linguistic distance on foreign language attrition in the receptive and productive language skills of Dutch students, primary findings of the study will be summarized first, through which the research questions will be addressed. Then, research implications will be identified, limitations of the study will be pinpointed and possible areas and means for future explorations will be discussed.

### 6.1. The study

The present study was conducted to answer the following main research question: “Does linguistic distance influence the receptive and productive foreign language attrition of German and French among Dutch students?”. In investigating this issue, the following three sub questions were addressed:

1. Are there differences between the control group and the attriting group that point to foreign language attrition?
2. Are there differences between the attrition of French and that of German?
3. Do receptive tasks show a different degree of attrition than productive tasks?

In answering the first sub question regarding the differences between the attriters and controls, there are three main findings which should be considered. Firstly, it was found that attriters had a significantly lower average score on the German productive vocabulary test than the controls, indicating that foreign language attrition was only present in this task. Secondly, however, an ANOVA showed that controls had significantly higher average scores for the receptive as well as the productive vocabulary task when the German and French tests were taken together, indicating that foreign language attrition was present in both of the vocabulary translations tasks. Lastly, it should also be noted that there was an unexpected tendency for higher average scores for attriters than for controls for both the reading task and the c-test. However, this finding did not prove to be statistically significant. These results thus indicated that attrition was only present in the vocabulary translation tasks, in which especially the productive task for the German test yielded significant results, whereas performance on the c-test and reading task was higher, albeit insignificantly, for attriters than for controls. In discussing these results, it was suggested that especially participants’ attrition period and attained proficiency influenced the amount of attrition that

was found in the various tasks. The period of attrition was argued to affect both the amount of attrition as well as the nature of attrition, in that some linguistic knowledge may attrite earlier and faster than other knowledge (Bahrick, 1984). Interestingly, it was found that the attained proficiency of the participants, as measured by course grades, could also cause less susceptibility to the effects of foreign language attrition, and that the relation between attrition period and test scores was also influenced by attained proficiency. Furthermore, participants' cognitive maturation, further academic training and language experience could also play a role, as Weltens (1989) suggested that these variables might cause higher scores in the attriting group for certain tests, and since the attriting group indeed had older participants who had received further academic training, of which a large portion studied English language and culture.

Furthermore, foreign language attrition differences between German and French were addressed in looking at the second sub question. Here, participants' performance across the four tasks for French and German was compared. A statistically significant interaction between the tested language and participant group was found for the productive vocabulary translation task. This finding implicated that the attrition that was found in the productive vocabulary scores of the different participant groups was significantly influenced by the tested language, and in section 4.2.2., it was demonstrated that the attriters showed significantly more attrition in German than they did in French, as compared to the baseline group. Results thus showed more attrition in German than in French for the productive vocabulary translation task, whereas no statistically significant results were found for the reading task, receptive vocabulary task and c-test. Apart from the aforementioned influence of the period of attrition and attained proficiency, linguistic distance and test design may also have an effect. In looking at linguistic distance, this study mostly supports research arguing that typologically closer languages could have a negative influence on attrition due to a greater susceptibility to conflict, discrimination problems and interference (Altenberg, 1991; Clyne, 1992; Isurin & McDonald, 2001; Saville-Troike, Pan & Dutkova-Cope, 1995), and that might also be the case that the influence of linguistic distance varies across the different linguistic components (Schmid and Mehotcheva, 2012). For test design, it should be noted that issues relating to the suitability, reliability and comparability of the tests could have influenced these results, as analyses on cognateness showed that more similar features might nonetheless be easier to retain (also see section 6.2).



Moreover, in answering the third sub question, the differences between receptive and productive tasks and the effect of task type were researched. Results showed that scores for German productive tasks were significantly higher than scores for German receptive tasks for both attriters and controls, whereas no significant differences between these tasks were found for the French proficiency test. Even though the scores of the German productive tasks were thus higher, results also showed that the found attrition was only present in one of these productive tasks, namely in the productive vocabulary task. In discussing these contradicting results, it was suggested that the order of presentation and the comparability of the reading task and c-test could have influenced these results.

