The Regular and Adjunct Middle Construction in Dutch and English

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Dedication

I would like to thank my supervisor Dr Olaf Koeneman for all the support, guidance and inspiration. Without your syntax modules I would not have been able to write this thesis. I would also like to thank Tajda Ferko for the extensive proofreading and assistance.
Abstract
This study researched the regular and adjunct middle construction in Dutch and English. English and Dutch are both Germanic languages, making them part of the same subgroup in the Indo-European language tree. However, further research into these languages has shown significant differences between the two. This suggests comparative research into middle constructions in English and Dutch is worthwhile. This paper constructs a number of hypotheses. Firstly, it proposed that adjunct middles do not occur in English but do occur in Dutch. Secondly, the study suggested that only accomplishments and activities convert to grammatical middles. Thirdly, it hypothesised that affectedness, a factor known to be influential on middle formation, is not a binary concept. Finally, it theorized that only agentive predicates can convert to grammatical middles. The data was collected by means of an empirical study using an online grammatical judgement survey. The following conclusions were drawn from the data. The study concluded that agency is a necessity for middle formation. Moreover, it concluded that affectedness was indeed a gradual concept and indeed influences middle formation to the extent that unaffected objects cannot form grammatical middles. Conclusions on accomplishment and achievement middles could not be reached without further research.

Key words: middle construction, regular middle, adjunct middle, Dutch, English, middle formation
# Table of Contents

1 Introduction .......................................................................................................................... 1

2 The Middle Construction .................................................................................................... 4

   2.1 What is a Middle? ........................................................................................................... 4

      2.1.1. Middle Characteristics ......................................................................................... 4

      2.1.2 Middles and Passives ............................................................................................ 6

      2.1.3 Middles and Middle Voice .................................................................................... 6

      2.1.4 Middles and Inchoatives ....................................................................................... 7

         2.1.4.1. Comparing the Inchoative and the Middle ....................................................... 7

         2.1.4.2 The Implied Agent Role .................................................................................... 8

      2.1.5 Summary of Middle Characteristics ....................................................................... 12

   2.2 Factors Influencing Middle Formation ........................................................................... 12

      2.2.1 Agency .................................................................................................................. 12

      2.2.2 Aspect .................................................................................................................. 15

         2.2.2.1 The Four Aspectual Classes ............................................................................ 15

         2.2.2.2 The Aspectual Classes and Middle Formation ............................................... 16

         2.2.2.3 Diagnostics Distinguishing the Aspectual Classes ......................................... 17

      2.2.3 Affectedness ......................................................................................................... 20

         2.2.3.1 Defining Affectedness ...................................................................................... 20

         2.2.3.2 The Degrees of Affectedness Theory by Beavers (2011) ............................ 21

         2.2.3.3 Affectedness and Middle Formation ............................................................... 25

   2.3 The Adjunct Middle ...................................................................................................... 27

      2.3.1 Defining the Adjunct Middle ................................................................................. 27

      2.4.2 Instrumental Subject Clause and the Adjunct Middle ......................................... 28

3 Research Question and Method ......................................................................................... 30

   3.1 Research Question and Hypothesis .............................................................................. 30

   3.2 The Survey .................................................................................................................. 30

      3.2.1 Survey Outline ..................................................................................................... 30

      3.2.2 Grammatical Judgement Task One: The Regular Middle .................................. 31

         3.2.2.1 Testable Middles ............................................................................................. 31

         3.2.2.2 The Tested Middles ......................................................................................... 35

      3.2.3 Grammatical Judgement Task Two: ISC and Adjunct Middle ............................. 37

         3.2.3.1 Adjunct Middle and ISC Judgment Task Outline .......................................... 37
1 Introduction

The use of middles in the Germanic languages has been extensively researched, but the comparison between English and Dutch has not. This study will compare English and Dutch with regard to their use of middles, focusing on the regular an adjunct middle. A middle is a sentence construction where the external argument of a normal main clause is demoted and another DP takes its place. The regular middle and adjunct middle are different in their application of the DP that moves to the subject position. A regular middle promotes the direct object to the subject position creating a middle like (1a’ as cited from Broekhuis, unpublished). A regular middle needs to be formed from a transitive predicate because it needs a direct object to promote during conversion. The adjunct middle does not promote the DO, instead it promotes the DP in a PP complement of the predicate (as in 1b’ cited from Broekhuis, unpublished). The adjunct middle is constructed from an intransitive predicate.

(1) a. Peter leest het boek.
   Peter reads the book
a.’ Dit boek leest gemakkelijk.
   This book reads easily
b. Peter zit op de stoel.
   Peter sits on the chair
b.’ De stoel zit comfortabel.
   The chair sits comfortably
   (int.) The chair is comfortable to sit on

Even though English and Dutch are closely related in the language tree there are many differences between them. Previous literature has indicated that the regular middle is employed in both languages (Ackema & Schoorlemmer 2005), whilst it is debated whether adjunct middles are used in Dutch only or also in English (Ackema & Schoorlemmer 2005). Peter Ackema and Maaike Schoorlemmer (2005) argue that there is a construct that looks like an adjunct middle in English but is actually an ISC. As mentioned previously, the adjunct middle is constructed from an intransitive verb, where the DP in the PP converts to the subject during middle conversion. An ISC is constructed in a similar way to an adjunct middle. It promotes the DP in the PP to the subject position when converted, which is why the ISC could be grouped together with the adjunct middle. However, there are differences between
the ISC and adjunct middle, outlined by Ackema and Schoorlemmer (2005). An ISC can become transitive, whilst an adjunct middle cannot, see section 1.3.1. Broekhuis defines the adjunct middle as being constructed from an intransitive verb, which the ISC does not do. The verb in an ISC arguably carries its transitivity throughout the conversion from main clause to middle. If English does allow adjunct middles native speakers should judge the adjunct middle construction to be grammatical, in the same way Dutch does.

The first part of this study will focus on the regular middle in both languages. There is no literature that indicates there is a different usage of the regular middle in Dutch and English but simultaneously no literature advocating their similarity. The literature shows three elements that affect regular middle formation, which are still debated; agency, aspect, and affectedness (Lekakou, 2005; Ackema and Schoorlemmer, 2005; Ackema and Schoorlemmer, 1994).

Agency refers to the external theta role cast out by the predicate. Previous literature argues that the external theta of the predicate must be an agent to be able to convert to a grammatical middle (Ackema and Schoorlemmer, 2005; Lekakou, 2005). The hypothesis constructed from the literature is then; non-agentive predicate convert to ungrammatical middles.

Aspect concerns the aspectual classification of a predicate, following the aspectual classes distinguished by Vendler (1957); the states, the achievements, the activities, and the accomplishments. It has been argued that only accomplishments and activities convert to grammatical middles (Fagan; Lekakou, 2005; Ackema and Schoorlemmer, 2005). Rothstein (2004) re-examines these classes and explains that they are defined by two traits; whether or not the predicate is telic and whether it can be put into the progressive tense (the stages parameter). Telicity is not relevant to middle formation, but the stages parameter is as it defines the accomplishments and activities.

Lastly, affectedness entails the extent to which a direct object is affected by the event denoted in the predicate. The regular middle is formed by promoting the logical object to the subject position. The literature suggests that when an object is unaffected it converts to an ungrammatical middle, because that object will not display the effects of the event denoted in the predicate (Ackema and Schoorlemmer, 1994). Beavers (2011) outlines a four degree theory to specify affectedness, demonstrating that affectedness is not binary but should be seen as a scale. The degrees of affectedness theory by Beavers was not designed for middle formation specifically. Therefore, it has not been regarded when looking at middle formation before. This study will attempt to apply Beavers’ (2011) theory of affectedness to regular
middle formation to see if his theory can be beneficial for predicting grammatical middle formation.

The second part of this study concerns the adjunct middle. The evidence to support the distinction between the adjunct middle and ISC construction is debated and therefore this study will aim to test this hypothesis for English and Dutch.

All in all this study will aim to make a direct comparison between regular and adjunct middles in English and Dutch. It will focus specifically on answering the following questions:

- Which aspectual classes can convert to grammatical middles?
- Can non-agentive predicates convert to grammatical middles?
- How does the affectedness theory in Beavers (2011) translate to middle conversion?
- Do adjunct middles occur in English, or do they only occur in Dutch?
- Will there be differences in middle formation for English and Dutch? If so, which differences?