Finally, in investigating whether linguistic distance influences the receptive and productive foreign language attrition of German and French among Dutch students it can be concluded that in this study, linguistic distance seems to affect the attrition that was found in the productive vocabulary task, as the attriting group displayed more attrition for the typologically closer German than for French. However, it should be taken into account that statistically significant amounts of attrition were only found in the vocabulary translation tasks, and that factors such as attrition period, task type, attained proficiency and test design might have influenced these results.

## **6.2. Limitations of the study**

The present study has several limitations which may influence the generalizability of the results. Drawbacks of the study are therefore considered in the following section.

An important limitation of the study is the small number of participants that took part in this research. Even though the aim was 60 controls and 60 attriting participants, the final sample size existed of 30 controls and 57 attriting participants. One of the causes due to which fewer controls took part than expected was the time period in which the study was conducted. Many secondary school pupils who qualified as controls indicated that they did not have time to participate because of the final exams that took place right after the period questionnaire was conducted. Furthermore, many participants had to be excluded because their response was incomplete, or because they indicated to still use their foreign languages relatively often due to family or further academic training that required using the language. Since this FL attrition research is therefore based on a smaller number of participants, the generalizability of the findings that are presented in this study is decidedly more limited.

In addition to this, several limitations should be noted that relate to the design of the foreign language proficiency tests that were used to measure proficiency in German or French in this study. In looking at the design of these two proficiency tests, the aforementioned drawbacks regarding the order of presentation, timing of the tasks and comparability of the two tests should be acknowledged (see sections 5.2.2. & 5.3.1.). Firstly, since tasks were always presented in the same order, priming effects may have occurred due to which completing the first tasks improve performance on following tasks (Bock, Dell, Chang & Onishi, 2007), thereby affecting the differences between receptive and productive task performance. In addition to this, some participants noticed that the time restrictions that were set up for the different tasks were not working, due to which they could exceed the time limit. This timing issue could not only have led to less attrition in the results, as participants have more time to remember their foreign language knowledge, but may also have caused differences between the participants, as some participants may have noticed the timing error whereas others may have not. Lastly, as mentioned in section 5.2.2., the French and German proficiency test might not be entirely comparable, which is due to the use of authentic, less comparable materials, the use of different words for the vocabulary test and due to the differences in subject and length in the reading task.

Moreover, in further considering the foreign language proficiency tasks that were used in this research, limitations regarding the reliability, comparability and suitability need to be taken into account as well. Firstly, the first of these aforementioned issues includes the low reliability of the tasks used in the foreign language proficiency tests, as presented in section 3.2. Even though these scores are likely influenced by the small number of items in the tasks, it should still be noted that the internal consistency of most of the tasks was not sufficient. Furthermore, as presented in section 5.3.1, the c-test and reading task might be less comparable due to the use of authentic materials, differences in the skills that are measures in the tasks, and due to the emergence of possible training effects due to prioritization of receptive tasks practise with reading tests. Lastly, as mentioned in section 5.2.2., the tasks may have been less suitable to demonstrate linguistic distance effects, since no specific attention was paid to whether the materials for the German in fact also contained a substantially larger amount of features that resemble Dutch than the materials that were used for French. Therefore, it should be noted that the reduced suitability of the materials could have caused problems in detecting of linguistic distance effects.

The last drawback of this study includes that monitoring possibilities were limited because of utilizing an online questionnaire. The data that was used in this study was gathered through an online questionnaire that could be filled in anonymously. Although this method of data collection enables more responses, it should be taken into account that these responses are not verifiable, due to which participants can, for example, indicate that they have not used their attriting language whereas this is not the case, or use a dictionary despite being asked not to, which could have influenced the results of the present study.

### **6.3. Directions for further research**

This study has aimed to address a research gap in the domain of language attrition by looking at the effects of linguistic distance on foreign language attrition. Even though this research therefore had a mostly exploratory nature, some general observations regarding the implications of the study ought to be made.