Section two will explain a number of general characteristics of middles and establish a definition of the regular and adjunct middle specifically. Furthermore, it will explain the three properties that literature has shown to affect the ability of middle conversion, namely agency, aspect, and affectedness, more elaborately. Section three will elaborate on my method of testing, specifying the structure of the survey and participants. Section four will show the statistical result derived from the testing in Section two. Section five will consider the results and attempt to answer the research questions stated earlier, as well as test the hypotheses deduced from previous literature. It will also consider the further testing and evaluate the test process. Section six will draw the paper to a close by summarizing the findings and deductions that could be made as a result of the obtained data.
2 The Middle Construction

This section will elaborate on the regular Germanic middle and adjunct middle. It will start by establishing a set of characteristics of the regular Germanic middle, which will be followed by an explanation of three factors that influence regular middle formation. The section will then shift its focus from the regular middle to the adjunct middle, which is a variation of the regular middle. In the rest of the study the regular Germanic middle will be referred to as the middle. The adjunct middle will remain the adjunct middle. The section is organized as follows. Section 2.1 will explain the regular middle construction in more detail. Section 2.2 will explain three factors that influence regular middle formation; agency, aspectual class, and affectedness. Section 2.3 will give a more in depth definition of the adjunct middle.

2.1 What is a Middle?

This section will consider the Germanic middle construction in more detail. It will do so by comparing the middle construction to seemingly similar constructions; the passive construction, middle voice, and the inchoative construction. A comparison between these three constructions and the middle will show how the middle and constructions differ, which will generate distinguishing characteristics for the middle. This section is subdivided in the Section 2.1.2, which will compare the middle construction and passive construction. Section 2.1.3 will compare the middle construction to the middle voice. Section 2.1.4 will compare middles and inchoatives. Section 2.1.5 will summarize the characteristics of the general middle construction.

2.1.1 Middle Characteristics

A middle construction demotes the external argument of the main clause counterpart. In the case of the regular Germanic middle, the DP that is moved to the subject position is the direct object of a transitive verb. The direct object is base generated as the complement DP of the verb in the VP and moved up to the subject position. Therefore, only transitive verbs can undergo regular middle formation (Broekhuis unpublished, and Stelmaszczyk 1993). The regular Germanic middle employed by English and Dutch has two distinguishing properties; the middle is stative and the middle usually possesses some kind of modification of the modality (Ackema and Schoorlemmer, 2005).

Stativity entails that the sentence is not eventive. To demonstrate the stativity of middles Ackema and Schoorlemmer (2005) outline the ‘what happened?’ diagnostic. This
diagnostic places the middle after the question ‘what happened?’ If it yields a grammatical construction it has passed the test (see 2b) and if it yields an ungrammatical construction like (2a as cited from Ackema and Schoorlemmer, 2005), it has not passed the test. 

(2) a. Wat gebeurt er? #De baby verschoont moeilijk. MIDDLE
what happens there? the baby cleans with-difficulty
‘What is happening? It is difficult to change the baby’s nappies.’
b. Wat gebeurt er? Het boek valt op de grond. MAIN CLAUSE
what happens there? the book falls on the ground

The second property, modification of the modality, implies that a middle “almost invariably” comes with a modifier like ‘easily’ (Ackema and Schoorlemmer, 2005). Without the adverb the middle is ungrammatical as demonstrated by (3 cited from Ackema and Schoorlemmer, 2005).

(3) a. Bureaucrats bribe ??(easily/only after a good lunch/ . . . ).
b. Dieses Buch liest sich *(leicht/schwer/ . . . ). German
c. Zo’n stuk zingt *(niet gemakkelijk/lekker/ . . . ). Dutch
such-a piece sings not easily/comfortably

The Germanic middle is labelled the type I middle by Ackema and Schoorlemmer (2005). They define two types of middles; type I and type II middles. Type II middles are used in the romance languages (Ackema and Schoorlemmer, 2005). Type II middles differ from Type I middles in that they use reflexive morphology whilst Type I middles do not. Furthermore, Type II middles are reminiscent of the passive construction, in that they can reinstate the agent role by means of a by-phrase (cf. reflexive passives) like the French middle in (2b) (Lekakou, 2003). Type I middles cannot do this, they either delete their external argument completely, meaning they have no implicit agent role to be lexicalised (4a) as argued by Lekakou, 2003), or as argued by Ackema and Schoorlemmer, this agent role can only be expressed by a for-phrase (see section 1.1.3 for further consideration). In the following sections or Section all middles will refer to Type I middles. Compare the English Type I middle in (4a) and French type II middle in (4b).
2.1.2 Middles and Passives

The middle is similar to a passive construction, which similarly demotes the external argument. A passive however changes the verb form into passive voice (5), whilst a middle does not alter the verb (6). Secondly, a passive can lexicalize the external argument role in the form of a by-phrase (5c). A middle cannot use a by-phrase (6c) but can use a for-phrase to lexicalize the implied external theta role (see section 2.1.4).

The comparison between middles and passives then shows that middles do not alter their verb form when converted and cannot lexicalize their external argument in the form of a by-phrase.

2.1.3 Middles and Middle Voice

As was explained in the previous section, a middle does not change its verb during middle formation, which means they cannot use middle voice, like a passive construction uses passive voice. Middle voice is a verb form, used for instance in ancient Greek that is neither active nor passive (compare 3a and 3b again). It expresses an action that is directed at or beneficial for the external argument. In a sense the external argument undergoes and enforces the action simultaneously (7 from Ackema and Schoorlemmer 2005).

(7) eklegomai
    choose-REFL

GREEK
A key difference between middle constructions and middle voice is that a sentence in a middle voice can assign the external theta role to regular DP argument in that sentence; it can have a subject to which it assigns that theta role. A middle predicate cannot reassign the external theta role to a regular DP argument because the for-phrase is not a regular argument of the verb. Moreover, a middle voice shows a co-reference relation between the subject and another argument, which is expressed in many languages by reflexive pronouns. Middles do not show this relationship because their external theta has been demoted. It has been argued that there is a hidden agent role (or external theta) in the middle (Klingvall, 2005) but it cannot reassign this theta role by means of a by-phrase, like a passive, only by means of a for-phrase. The comparison between middle voice and middles shows that middles indeed demote the external argument.

2.1.4 Middles and Inchoatives

Similar to the previous section, this section will compare the middle to another seemingly similar construction; the inchoative. First this section will define the inchoative. Then it will compare the two constructions and outline the differences and similarities between the two. Finally, the section will discuss empirical evidence to show that the middle has implied agent whilst the inchoative does not. The section is organised as follows. Section 2.1.4.1 will define the inchoative and compare it to the middle. Section 2.1.4.2 will give evidence to support the implied agent in middles but not in inchoatives.

2.1.4.1 Comparing the Inchoative and the Middle

Inchoatives are sentences with an inchoative verb. An inchoative verb expresses a change of state in their grammatical subject (Ackema and Schoorlemmer, 2005), consider example (8). In sentence (8b) the state of the window has changed from being whole to being broken.

(8)  a. John broke the window. CAUSATIVE
     b. The window broke. ANTI-CAUSATIVE/INCHOATIVE

An inchoative verb is also called an anti-causative verb. An anti-causative verb is one half of a causative/anti-causative verb pair. The verb pair is a manifestation of an optionally
transitive verb, which can function with (transitive) and without a DO (intransitive). The optionally transitive verb is anti-causative when intransitive and causative when transitive. An anti-causative verb promotes the logical patient to the subject position, where it keeps its theta role as patient. When looking at (8) the agent role is lexicalised by John in (8a) but this role is gone in (8b).

Inchoatives, like middles and passives, lack the expression of the logical subject. Again, when looking at (8a) the causer of the broken glass is not lexicalised. Similarly middles do not lexicalize their logical subject because that subject has been demoted. In many languages inchoatives and middles are morphologically identical (Ackema and Schoorlemmer 2005). However, a key difference between the middle and inchoative is that unlike middles, inchoatives have no implied agent role. A middle, even though the agent role cannot be expressed, has an implied external theta role, which will be explained in section 2.2.1. An inchoative does not have an implied agent role (Ackema and Schoorlemmer, 2005).