Firstly, it should be noted that the comparison of baseline pupils and attriting students on both receptive and productive tasks has shown remarkable little FL attrition. Significant differences between the controls and attriters were only found in the vocabulary translation tasks, whereas attriters scored higher than controls on the c-test and reading task. This indicates that much of the laboriously learned foreign language knowledge is retained and may even further develop in the first years that follow FL education. Possible explanations for these results included the relatively high level of proficiency that participants attain before the onset of attrition, as well as the period of attrition, yet further research is needed in order to provide more information on retention rates after a longer period of attrition, as well as the reasons as to why and how this retention occurs. This finding is especially relevant for research on language acquisition as well as teaching practices, as it is often assumed that FL attrition is inevitable, whereas this assumption has barely received support from empirical research (Schmid & Mehotcheva, 2012). Therefore, studies showing that more foreign language knowledge retained than is expected could lead to increased student and teacher motivation (Weltens, 1989).

Moreover, through the inclusion of receptive and productive tasks in the proficiency tests it was found that performance on the productive tasks was higher than on the receptive tasks for the German proficiency test. However, these results contradict previous research as well as the attrition that was found in the productive vocabulary task of this

study. In addition to this, no such differences were found for the French proficiency test. Even though these contradicting findings could relate to limitations of the study that have been presented in section 6.2, further research is needed to obtain more information on the differences between receptive and productive skills in foreign language attrition.

Lastly, in focussing on the effects of linguistic distance on foreign language attrition in German and French, less attrition was found for the linguistically more distant French than for German. This study thereby contributes to research on the effects of linguistic distance on attrition through providing additional empirical evidence for studies that have argued that typologically closer languages could have a negative influence on attrition due to a greater susceptibility to conflict, discrimination problems and interference (Altenberg, 1991; Clyne, 1992; Isurin & McDonald, 2001; Saville-Troike, Pan & Dutkova-Cope, 1995). However, it should be taken into account that linguistic distance is comprised of both the actual distance between languages, also called typological proximity, as well as the distance that is perceived to exist between languages, which is also referred to as the perceived linguistic distance. While only typological distance was measured in this study, it is important to note that perceived linguistic distance could also influence foreign language attrition, as the perceived linguistic distance between languages may vary from the actual distance (de Angelis, 2007). Therefore, further research is necessary where the combined influence of perceived and actual linguistic distance on foreign language attrition is measured.

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## Appendix I: Questionnaire

Beste deelnemer,

Dit onderzoek maakt deel uit van mijn scriptie voor de master Taalwetenschappen aan de Radboud Universiteit Nijmegen. Hierbij gaat het om taalvaardigheid in Duits en Frans tijdens en na de middelbare school. De enquête bevat meerdere achtergrondvragen en 3 oefeningen om taalvaardigheid te meten per taal. De enquête duurt ongeveer 20-30 minuten, afhankelijk van je taalvaardigheid en het aantal talen waar je examen in hebt gedaan of gaat doen.

Deelname aan dit onderzoek is enkel mogelijk voor VWO scholieren en universiteitsstudenten die Duits en/of Frans examen hebben gedaan, of dat dit jaar zullen gaan doen. Meedoen aan het onderzoek is geheel vrijwillig, antwoorden zullen anoniem worden behandeld. De enquête kan ieder moment gestopt worden, het versturen van deze enquête betekent dat je akkoord gaat met deelname aan dit onderzoek.

Voor vragen of meer informatie, mail gerust naar [j.leusink@student.ru.nl](mailto:j.leusink@student.ru.nl).

Alvast ontzettend bedankt voor je deelname,  
Jennifer Leusink

### Deel I: Achtergrond

*Er volgen nu tien vragen over jezelf, vul deze alsjeblieft naar waarheid in*

Wat is je geslacht?

- ☐ Man
- ☐ Vrouw
- ☐ Anders

Wat is je leeftijd?

Welke opleiding volg je nu?

- ☐ VWO
- ☐ Gymnasium
- ☐ Bachelor
- ☐ Master

Hoe heet de opleiding waar je op dit moment mee bezig bent?

---

Welke bacheloropleiding heb je gedaan?

---

In welk leerjaar zit je nu?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6

Wanneer heb je de eindexamens van de middelbare school gedaan of ga je dit doen?

- ☐ 2010
- ☐ 2011
- ☐ 2012
- ☐ 2013
- ☐ 2014
- ☐ 2015
- ☐ 2016
- ☐ 2017

Geef aan welke talen je spreekt, en geef aan hoe goed je taalvaardigheid in deze talen is.  
Gebruik de lege tekstvelden als je talen spreekt die er niet bij staan.

***(Participants could use sliders to indicate their proficiency on a scale from 1 to 100.)***

- Nederlands

- Engels

- Duits

- Frans

- Andere taal: \_\_\_\_\_

- Andere taal: \_\_\_\_\_

- Andere taal: \_\_\_\_\_

Is Nederlands je moedertaal?

- ☐ Ja
- ☐ Nee

**Deel II: Duits**

Hoe lang heb je (tot nu toe) Duitse les gehad?

- ☐ Ik heb helemaal geen Duits gehad
- ☐ Ik heb minder dan drie jaar Duits gehad
- ☐ Ik heb meer dan drie jaar Duits gehad

Heb je het VWO eindexamen Duits gedaan?

- ☐ Ik heb geen eindexamen Duits gedaan
- ☐ Ik heb wel eindexamen Duits gedaan
- ☐ Ik ga dit jaar eindexamen Duits doen

**Achtergrond**

*Beantwoord hieronder enkele achtergrondvragen over Duits. Enkele vragen gaan over je mening wat betreft houding, motivatie en taalvaardigheid. Hierbij zijn antwoorden niet goed of fout, maar is het belangrijk wat jij er persoonlijk van vindt.*

Op de middelbare school stond/sta ik (ongeveer) dit cijfer voor Duits

- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10

Geef aan tot in hoeverre je het eens bent met de volgende statements.

***(Participants could use sliders to indicate whether they agreed with the statements on a scale of 1 to 100).***

- Ik vind/vond de Duitse lessen op school geweldig.
- Ik vind de Duitse taal geweldig.
- Ik vind het leuk om Duits te gebruiken buiten school.
- Ik vind dat ik goed Duits kan.

Hoe vaak heb de afgelopen twee jaar de volgende dingen in het Duits gedaan buiten school?  
***(Participants could use sliders to indicate how much they had used German for reading, writing, speaking and listening)***

- Lezen
- Schrijven
- Spreken
- Luisteren

In welke context gebruikte je dan Duits (bijv. op vakantie, met familie, op het werk)?

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Heb je na de middelbare school Duits gestudeerd in het hoger onderwijs?

- ☐ Ja
- ☐ Nee

### **Taalvaardigheid Duits**

Om je taalvaardigheid in het Duits te meten volgen nu drie korte tests.

1. Een Duitse leestekst met vijf leesvragen (examenniveau).
2. Een korte vocabulaire test met twintig woordjes.
3. Een kort tekstje (1 alinea) waar tien woorden zijn weggelaten.

Om elke deelnemer een gelijke kans te geven is er een tijdslimiet ingesteld per pagina. Als dit het geval is staat het op de pagina vermeld, en zie je een timer.

Succes!

### **Leesvaardigheid**

*Hieronder volgt een korte tekst, met daarbij vijf leesvaardigheidsvragen. Beantwoord deze vragen zonder het gebruik van een woordenboek of andere hulpmiddelen.*

*Let op: je hebt hiervoor maximaal 12 minuten de tijd.*

## Gourmets und Gourmands

Von Norbert Sturm

Vorurteile leben länger als realitätsbezogene Wertschätzungen. Das ist altbekannt. Deshalb wird selbst in bürgerlichen Kreisen fast schon unbekümmert hingenommen, dass Franzosen noch immer als Gourmets, also als Feinschmecker gelten, wohingegen dem Deutschen unverändert der Ruf anhaftet, ein Gourmand, ein Vielfraß zu sein. Man wusste es eh besser. Die Wirklichkeit schien die ernährungsphysiologische Schwarzweißmalerei zigtausend Mal widerlegt zu haben.