2.1.4.2 The Implied Agent Role

The previous section proposed that the inchoative does not have an implied agent role but the middle does. This section will discuss the evidence in favour of this analysis based on Ackema and Schoorlemmer (2005). They argue the implied agent role in middles is evident in: the reflexive markers in adjunct middles, the use of for-phrases, the interpretation of a modifier, and the placement of the adverb.

Firstly, the implied agent role can be deduced from a reflexive adjunct middle. This type of middle is employed by romance languages with a reflexive marker. The reflexive adjunct middle is not directly relevant for English or Dutch because both languages do not employ this middle, but it will give morphological evidence for the implied agent in a middle construction. The reflexive adjunct middle is a combination of the adjunct middle, and a reflexive. In the case of (9 as cited in Ackema and Schoorlemmer, 2005) a reflexive pronoun même is combined with an adjunct middle. Consider example (9).

(9) Cela se dit facilement de soi-même. ADJUNCT REFLEXIVE
    that REFL says easily of oneself
    ‘It is easy to say that about oneself.’
The reflexive pronoun in (9) gets assigned the external theta role, because it refers to the original bearer of that external theta role in the (9)’s pre-middle counterpart (look at (4) which shows an example of a pre-middle/middle pair). The fact that the external theta can be reassigned to a reflexive implies that the role is still in the middle because it can be lexicalised in this type of middle. With an inchoative this reassignment of the external theta role is not possible because there is no implied external theta role to lexicalize, therefore adding a reflexive pronoun in such a middle would be ungrammatical, as demonstrated in (10). Sentence (10) shows an inchoative sentence, which is ungrammatical with the reflexive pronoun même.

(10) Quand tout s’effond autour de soi (*même), on perd la tête. INCHOATIVE
When everything REFL collapses around one (*SELF), one loses one’s head
‘When everything collapses around one, one loses one’s head.’

Secondly, it has been argued that middles can use a for-phrase to lexicalise the implied agent role (11a), again showing there is an implied agent role in a middle (Ackema and Schoorlemmer 2005). Sentence (11a) depicts a middle with a for-phrase. The for-phrase voor kleine kinderen implies that the children are the ones closing the door because the sentence states it is easy for the children to close the door, which means they are the agent in (11a).

(11) a. Deze deur sluit makkelijk, zelfs voor kleine kinderen. DUTCH MID.
this door closes easily even for small children
‘Even for small children it is easy to close this door.’

Ackema and Schoorlemmer (2005) also highlight the debate regarding whether the for-phrase is a true lexicalisation of the agent, explaining that it could also be simply an adjunct PP. Broekhuis (unpublished) argues that the DP in the for-phrase is an experiencer of the adjunct modifier and not an argument of the predicate. Moreover, Broekhuis (unpublished) argues that the external theta role is taken out of the verbal framework completely when converted from main clause to middle. Taking sentence (11a) Broekhuis’ theory explains that the small children find something easy, where what exactly the children find easy is not the focus but the fact that they find it easy is the focus. The DP in the for-phrase in Broekhuis’ analysis experiences what is denoted by the adjunct in the middle, whilst in the analysis by Ackema and Schoorlemmer (2005) the DP in the for-phrase is the agent of the predicate in the middle.
Ackema and Schoorlemmer (2005) demonstrate that in line with Broekhuis (unpublished) the for-phrase containing the experiencer role cannot be an argument of the predicate. When the experiencer role has been given to another argument, the for-phrase cannot receive the same role, which means that the for-phrase cannot be considered an argument of the verb. However, if the experiencer is a role given by the adjunct and is not an argument of the verb, as argued by Broekhuis (unpublished), the analysis where the DP in the for-phrase is an experiencer of the adjunct could also be a viable theory. Based on the literature at this time, there is no clear definition available concerning the lexicalisation of the agent of the middle. However, if we assume Ackema and Schoorlemmer (2005) are correct in saying that the for-phrase is agentive and middles do have the implied agent role and inchoatives do not have this role, then it is logical to assume that an inchoative will be ungrammatical when combined with an agentive for-phrase (11b cited from Ackema and Schoorlemmer 2005). Sentence (11b) shows an inchoative with an agentive for-phrase, which has been judged ungrammatical. The ungrammatical judgements strengthens the idea that the middle has an implied agent.

(11) b. Wilde bloemen verwelken makkelijk in een vaas (*zelfs voor ouden van dagen).
   wild flowers wilt easily in a vase (even for OAPs)
   ‘Wild flowers easily wilt in a vase (even for OAPs).’

Thirdly, the absence or presence of an agentive role specifies the interpretation of a modifier (in this case adverb) like ‘easily’. Certain modifiers will work better with an agent role, whilst another modifier works better without one. When there is no agentive role present in a sentence, like an inchoative, ‘easily’ is interpreted as “at the slightest provocation”, consider (12) (Ackema and Schoorlemmer 2005). On the other hand when there is an agentive role present, lexicalised or implied, as in a middle construction, ‘easily’ is interpreted as “not difficult to do” (Ackema and Schoorlemmer 2005), consider (13).

(12) The window broke easily. INCHOATIVE
(13) The judge bribes easily. MIDDLE

Moreover, adverbs in inchoatives and middles act differently syntactically. In inchoative constructions modifiers are optional making both sentences in (14) perfectly acceptable.
(14)  a. The window broke. INCHOATIVE
     b. The window broke easily.

In a middle construction however, removing the modifier creates a bad sentence, consider (15). The middle in (15) needs a modifier because it implies an agent; bribing a judge is easy for someone. The inchoative in (14) does not have an inherent implied agent so it can function without alluding to one with a modifier which is why (14a) is grammatical. Again this analysis shows that middles have an inherent implied agent.

(15)  a. *The judge bribes. MIDDLE
     b. The judge bribes easily.

Lastly, in English the adverb in a middle has a stricter placement, namely it can be placed only at the end of the sentence. The inchoative can place the adverb in front of and after the verb as argued by Fellbaum (Ackema and Schoorlemmer 2005). Compare (16) the middle and (17) the inchoative (as cited from Ackema and Schoorlemmer 2005).

(16)  a. This book reads easily. MIDDLE
(17)  a. Glass breaks easily. INCHOATIVE
     b. Glass easily breaks.

The middle construction in (16b) is ungrammatical because it does not allow the alternative placement of the adverb in front of the verb ‘reads’. This is not the case for an inchoative construction as demonstrated by the grammaticality of (17b).

2.1.5 Summary of Middle Characteristics

All in all, a middle construction demotes the external argument, promoting another DP to the subject position. For regular middles the promoted DP is the direct object (Ackema and Schoorlemmer, 1994, 2005; Lekakou, 2005). For an adjunct middle the promoted DP is the DP in a PP complement (further explained in section 2.3). Despite the DP’s move to the subject position it keeps its original theta role. When converted from main clause to middle,
the sentence keeps an implied agent role, which can be lexicalized by means of a for-phrase (section 2.1.4.2). A middle needs an adverb to modify the verb, and that adverb can only be placed at the end of the sentence, specifically the adverb has to be placed after the verb (section 2.1.4.2).

2.2 Factors Influencing Middle Formation

The previous section defined the regular middle. This section will outline three factors involved with regular middle formation. The three factors that will be discussed are agency, aspectual class, and affectedness. All the factors pertain to the pre-middle sentence, as they influence whether or not that sentence can be converted into a middle. The section is organised as follows. Section 2.2.1 will discuss the influence of Agency, followed by section 2.2.2 which will review the influence of the aspectual classification of the verb. Finally, section 2.2.3 will elaborate on the affectedness condition.

2.2.1 Agency

Theta theory argues that predicates give their arguments a theta role. The external theta role (usually given to the logical subject) can be an agent, actor, or experiencer. The agent role is given to an argument that consciously enforces the predicate (18a), whilst the actor role enforces the predicate in an unplanned manner (18b).

(18)  a. Peter jumped over the fence.        AGENT
      b. Peter screamed.                       ACTOR

The actor and agent role can be grouped more closely together because they enact the predicate, whilst the experiencer does not. The actor and agent will then be grouped as agentive roles. The experiencer role is given to an argument when it experiences the predicate, a more passive role than agent or actor (19).

(19)   Peter felt the rain through his jacket. EXPERIENTER

It has been argued that middle can only be made when the subject in the active construction that is the input to middle formation is agentive (meaning actor and agent) (Ackema & Schoorlemmer, 2004). Compare the examples in (20/21 as cited from Ackema and
Schoorlemmer, 2004). The predicates in (20) have an agentive external theta role, whilst the predicates in (21) have an experiencer role.