Nach den Erzählungen gehen Bundesbürger längst nicht mehr ins Gasthaus oder in die Küche, um ihren Hunger zu stillen. Sie suchen vielmehr den Gaumengenuss, wollen tafeln, weil Essen unter zivilisierten Menschen mehr sei als nur eine bloße Kalorienzufuhr zur Erhaltung der Physis. Speisen ist so etwas wie ein Kulturzeichen. Und seitdem die Kunden ein Faible für alles Gute und Feine haben sollen, benennen hiesige Gaststätten und Restaurants sogar einfache Gerichte mit klangvollen französischen Namen und zeichnen sie mit Phantasiepreisen aus. Die Rechnung schien lange Zeit aufzugehen. Doch mit dem Konjunkturereinbruch im vergangenen Jahr

entpuppt sich das plötzlich als bloßer Schein. In einer Feldstudie fand das Marktforschungsinstitut Nielsen heraus, dass die deutschen Geschmäcker mehrheitlich wieder auf Einfaches aus sind. Egal, wieviele Kochbücher zum Thema Nouvelle Cuisine erschienen sind, der Sinn steht vielen nach Fertiggerichten und hier vor allem nach Frikadellen. Obwohl die Deutschen Weltmeister im Reisen sind und deshalb eigentlich auch exotische Menüs bevorzugen müssten, konzentrieren Bundesbürger ihre Nachfrage in Bayern auf Fleischpflanzerl, in Berlin auf Bouletten und in Hamburg auf Frikadellen.

Bei dieser Geschmacksverflachung ist es nur ein schwacher Trost, dass der Trend zum Einfachen zumindest aus ernährungsärztlicher Sicht gar nicht so falsch ist. Denn die Frikadellen entsprechen wegen ihres hohen Brostanteils sowohl der gesundheitspolitischen Forderung nach ballastreicher Kost als auch der Warnung vor allzu viel Fleischgenuss. Trotzdem hatten sich Beobachter mehr Geschmacksvielfalt von den Deutschen versprochen. Deren Küche ist besser als ihr Ruf.

*Süddeutsche Zeitung*

### Leesvraag 1:

“Die Wirklichkeit ... haben.” (regels 9-11).

Om welke “Schwarzweißmalerei” gaat het hier concreet?

### Leesvraag 2:

„Die Rechnung schien lange Zeit aufzugehen.“ (Zeile 24-25).

Was meint der Verfasser damit?

- ☐ Die Deutschen sind in Bezug auf ihren Restaurantbesuch immer sehr preiskritisch gewesen.
- ☐ Die französischen Restaurants haben viele Jahre groß an den Deutschen verdient.
- ☐ Im Gaststättengewerbe hat man lange davon profitiert, dass die Deutschen sich angeblich zu Feinschmeckern entwickelt hatten.
- ☐ Schon seit langem verlegen sich viele deutsche Restaurants auf eine Geschmacks-verfeinerung ihrer Gäste.



Leesvraag 3:

“In einer ... sind.” (regels 28-31). Welke twee feiten noemt de schrijver op grond waarvan eigenlijk iets anders verwacht zou mogen worden?

Feit 1: \_\_\_\_\_

Feit 2: \_\_\_\_\_

Leesvraag 4:

Men heeft vastgesteld dat de Duitsers in hun eetgewoontes “mehrheitlich wieder auf Einfaches aus sind” (regels 30-31).

Wat is daarvan volgens de tekst de oorzaak?

\_\_\_\_\_

Leesvraag 5:

"Denn die ... Fleischgenuß." (Zeile 44-48).

Was will der Verfasser damit deutlich machen?

- ☐ Die Deutschen essen gern und viel.
- ☐ Die Deutschen haben gelernt, auf gesunde Nahrung zu achten.
- ☐ Typisch deutsche Gerichte müssen gar nicht ungesund sein.
- ☐ Von allen Imbissgerichten ist die Frikadelle schon seit Jahren am beliebtesten.

**Vocabulaire**

*Vertaal de twintig onderstaande woorden. Vul 'x' in als je een woord niet weet.*

*Maak hierbij geen gebruik van hulpmiddelen zoals een woordenboek.*

*Let op: je hebt hiervoor maximaal 5 minuten de tijd*

Duits – Nederlands

- Maßnahme
- künftig
- steuern
- Begeisterung
- prägen
- manchmal
- Gesetz
- Daten
- gerade
- Teil

Nederlands – Duits

- beslissen
- ondertussen
- geweld
- gebruiken
- strijd
- apparaat
- bevatten
- hulp
- onderwijzen
- ouders

**C-test Duits**

*In de tekst hieronder zijn delen van woorden weggelaten. Vul de hele woorden hieronder in. Maak hierbij geen gebruik van een woordenboek of andere hulpmiddelen. Vul 'x' in als je een woord niet weet. Let op: je hebt hiervoor maximaal 8 minuten de tijd.*

In Deutschland gibt es sehr viele Feste und Bräuche. Jede Region hat ihre eigenen Bräuche und es ist unmöglich auf jeden Brauch und jedes Fest einzugehen. Wir wollen uns da \_\_\_\_1\_\_\_\_ besonders auf \_\_\_\_2\_\_\_\_ die gro \_\_\_\_3\_\_\_\_ Feste in \_\_\_\_4\_\_\_\_ Deutschland konzent \_\_\_\_5\_\_\_\_ und sie \_\_\_\_6\_\_\_\_ Ihnen vorstellen \_\_\_\_7\_\_\_\_. Auch histor \_\_\_\_8\_\_\_\_ Hintergründe und \_\_\_\_9\_\_\_\_ Geschichten bietet \_\_\_\_10\_\_\_\_ wir Ihnen teilweise an. Wir hoffen, daß Sie dadurch Deutschland und seine Traditionen noch besser kennenlernen.

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**Einde Duits**

**Deel III: Frans**

Hoe lang heb je (tot nu toe) Franse les gehad?

- ☐ Ik heb helemaal geen Frans gehad
- ☐ Ik heb minder dan drie jaar Frans gehad
- ☐ Ik heb meer dan drie jaar Frans gehad

Heb je het VWO eindexamen Frans gedaan?

- ☐ Ik heb geen eindexamen Frans gedaan
- ☐ Ik heb wel eindexamen Frans gedaan
- ☐ Ik ga dit jaar eindexamen Frans doen

**Achtergrond**

*Beantwoord hieronder enkele achtergrondvragen over Frans. Enkele vragen gaan over je mening wat betreft houding, motivatie en taalvaardigheid. Hierbij zijn antwoorden niet goed of fout, maar is het belangrijk wat jij er persoonlijk van vindt.*

Op de middelbare school stond/sta ik (ongeveer) dit cijfer voor Frans

- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10

Nu volgen enkele vragen over je mening wat betreft je houding, motivatie en taalvaardigheid. Hierbij zijn er geen antwoorden niet goed of fout, maar is het belangrijk wat jij er persoonlijk van vindt.

***(Participants could use sliders to indicate whether they agreed with the statements on a scale of 1 to 100).***

- Ik vind/vond de Franse lessen op school geweldig.
- Ik vind de Franse taal geweldig.
- Ik vind het leuk om Frans te gebruiken buiten school.
- Ik vind dat ik goed Frans kan.

Hoe vaak heb de afgelopen twee jaar de volgende dingen in het Frans gedaan buiten school?  
***(Participants could use sliders to indicate how much they had used German for reading, writing, speaking and listening)***

- Lezen
- Schrijven
- Spreken
- Luisteren

In welke context gebruikte je dan Frans (bijv. op vakantie, met familie, op het werk)?