(20)  
a. Bureaucrats bribe easily.  
b. That book reads well.  
c. Greek does not translate easily.

(21)  
b. *The answer knows easily.  
c. *Spies don’t recognize easily.

The middles constructed in (21) are ungrammatical, whilst the middles in (20) are grammatical. There is an implied agentive role when interpreting a middle, which seemingly cannot be implied when the pre-middle sentence is non-agentive (like an experiencer). Middles have been argued to be inherently agentive (as cited in Rapoport, 1999), because all pre-middles seem to have an agentive role. Rapoport (1999) argues that the English middle is not agentive but that agency depends on the verb supporting the middle construction. If the middle construction is inherently agentive, agency of the predicate of the middle should not pose a restriction. Ackema and Schoorlemmer (2004) demonstrate this is not the case; agency does pose a restriction on middle formation (see 20/21). This motivates the hypothesis that only agentive verbs can be converted to grammatical middles (Lekakou, 2005; Ackema and Schoorlemmer, 2005; Marelj, 2004).

Ackema and Schoorlemmer (2005) and Marelj (2004), give a more specified account of the agentive constraint. They argue the subject cannot be merely agentive but the external theta role has to be an Actor (the Agent in our analysis) because the argument has to be human and there has to be an element of volition (Lekakou, 2005). Volition refers to whether or not the agentive role has intended the action displayed in the predicate or not. If an agentive role is subject to volition it is an Agent (intentional causer) in our analysis (in 18), if it is not subject to volition it is an Actor (an involuntary causer). They define an Agent as a role with a causer function, whilst the Actor is a role with a causer function and is human (as cited in Lekakou, 2005). We have defined the terms Agent and Actor in the opposite manner¹.

¹ The actor/agent in a middle is considered to be arbitrary, meaning it does not get projected to the syntax (Ackema and Schoorlemmer 2002; Condoravdi, 1989b, as cited in Lekakou 2005.) Arbitrary subjects are naturally human so no need for agent and actor distinction (Lekakou 2005). For this study it is not directly relevant whether a distinction can be made between the actor and agent role. For middle construction, it is
Ackema and Schoorlemmer (2005) give a number of tests to see if the verb has an agent. The first is the \textit{what XP did to YP was P}/\textit{what XP did was P YP} frame, where XP is the agent, YP is the object and P the verb (22 as cited from Ackema and Schoorlemmer, 2005).

\begin{enumerate}
  \item What Mary did was read a good book.
  \item #What most of the students did was know the answer.
\end{enumerate}

The subject of the predicate read has an agentive external theta role so fitting it into the framework (22a) is grammatical. The subject of the predicate ‘know’ is non-agentive and as in (22b) does not fit into this framework.

A second test is the agentive adverb test. An agentive predicate is grammatical when a so-called agentive adverb is added, like intentionally. Intentionally implies an agent role, so it will not function grammatically in a non-agentive sentence (see 23 as cited from Ackema and Schoorlemmer, 2005).

\begin{enumerate}
  \item The Mafia boss intentionally bribed the bureaucrats.
  \item #The tourist intentionally saw the Eiffel Tower.
\end{enumerate}

There are middles that are ungrammatical despite having an agentive subject in the pre-middle sentence. Lekakou (2005) gives a number of middles with agentive pre-middle subjects that have been judged ungrammatically by native speakers, one of which has been cited in example (24).

\begin{enumerate}
  \item *The finish line reaches easily.
\end{enumerate}

The ungrammatical judgement of the middle in (24) indicates that agency, as a factor on its own is not enough to define which predicates can undergo middle formation.

\textit{2.2.2 Aspect}

In the previous section we established that agency was not enough to account for grammatical/ungrammatical middle formation. This section will focus on a second factor that

\footnotesize{\textit{important that the agentive role in the pre-middle clause is a causer, human, and subject to volition. We will continue with the term Agent as the necessary role for middle construction.}}
influences middle formation; aspectual class of the verb. The section is organized as follows. Section 2.2.2.1 will define the four aspectual classes.

2.2.2.1 The Four Aspectual Classes

The aspectual classes have been argued to have great influence on middle formation, because of the qualities each class possesses. There are four aspectual classes, states, activities, achievements, and accomplishments, as outlined by Vendler (1957, 1967 as cited in Rothstein 2004). The aspectual categories were re-examined by Rothstein (2004), which explains that each combine two parameter settings; telic [-/+] and stages [-/+] (Rothstein 2004). The two parameters yield four possible combinations, resulting in the four aspectual classes, see Figure 1 (cited from Rothstein, 2004).

<table>
<thead>
<tr>
<th></th>
<th>[+stages]</th>
<th>[+telic]</th>
</tr>
</thead>
<tbody>
<tr>
<td>States</td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td>Activities</td>
<td>+</td>
<td>−</td>
</tr>
<tr>
<td>Achievements</td>
<td>−</td>
<td>+</td>
</tr>
<tr>
<td>Accomplishments</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

*Figure 1. The four aspectual classes based on the telic and stage parameter.*

The telic parameter refers to the semantic endpoint of a predicate. If it is telic [+telic], there is a clear end implied in the predicate, if not, the verb is atelic [-telic]. Consider the predicate in (25/26).

(25) John built a house in a month.  
     TELIC (ACIEVEMENT)

(26) John built houses for a month.  
     ATTELIC (ACTIVITY)

In (25) John will definitely not build his house again, because it has already been built (in the time span of a month). John in (26) however might continue to build other houses because it does not specify whether the predicate ‘building houses’ has been completed. John in (26) could easily opt to build again after two weeks, whilst John in (25) cannot. As the table from Rothstein (2004) shows the accomplishments and achievements are telic, whilst the states and activities are atelic.
The second property distinguishing the aspectual verb classes is the stages parameter. It refers to whether or not the event denoted by the predicate has been done in stages. Accomplishments and Activities denote events that are done in stages whilst states and achievements do not (27).

(27) a. John built the house.  
     b. John believes in love.

When you consider (27a) the process of building a house can be described in stages: When John builds a house, he first lays the foundation, then he builds the frame etc. The same cannot be done with sentence (27b), John might not have always believed in love, but the current event believing in love is binary, John either does or does not believe in love. The accomplishments and activities are [+stages] and the states and achievements are [-stages].

2.2.2.2 The Aspectual Classes and Middle Formation

It has been proposed that only (transitive) accomplishments and activities can undergo middle formation (Fagan (1992) as cited in Lekakou, 2005; Ackema and Schoorlemmer, 2005). Lekakou (2005) gives evidence in favour of this hypothesis, demonstrating that middles based on states or achievements are indeed considered ungrammatical in Germanic languages. An ungrammatical state middle from Ackema and Schoorlemmer (2005) and ungrammatical achievement middle from Lekakou (2005) have been cited in (28).

     b. * Frans verwerft gemakkelijk.  
     French acquires easily
     ‘French is easy to acquire.’

This section will now review the reasons why one class does convert to a grammatical middle and the other does not.

It seems the telic parameter is not significant for middle formation. Accomplishments and activities possibly convert to grammatical middles but they are not the same regarding the telic parameter. Accomplishments are telic, whilst activities are telic, which means that telicity cannot be a deciding property of the verb regarding middle formation. If the telicity
distinction were to indicate which aspectual classes can undergo middle formation, then the achievements and the accomplishments should be unable to form grammatical middles but that is not the case. The pre-middle/middle pair in example (29) demonstrates that accomplishments make a grammatical middle (Lekakou, 2005; Fagan 1992; Ackema and Schoorlemmer, 2005).

(29)  a. John built the house.   MAIN CLAUSE
     b. The house built easily.    MIDDLE

Therefore, there must be another element accounting for accomplishments and activities being able to become middles, quite possibly the element linking activities and accomplishments; the stages distinction by Rothstein (2004). The stages distinction selects the two correct aspectual classes that have been proposed to make grammatical middles in previous literature. The activities and the accomplishments both denote events that take place over time. Activities denote an ongoing event and accomplishments express an event with a fixed timescale (Ackema and Schoorlemmer, 2005). Middles then require a verb that describes an event done in stages and so is [+stages].