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Heb je na de middelbare school Frans gestudeerd in het hoger onderwijs?

- ☐ Ja
- ☐ Nee

### **Taalvaardigheid Frans**

Om je taalvaardigheid in het Frans te meten volgen nu drie korte tests.

1. Een Franse leestekst met vijf leesvragen (examenniveau).
2. Een korte vocabulaire test met twintig woordjes.
3. Een kort tekstje (1 alinea) waar tien woorden zijn weggelaten.

Om elke deelnemer een gelijke kans te geven is er soms een tijdslimiet ingesteld per pagina. Als dit het geval is staat het op de pagina vermeld, en zie je een timer.

Succes!

### **Leesvaardigheid**

*Hieronder volgt een korte tekst, met daarbij vijf leesvaardigheidsvragen. Beantwoord deze vragen zonder het gebruik van een woordenboek of andere hulpmiddelen.*

*Let op: je hebt hiervoor maximaal 10 minuten de tijd*

## Françoise Hardy, ascendant sixties

Ex-star des sixties, Françoise Hardy a longtemps incarné l'adolescence, maudite période de l'existence où l'on va, «par les rues, l'âme en peine». Chantant ce mal-être tout au long des excitantes années 60, celle en qui Mick Jagger voyait «la femme idéale» devient l'idole de sa génération, la muse de quelques grands couturiers avant-gardistes (Chanel, Saint-Laurent), et l'épouse de Jacques Dutronc...

- **Le Nouvel Observateur**. *De tout temps, une sorte de vague à l'âme a inspiré vos chansons. Est-il aussi très présent dans votre vie quotidienne?*

- **Françoise Hardy**. Si je me surprends parfois à éclater de rire, la gaieté n'est qu'une façade tandis qu'une profonde tristesse est vraiment le fond de ma nature. D'ailleurs, je ne suis absolument pas attirée par ce qui est gai. En fait, ce que je recherche, c'est la beauté. La beauté en art provient souvent de la tristesse, comme disait Alfred de Musset: «Les chants désespérés sont les chants les plus beaux.» C'est tellement vrai! Lisez les poèmes de Baudelaire. écoutez l'adagio du Concerto n° 5 de Beethoven... On sent bien que ces artistes ont souffert, c'est pour cela que leurs œuvres sont à la fois si tragiques et si belles.

- **N.O.** *Mais d'où vous vient ce sentiment?*

- **F. Hardy**. J'ai trouvé la réponse en m'intéressant à la psychologie et à l'astrologie. Chacun d'entre nous a une problématique qui se dessine dans son ciel de naissance. Je suis

saturnienne, or nous savons que toute personne née à une heure forte de Saturne portera en elle une mélancolie et la recherchera toujours. Déjà toute petite, je préférais «la Petite Sirène» à tout autre conte parce que – je l'ai compris plus tard – il parle de l'amour inaccessible. Ce thème est en moi, c'est évident; il a inspiré la plupart de mes chansons.

- **N.O.** *Qu'évoquent pour vous les années 60?*

- **F. Hardy**. C'était l'adolescence, une période qui n'est pas aussi légère qu'on le dit: on est mal dans sa peau, on rêve d'amour absolu et en même temps on a peur de ne pas savoir aimer, d'être mal aimé. Enfin, c'était vrai à l'époque. Aujourd'hui, les jeunes gens me semblent davantage préoccupés par leur avenir professionnel que par leurs relations amoureuses. Il suffit d'écouter les discours des rappeurs pour s'en rendre compte.

- **N.O.** *«La Saison des pluies» est une chanson sur la vieillesse. C'est un peu tôt pour y penser, non?*

- **F. Hardy**. Force est de constater que je suis arrivée à la saison des pluies puisque j'ai dépassé la cinquantaine! Les années à venir seront fatalement plus grises que roses. Plus on vieillit, plus l'angoisse de la mort, l'idée que l'on va devoir quitter tout ce que l'on aime et tout ce que l'on connaît, devient obsédante. A présent, il ne me reste plus qu'à souhaiter que mon fils soit heureux et qu'à attendre qu'il me donne des petits-enfants.

«Le Nouvel Observateur»

### Leesvraag 1:

«Ex-star ... Jacques Dutronc...» (lignes 1-10)

A quoi servent ces lignes?

- ☐ A donner une image de Françoise Hardy dans sa jeunesse.
- ☐ A donner une image des années 60 en général.
- ☐ A montrer que Françoise Hardy était plus populaire dans les années 60 qu'aujourd'hui.
- ☐ A montrer que l'adolescence a toujours été une période de mal-être.

### Leesvraag 2:

«De tout temps, ... vie quotidienne?» (lignes 11-14)

Que peut-on conclure de la réaction de Françoise Hardy?

- ☐ Elle a longtemps souffert de ne pas avoir été belle lors de sa jeunesse.
- ☐ Elle a suivi l'exemple de certains grands écrivains et compositeurs.
- ☐ En réalité, elle s'est toujours considérée comme quelqu'un de plutôt gai.
- ☐ Un sentiment de tristesse a toujours joué un rôle dominant dans sa vie.

Leesvraag 3:

«Déjà toute ... l'amour inaccessible.» (lignes 36-39)

Par quel(s) mot(s) cette phrase aurait-elle pu commencer?

- ☐ C'est pourquoi,
- ☐ D'autant plus que,
- ☐ Malgré cela,
- ☐ Pourtant,

Leesvraag 4: «Il suffit ... s'en rendre compte.» (lignes 52-53)

Wat maken de songteksten van rappers duidelijk volgens Françoise Hardy?

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Leesvraag 5:

«Force est ... des petits-enfants.» (lignes 57-66)

Quelle attitude ressort de ces mots de Françoise Hardy?

- ☐ De la résignation.
- ☐ De la révolte.
- ☐ De l'espoir.
- ☐ De l'indifférence.

**Vocabulaire**

*Vertaal de twintig onderstaande woorden. Vul 'x' in als je een woord niet weet. Maak hierbij geen gebruik van hulpmiddelen zoals een woordenboek. Let op: je hebt hiervoor maximal 5 minuten de tijd.*

Frans – Nederlands

- réparer
- naissance
- cerveau
- selon
- réfléchir
- exceptionnel
- maladie
- consommer
- chacun
- enfant

Nederlands – Frans

- gemakkelijk
- domein
- geld
- gemiddeld
- markt
- onderwijs
- kijken
- diversiteit
- ontmoeten
- spijbelen

**C-test Frans**

*In de tekst hieronder zijn delen van woorden weggelaten. Vul de hele woorden hieronder in. Maak hierbij geen gebruik van een woordenboek of andere hulpmiddelen. Vul 'x' in als je een woord niet weet. Let op: je hebt hiervoor maximaal 10 minuten de tijd.*

Comme dans de nombreux autres pays, les mois de décembre et janvier en France sont une succession de fêtes et de repas de famille. Il exi \_\_\_\_1\_\_\_\_ de nombr \_\_\_\_2\_\_\_\_ traditions religi \_\_\_\_3\_\_\_\_ mais aus \_\_\_\_4\_\_\_\_ laïques qu \_\_\_\_5\_\_\_\_ les fran \_\_\_\_6\_\_\_\_ célèbrent à cet \_\_\_\_7\_\_\_\_ occasion. Aujourd’hui no \_\_\_\_8\_\_\_\_ vous propo \_\_\_\_9\_\_\_\_ de (re)déco \_\_\_\_10\_\_\_\_ certaines de ces traditions françaises des fêtes de fin d’année.

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**Einde Frans**

***Dit is het einde van de enquête.***

***Heb je nog vragen, mail dan naar [j.leusink@student.ru.nl](mailto:j.leusink@student.ru.nl).***

***Bedankt voor het meedoen!***