2.2.2.3 Diagnostics Distinguishing the Aspectual Classes

Now that the four aspectual categories have been established, we need to be able to place verbs in those categories by means of diagnostics. The first test is the progressive test, which is language specific as it only works for English. It will distinguish the aspectual classes that can undergo middle formation from the ones that cannot. In other words it will separate the [+stages] classes from the [-stages] classes. Only [+stages] classes can be put in the progressive tense in English. Accomplishments and activities (being [+stages]) can be put in the progressive tense whilst the achievements and states are [-stages] and so cannot be put into the progressive, as the sentences in (30) demonstrate.

(30)  a. *John is knowing the answer.   STATE
     b. *John is recognizing his mother.   ACHIEVEMENT
     c. John is running circles.            ACTIVITY
     d. John is building a house.           ACCOMPLISHMENT
Dutch does not have the progressive tense, but it can use a test that transforms the predicate into a form similar to the English progressive tense. Broekhuis (unpublished) proposes the *aan het* + infinitive test, a test that will separate the [+stages] classes from the [-stages] classes. It is the rough equivalent of the English progressive test. In this test the predicate is made into an infinitive and placed after the phrase *aan het*, which in English loosely translates to the progressive tense. This test shows the same results as English progressive test, as shown in (31).

\[(31)\]
\[
\begin{array}{ll}
  a. & \text{*Peter is het antwoord aan het weten.} \\
      & \text{Peter is the answer knowing} \\
      & \text{‘Peter knows the answer’} \\
  b. & \text{*Peter is zijn moeder aan het herkennen.} \\
      & \text{Peter is his mother recognizing} \\
      & \text{‘Peter recognizes his mother.’} \\
  c. & \text{Peter is rondjes aan het rennen.} \\
      & \text{Peter is circles running} \\
      & \text{‘Peter is running circles.’} \\
  d. & \text{Peter is een huis aan bouwen.} \\
      & \text{Peter is a house building} \\
      & \text{‘Peter is building a house.’}
\end{array}
\]

States and achievements are not compatible with *aan het* when they are in their infinitive form, whilst the accomplishments and activities are. Again, this test distinguishes the states and achievements to be [-stages] and the accomplishments and activities to be [+stages].

Dowty (1979) outlines a number of other tests to distinguish between the aspeccual classes, two of which were used in this study and will be elaborated upon. Firstly, the complement of stop test. This test can be applied to both English and Dutch, which in Dutch would translate to the *houd op met* test. In the stop test, the predicate is put in an infinitive form, and placed after ‘stop’. As can be seen in the sentences in (32), only the achievements will create an ungrammatical construction. Each pair in 32 (meaning 32a/32a’, 32b/32b’ etc.) shows the English and Dutch application of the stop test.

\[(32)\]
\[
\begin{array}{ll}
  a. & \text{Stop believing} \\
      & \text{ENGLISH} \\
      & \text{STATE} \\
  a’ & \text{Houd op met geloven} \\
      & \text{DUTCH}
\end{array}
\]
Stop believing
b. *Stop recognizing ENGLISH ACHIEVEMENT
b’) *Houd op met herkennen DUTCH
Stop recognizing
c. Stop running ENGLISH ACTIVITY
c’ Houd op met rennen DUTCH
Stop running
d. Stop building a house ENGLISH ACCOMPLISHMENT
d’ Houd op met een huis bouwen DUTCH
Stop building a house

Both languages yield the same results and show that achievements do not pass the test, whilst the other classes do. This will help distinguish between the states and achievements after the progressive/aan het test. The final test will distinguish between the accomplishments and activities; the ‘V(P) in an hour’ diagnostic (where the V(P) is the predicate). The ‘V(P) in an hour’ diagnostic again will work for English and Dutch, and places the predicate in front of the phrase ‘in an hour’. If the placement creates a grammatical phrase, it has passed the test, if not, it has not passed. Dowty (1979) states that the accomplishments will give grammatical phrases, but the activities will not. The sentences in (33/34) demonstrate this for English (33) and Dutch (34).

(33) a. Mary painted a picture in an hour ACCOMPLISHMENT
    b. *Mary ran circles in an hour ACTIVITY
(34) a. Marie bouwt binnen een uur een huis ACCOMPLISHMENT
    ‘Mary built a house in an hour’
    b. *Marie aait binnen een uur de kat ACTIVITY
    ‘Mary stroked the cat in an hour’

With these diagnostics, we can distinguish each aspectual class, which is necessary for testing our hypothesis. Additionally, the progressive/aan het test can pick out the aspectual classes that are suitable for middle formation, namely the accomplishments and activities.
2.2.3 Affectedness

The previous two sections generate two key properties involved with middle formation. This section will outline a third factor involved with middle formation; affectedness of the direct object. The section is organized as follows. Sections 2.2.3.1 will define affectedness. Section 2.2.3.2 will explain a particular theory of affectedness by Beavers (2011). Section 2.2.3.3 will apply the theory from the previous sections to middle formation.

2.2.3.1 Defining Affectedness

Affectedness describes to which extent the internal argument of a predicate is affected by the action denoted by that predicate. In other words, affectedness can be defined as the level of change in the complement DP x as a result of the predicate, the bigger the change the more affected the object. Furthermore, affectedness is the relationship between the predicate and complement, which means that affectedness, is dependent on the entire VP and not only the DP complement, (Ackema and Schoorlemmer, 2005).

Jackendoff (1990b) proposes that a sentence can only undergo middle formation when the object of the predicate is a, what they call, patient. A patient is an object that is affected by the predicate (Jackendoff (1990b) as cited in Ackema and Schoorlemmer 2005). Moreover, Jackendoff specifies that the object can only be a patient (the object can only be affected) when the subject of the pre-middle sentence is an agent. He tests this by means of the following diagnostic. If the predicate fits into either of the following two frameworks: what happened to YP was XP V YP or what XP did to YP was (XP) V YP (where YP is the object, XP the subject, and V the predicate), then the object is a patient (or affected object as opposed to unaffected object). Compare (35) where recognize does not take a patient, whilst destroy does (Ackema and Schoorlemmer 2005).

(35)  a. * What the tourists did to the Eiffel Tower was recognize it.
     b. What the Russians and the Americans did to Afghanistan was destroy it.

2.2.3.2 The Degrees of Affectedness Theory by Beavers (2011)

Beavers (2011) developed a theory explaining that affectedness should be considered in a matter of degrees and not as a binary parameter (as with Jackendoff 1999b). He found that intuitively certain direct objects seem less affected by the predicate than others. The examples in (36) illustrate this (cited from Beavers, 2011).
(36)  
   a. John ate the apple up. (Apple is completely gone)  
   b. John cut the apple. (Apple cut, not necessarily to a particular degree)  
   c. John kicked the apple. (Apple impinged, not necessarily affected)  
   d. John touched the apple. (Apple manipulated, not necessarily impinged)  

The sentence in (36d) shows a significantly less affected DO than in (36a). Middle formation is dependent on the DO. The sentences in (36) were converted to middles to create (37), to show the need for degrees of affectedness.

(37)  
   a. The apple eats nicely (Apple is completely gone)  
   b. The apple cuts nicely (Apple cut, not necessarily to a particular degree)  
   c. The apple kicks nicely (Apple impinged, not necessarily affected)  
   d. ?The apple touched nicely (Apple manipulated, not necessarily impinged)  

Sentence (36d) possesses the least affected direct object and when converted into a middle (37d), yields a questionable middle (‘?’ reflects my own judgement as it being questionable/ungrammatical as this theory has not yet been applied to middle formation, therefore, the judgement is not conclusive).

Beavers (2011) then, based on previous literature, constructed four degree of affectedness to account for the discrepancies in the binary idea of affectedness. Each degree of affectedness stands for a different kind of change in the DO of a predicate. The four degrees of affectedness will now be elaborated upon starting with the most affected and ending with the least affected.

Firstly, the most affected degree is quantized change. It shows a predicate that has affected its DO that the change is somehow measurable in object and it has been done in a specific period. It is a physical change or change of state in the object. This definition is demonstrated by the sentence in (38 cited from Beavers, 2011).

(38)  
   a. The soup cooled 5°C in an hour  

The soup in the sentence (38) is measurably different before and after the event. After the event the soup is cooler and specifically 5°C cooler. The specificity of how much the soup has cooled is what gives the event a quantifiable duration and end point. The quantized change
degree can be defined by the telicity diagnostic, meaning the verb denotes an event with an endpoint. Examples (25/26) have been restated below to show a telic and atelic sentence.

(25) John built a house (in a month)          TELIC (ACHIEVEMENT)
(26) John built houses (for a month)          ATELIC (ACTIVITY)

The quantized degree of affectedness always has a telic predicate, meaning the other three degrees are always atelic.

The second degree is non-quantized change, which is similar to the quantized degree in that the object has changed physically or changed in its state of being. Again, the predicate denotes an event over a period of time. Contrary to the quantized degree, the effect the non-quantized degree has on its DO is not measurable. The sentence in (39 cited from Beavers, 2011) shows this definition.

(39) The soup cooled for an hour.

The soup in example (39) has cooled over a one-hour period but how much it has cooled is unclear. The non-quantized degree can be distinguished from the lower degrees by the change entailed of x diagnostic. This test aims to show that a change is seen in the DO x by means of predicate P. It places the phrase but nothing is different about x behind the original sentence. If this creates a contradiction like (40a) it has passed the test, if it creates a semantically correct sentence it has not passed the test like (40b). The predicate cut in (40a) can then be categorised as non-quantized for certain, having passed this test, whilst touched (40b) cannot.

(40) a. John cut the apple #but nothing is different about it
    b. John touched the apple but nothing is different about it.

The third degree of affectedness is potential change. The degree of change in the object in this degree is potentially affected physically. Harking back to sentence in (37c) the predicate kicked the apple is an example of the potential change degree. The apple that has been kicked could be physically different e.g. it could have a dent but that change is not inherent to the verb kicked. The what happened to YP was XP V or what XP did to YP was (XP) V YP (where YP is the object, XP the subject, and V the predicate) distinguishes this degree from the
previous unspecified change degree, compare (41) and (42). If it yields a grammatical sentence it has passed the test, if it generates an ungrammatical sentence it has not.

(41)  a. The Romans destroyed the barbarian city.
       b. What happened to the barbarian city is that the Romans destroyed it.

(42)  a. They followed the star (out of Bethlehem).
       b. *What happened to the star is they followed it (out of Bethlehem)

The sentence (41) shows that destroyed affects its DO more than the predicate followed in (42), making it at least a potential degree of affectedness. The predicate followed can then be classified as unspecified affectedness.

Lastly, the least affected degree of affectedness is the unspecified change degree. This degree does not physically affect the object or alter its state of being. The unspecified change degree depicts a predicate that interacts with its DO but no change is implied. An example of this degree would be sentence (37) from Beavers (2011), which contains the predicate touched the apple. The apple is visibly unchanged after it has been touched. In the previous degree of change, potential change, the apple when affected (e.g. having a dent) the effect would have been visible. The unspecified change degree cannot show a visible effect.

An unspecified change predicate does not pass any of the previous diagnostics set in Beavers (2011) and can only be categorised by its dynamic predicate. A dynamic predicate is a predicate that denotes an event that happen over a period of time. It is similar to the notion of Rothstein’s (2004) stages parameter. Both the stages parameter and dynamic parameter are based on the event denoted by the verb happening over time. Dynamicity is more inclusive because it does not matter how long the period of time described by the verb has to be, it can be one second, or weeks. The stages parameter needs the period of time described to be long enough for the event to occur in stages. The stages parameter and the dynamic parameter therefore analyse the achievements differently. Rothstein (2004) labels the achievements as “near-instantaneous”, arguing they occur over such a short period of time that the event the verb expresses cannot be described in stages. Beavers (2011) employs the dynamic parameter and he classifies the achievements as dynamic. The sentences in (43) demonstrate that the states are non-dynamic, and the achievements, activities, and accomplishments are dynamic.

(43)  a. John believes in love.           STATE
       b. John recognizes his mother.      ACHIEVEMENT
c. John runs circles. ACTIVITY

d. John builds a house. ACCOMPLISHMENT

The sentence in (43a) states a matter of fact binary event. John either believes in love or he
does not but the event itself does not happen over time, indicating that states are non-dynamic
as argued by Rothstein (2004). The next three sentences in (43) all denote events that
happened over a period of time. (43b) shows a very swift event, by Rothstein (2004), which
shows that achievements are dynamic. The sentence in (43c) portrays an event that is ongoing
and so happens over a period of time, despite that time being unspecific; John is running
circles, which could take an hour or a minute, either way it has happened over a period of
time. Lastly, (43d) shows an event happening over a specified period of time; the time it takes
to build one house, indicating that accomplishments are also dynamic. The states and
achievements had already been eliminated for middle formation because of agency/the stages
parameter but the non-dynamic property of the states shows that even if they met the
agency/stages condition they cannot have affected DO’s because they are non-dynamic.

It is important to note that the predicate needs to pass all the tests that have been used
for previous categories, not only the one specific to their category. This yields the following
table showing the degrees and tests (Figure 2 as cited from Beavers, 2011).

<table>
<thead>
<tr>
<th>Diagnostics</th>
<th>Degree of affectedness of ( x ) entailed by ( \phi )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quantized</td>
</tr>
<tr>
<td>( \phi ) is telic</td>
<td>✔</td>
</tr>
<tr>
<td>Change entailed of ( x )</td>
<td>✔</td>
</tr>
<tr>
<td>( x ) takes result XP</td>
<td>✔</td>
</tr>
<tr>
<td>Happened/did to ( x )</td>
<td>✔</td>
</tr>
<tr>
<td>( \phi ) is dynamic</td>
<td>✔</td>
</tr>
<tr>
<td>Result XP variation</td>
<td>Low</td>
</tr>
</tbody>
</table>

*Figure 2. The four degrees of affectedness and diagnostics outlined by Beavers.*

This study applied the four degrees of affectedness outlined by Beavers and added the
unaffected degree to the existing four to cover the non-dynamic predicates. The table in
Figure 3 shows the degrees of affectedness used in this study and how those were labelled
during testing.
2.2.3.3 Affectedness and Middle Formation

Affectedness is important for middle formation because the internal argument plays a key role in regular middle formation. As mentioned earlier, a regular middle is constructed by making the complement DP (the object) the subject of the middle sentence. Ackema and Schoorlemmer (2005) argue that to make a grammatical middle the grammatical subject (the logical object) must be able to account for what the predicate has done to it. The direct object needs possess the characteristics denoted by the predicate. Consider the predicate in (44).

(44) John sliced the apple

The predicate in sentence (44) expresses that it has sliced the apple. The apple undergoes what is stated in the verb, and the effects of that are visible once the slicing has finished. The state of being sliced becomes a visible property of the apple. In other words, it is visibly affected by the predicate.

Ackema and Schoorlemmer (2005; 1994) show that the sentences that do not have an affected object convert to ungrammatical middles, shown in (45 cited from Ackema and Schoorlemmer, 2005). This is in line with the hypothesis that unaffected pre middle objects convert to ungrammatical middles, so affectedness is necessary for middle formation.

(45) a. The tourists recognized the Eiffel Tower. MAIN CLAUSE
a’ *The Eiffel Tower recognizes easily. MIDDLE
b. John knows the answer. MAIN CLAUSE
b’ *The answer knows easily. MIDDLE

The sentences in (45) show middle that has been formed from unaffected objects. Both the middle in (45a) and (45b) are ungrammatical (Ackema and Schoorlemmer, 2005). This is in
line with the hypothesis that unaffected pre middle objects convert to ungrammatical middles, and consequently that affectedness is needed for grammatical middle formation.

Stelmazszczyk (1993) supports the idea that affectedness influences middle formation as he similarly demonstrates that an unaffected DO converts to an ungrammatical middle. The sentences in (46) show an example of an unaffected middle.

(46) a. Peter fears John  
    b* John fears easily

A logical hypothesis could be that if the complement DP of a predicate is unaffected it will have no connection to the verb. So when this DP is placed in the subject position it creates an ungrammatical sentence (Lekakou, 2005). This will be called the affectedness hypothesis.

To expand on the affectedness hypothesis, Beavers’ (2011) theory of affectedness will be applied to middle formation. The theory by Beavers (2011) has not been applied to middle formation before and was not specifically designed for middle formation. However, the role of the direct object and the affectedness of said object has indicated to influence middle formation, which means Beavers’ theory could give more insight into the affectedness hypothesis. This study will apply Beavers’ (2011) theory to middle formation to examine if the theory can be beneficial in understanding restrictions on and conditions of middle formation more clearly. Beavers’ (2011) degrees of affectedness theory implies a hierarchy within affectedness, which predicts a hierarchy in middle formation when. The updated affectedness hypothesis would be; the more affected the DO in the pre-middle sentence, the more grammatical the middle will be judged.

Combining Beavers’ (2011) theory and the aspectual classes, we can construct two more hypotheses. Firstly, the achievements and accomplishments are innately telic, which means they can only be maximally affected, or not at all. The achievements had already been predicted to convert to ungrammatical middles because of the aspectual stages parameter. For middle formation then it means that when fully affected, accomplishments should always convert to grammatical middles based on the affectedness criteria alone, because they always facilitate maximally affected DOs. Secondly, the activities are the only aspectual class that will be able to present verbs in more than one degree of affectedness. This is because only the activities and states are atelic, so theoretically able to be categorized in the quantized, potential, and unspecified change categories. However, Beavers (2011) argues the states are non-dynamic, which means they cannot be subject to affectedness.
2.3 The Adjunct Middle

This section will explain the Germanic adjunct middle. The section is organized as follows. Section 2.3.1 will define the adjunct middle. Section 2.3.2 will compare the adjunct middle to the instrumental subject clause construction.

2.3.1 Defining the Adjunct Middle

The adjunct middle is a variation of the regular middle. Contrary to the regular middle, the adjunct middle uses an intransitive input verb and PP. The active clause that undergoes middle formation consists of an intransitive verb with a PP. The PP can be broken down to a preposition and a DP. The DP without the preposition is moved into the subject position. The transition from pre-middle to adjunct middle is shown in example (47).

\[(47)\]

\begin{align*}
\text{a. Peter zit op de stoel} & \\
& \text{Peter sits on the chair} \\
& \text{‘Peter is sitting on the chair’} \\
\text{b. Deze stoel zit prima.} & \\
& \text{This chair sits fine} \\
& \text{‘This chair is fine to sit in.’}
\end{align*}

However, a subject cannot be derived from every PP. Lekakou (2003) states that only DP’s that are a part of an argumental PP can result in a grammatical middle. This means that the PP must be assigned a theta role and so have a relationship with the verb. Dutch uses this form of the middle, alongside impersonal middles (Lekakou 2003, Broekhuis unpublished, and Ackema and Schoorlemmer 2005), which are not directly relevant to this study. English does not employ this form of middle (Lekakou 2003, Broekhuis unpublished, and Ackema and Schoorlemmer 2005). A similar construction has been found in English by Ackema and Schoorlemmer (2005); the instrumental subject clause. We will look at the differences between the ISC and adjunct middle in the next section.

2.3.2 Instrumental Subject Clause and the Adjunct Middle

The adjunct middle has been suggested to exist in Dutch but not in English. According to Lekakou (2005) the adjunct middle does not exist in English. However, Ackema and
Schoorlemer (2005) have discovered a construction that is similar to the adjunct middle in the manner of construction; the instrumental subject clause. An adjunct middle is constructed by demoting the external theta role and placing DP complement of the PP in the subject position, with an intransitive predicate. The PP here has to be an instrumental argument of the predicate to be able to convert. An ISC construction is created in the same way as a middle, promoting the DP complement of the PP, but is constructed with a transitive predicate base. Ackema and Schoorlemer (2005) have argued that ISC construction cannot be classified as an adjunct middle because they can become transitive in ISC form (48/49).

\[(48)\]
\[\begin{align*}
\text{a. Het mes snijdt gemakkelijk.} & \quad \text{ISC} \\
\text{The knife cuts easily.} & \\
\text{(int.) ‘This knife is easy to cut with’}
\end{align*}\]
\[\begin{align*}
\text{b. Het mes snijdt het brood gemakkelijk.} & \quad \text{ISC} \\
\text{The knife cuts the bread easily.} & \\
\text{(int.) ‘This knife is easy to cut bread with’}
\end{align*}\]

\[(49)\]
\[\begin{align*}
\text{a. De stoel zit lekker.} & \quad \text{ADJUNCT MIDDLE} \\
\text{The chair sits comfortably.} & \\
\text{(int.) ‘The chair is comfortable to sit on’}
\end{align*}\]
\[\begin{align*}
\text{b. *De stoel zit Jan comfortabel.} & \quad \text{ADJUNCT MIDDLE} \\
\text{The chair sits John comfortably.} & \\
\text{(int.) the chair sits on John comfortably}
\end{align*}\]

Secondly, they argue that middles are always stative and cannot occur in an episodic sentence whilst ISC constructions can be episodic, which means that they can pass the what happened diagnostic. This diagnostic places the middle or ISC after the question what happened. If this generates a grammatical sentence, the middle/ISC has passed the test and is episodic, if not, it has not passed the test, and is not episodic. Middles should not pass this test, whilst ISC constructions should, as can be seen in (50). The adjunct middle in (50a) yields an ungrammatical structure when placed after ‘what happened?’, meaning it is not episodic. The ISC example in (50b) is grammatical and is therefore episodic.

\[(50)\]
\[\begin{align*}
\text{a. *What happened? The chair sat comfortably} & \quad \text{adjunct middle} \\
\text{b. What happened? The knife cut the bread easily} & \quad \text{ISC}
\end{align*}\]
Moving back to the PP used in middle/ISC formation, the nature of the adverbial PP could be theoretically specified even more based on Levin and Rappaport’s (1988) study concerning intermediary instruments. An intermediary instrument PP contains a DP that functions as an “intermediary” between the verb and the agent (Levin and Rappaport, 1988). The DP does not simply facilitate the action but is part of the action. Only intermediary instrument PP’s can promote their DP to subject position in English ISC’s, compare (51) and (52).

(51)  a. John cut the bread with a knife INTERMEDIARY PP  
b. The knife cut the bread easily

(52)  a. John ate the soup with a spoon NON-INTERMEDIARY PP  
b. *The spoon ate the soup easily

In the example in (51) John cuts the bread because he is moving the knife, but the knife also cuts the bread as it is literally moving through the bread. The same cannot be said for John and the spoon in example (52). John is eating the soup, but the spoon is not eating the soup. The spoon does not possess the properties denoted by the verb, whilst the knife does.
3. Research Question and Method

This section will combine all the theory from the previous sections and construct a survey that will test the hypotheses deduced from previous literature. Moreover, this section will explain the application and distribution of the survey. The section is organised as follows. Section 3.1 will explain what questions the survey aims to research and how it will do so. Section 3.2 will construct the survey.

3.1 Research Question and Hypothesis

Previous literature shows that agency (section 2.1), aspect (2.2), and affectedness (2.3) influence whether or not a predicate can undergo middle formation. Firstly, this study aims to discover to what extent these three factors influence regular middle formation in English and Dutch. Secondly, it will try to specify the influence of affectedness with regard to middle formation by coupling it with the theory outlined in Beavers (2011), which has not been done before because the affectedness theory by Beavers (2011) was not designed specifically with middles in mind. Thirdly, it will test whether or not the adjunct middle can be found in English. In answer to these questions the following hypotheses were constructed in section two. Firstly, if the pre-middle subject is non-agentive the sentence will convert to an ungrammatical middle. Secondly, the achievements and states will convert to ungrammatical middles because they are [-stages]. Lastly, the more affected the object in the pre-middle sentence, the more grammatical the middle. These hypotheses will be tested by means of a survey.

3.2 The Survey

This section will explain the construction of the survey. Section 3.2.1 will outline the survey structure. Section 3.2.2 will explain the first grammatical judgement task in the survey. Section 3.2.3 will explain the second grammatical judgement task in the survey.

3.2.1 Survey Outline

The survey (see Appendices A and B) consisted of three sections. Section one contained a list of open questions regarding the participant’s background: age, educational background, residence, multilingualism (with regard to a language other than the test language). The information obtained from these questions will give insight into the influence of these factors.
Language change might cause different age groups to judge differently. Locations might be subject to different accents/dialects, which could also influence grammatical judgement. Education might also influence grammatical judgement as schools teach prescriptive language. To get an accurate reading of the grammatical status of middles and adjunct middles we needed to consider the mentioned factors.

Section two and three were grammatical judgement tasks, which entails that the participants judge a list of sentences on grammaticality. The judgement task had a scale answer system, where the participant rated each sentence on a scale of one to five. One was marked as strongly disagree and five marked as strongly agree. All of the judgement questions were phrased as follows for English: a native speaker of English could say x, where x denoted the middle/ISC that should be judged. For Dutch the statement read: een moedertaal spreker van het Nederlands zou het volgende kunnen zeggen x again where x shows the middle/ISC that had to be judged. Initiating a judgement based on free speech instead of grammaticality was important to avoid prescriptive grammar clouding the data. Participants could answer no to the grammaticality of a sentence because they had been taught that in school, whilst answering yes to hearing it in spoken language, because of dialects/accents and the discrepancy between prescriptive and descriptive language. The sentences consisted of regular middle constructions only in grammatical judgement task one, and adjunct middle and instrumental subject clauses, in grammatical judgement task two.

3.2.2 Grammatical Judgement Task One: The Regular Middle

This section will explain the first grammatical judgement task in the survey. It will be divided into two sections. Section 3.2.2.1 will construct a theoretical pool of testable middles based on agency, aspect and affectedness. Section 3.2.2.2 will construct the middle test sentences and explain how the sentences test the hypotheses constructed in section two.

3.2.2.1 Testable Middles

The first grammatical judgement task aimed to uncover which factors, from the three factors (agency, aspect, and affectedness) outlined in section two, influenced middle formation and to what extent. Ackema and Schoorlemer (2005) suggest that a combination of constraints accounts for grammatical middle formation. Therefore, each constraint was cross-referenced with the other two creating every possible combination of constraints given these criteria. We considered two categories regarding agency (non-agent and agent). We determined four
categories in the aspectual classes, following the four aspectual classes. Finally, we used Beavers’ (2011) four degrees of affectedness and added a fifth unaffected class. This would yield forty hypothetical middle constructions combinations, represented in (Figure 3).

<table>
<thead>
<tr>
<th>Agent</th>
<th>Non-Agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
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</tr>
<tr>
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<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>States</th>
<th>Activities</th>
<th>Accomplishments</th>
<th>Achievements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 3. Theoretical Middle Constructions**

Glossary

<table>
<thead>
<tr>
<th></th>
<th>Quantized Degree of Affectedness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Non-Quantized Degree of Affectedness</td>
</tr>
<tr>
<td>3</td>
<td>Potential Degree of Affectedness</td>
</tr>
<tr>
<td>4</td>
<td>Unspecified Degree of Affectedness</td>
</tr>
<tr>
<td>0</td>
<td>Unaffected</td>
</tr>
</tbody>
</table>

Then impossible combinations were eliminated based on the three conditions from the literature. Only the agency and affectedness constraint resulted in impossible combinations but some influences took place as a result of interaction of with the characteristic of the aspectual classes. We will now discuss how these two constraints influenced the theoretical forty middle combinations.

Firstly, the agent condition will eliminate the states from middle formation. The states have a non-agentive pre-middle subject, meaning there are no agentive state verbs. This means that any agentive combination with the states can be eliminated from our forty possibilities.

<table>
<thead>
<tr>
<th>Agent</th>
<th>Non-Agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>States</th>
<th>Activities</th>
<th>Accomplishments</th>
<th>Achievements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 4. Theoretical Middle Constructions (After Agentive State Deduction)**

The activities and accomplishments only occur in a non-agent state when they are intransitive (see 53). The sentence in (53a) shows a non-agentive activity (in the form of an inchoative).
The ball gets a patient role, but is in the subject position; this sentence cannot take a DO because the patient role has already been filled, which makes the sentence in (53a) intransitive.

\[(53) \quad \text{a. The ball rolled} \quad \text{NON-AGENTIVE ACTIVITY}
\]

\[\text{b. *The ball rolled the grass}\]

For middle formation a transitive verb is necessary, which results in the activities and accomplishments not being able to convert to a testable middle when they are non-agentive. The agent condition then made all of the tested predicates in the accomplishments and activities agentive. The possible combinations that were left were put in (Figure 5).

<table>
<thead>
<tr>
<th>Agent</th>
<th>Non-Agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 0</td>
<td>1 2 3 4 0</td>
</tr>
<tr>
<td>States</td>
<td></td>
</tr>
<tr>
<td>Activities</td>
<td></td>
</tr>
<tr>
<td>Accomplishments</td>
<td></td>
</tr>
<tr>
<td>Achievements</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 5. Theoretical Middle Constructions (After all Agency Constraint Deductions)*

Secondly, degrees of affectedness eliminated combinations from all four aspectual classes. Out of the four degrees of affectedness only the quantized degree (the most affected) caters to a telic predicate. The achievements and accomplishments are innately telic predicates (Rothstein 2004). Therefore, there are no examples of the other affectedness degrees when the predicate is an achievement verb or accomplishments verb. Both groups are always maximally affected (quantized change) if they meet the criteria (see the diagnostics for affectedness explained in section 2.2.3) or unaffected if they do not. Achievements that met the criteria to support a maximum affected degree could not be found, which means only unaffected achievements were tested. The telic diagnostic also eliminated the quantized change category from atelic aspectual classes. The activities and states can never be maximally affected because they are atelic. The telic affectedness diagnostic will then convert (Figure 5) into (Figure 6).
The dynamic diagnostic caused the final impossibilities regarding our theoretical test pool of middles. Beavers (2011) proposes that in order to be affected the predicate has to be dynamic, which indicates that if the predicate is not dynamic it is always unaffected. Firstly, this rules out the affected non-agentive options within the states. The states are non-dynamic which means they cannot be affected. Secondly, the dynamic diagnostic suggests that activities, achievements, and activities can never be unaffected, because they are inherently dynamic predicates. This analysis poses a problem for the achievements because according to the elimination process of this section the achievements cannot be classified. The dynamic diagnostic implies that the achievements cannot be considered unaffected.

To resolve this issue we propose that the dynamic test in Beavers (2011) be replaced by the stages parameter from Rothstein (2004). The stages parameter categorizes the accomplishments and activities as [+stages] in sync with the dynamic label by Beavers but it does not categorize the achievements as [+stages], whilst the achievements are labelled dynamic. Rothstein’s (2004) addition would leave the achievements free to be categorized as unaffected, which gives them a possible categorization rather than no categorisation with Beavers (2011). This theory was also tested in the survey but Beavers (2011) was followed and one achievement middle was tested, from which we could conclude whether or not it could group together with the unaffected degree.

All in all, after all of the conditions had been applied it yielded a total of six viable middles per language to test as can be seen by the open spaces in (Figure 7) added to the one achievement middle that would be tested.

![Figure 6. Theoretical Middle Constructions (after Telicity Deductions)](image)

![Figure 7. Theoretical Middle Constructions (After All Deductions)](image)
To ensure credibility of the judgement each hypothetical middle combination would be realized with two examples per combination, which would result in a total of twelve.

3.2.2.2 The Tested Middles

The previous section yielded six combinations of the agency, aspect, and affectedness conditions that had to be tested in the form of a middle. An example of each combination has been listed below combined with an explanation as to how this sentence tests the hypotheses from section two. The examples were taken from the English survey but each example had a Dutch mirror in the Dutch survey, which served to test the same hypotheses.

The first combination that was tested was the state, non-agentive, unaffected middle, stated in example (54).

(54) The answer knows easily

This middle will test whether agency and/or affectedness are necessary for middle formation because it has no agent and is unaffected in its pre-middle form. If the native speakers judge unaffected/non-agentive middles to be grammatical, it suggests that affectedness/agency are not necessary for middle formation.

The next combinations concerned the agentive activity middle. The agentive activity middle was combined with three degrees of affectedness (see Figure 7) non-quantized change, potential change, and unspecified change. An example each combination can be seen in (55).

(55) a. Teacups break easily. NON-QUANTIZED CHANGE
    b. A spear throws easily. POTENTIAL CHANGE
    c. A cat pets easily. UNSPECIFIED CHANGE

All these middles test the same parameters. These middle combinations tested if the stages parameter is an accurate predictor of middle formation (which predicted that activities and accomplishments would become grammatical middles). If activity middles in general are judged grammatical, it indicates that the stages parameter is a predictor of middle formation. It will test the influence of degrees of affectedness on middle formation. If all degrees are judged similarly within the activities (with no other variables), the score indicates that degrees
of affectedness are not necessary for middle formation. If on the other hand each degree is judged differently within the activities, the judgement supports that there is a hierarchy of affectedness that influences middle formation. Finally, this middle will test the agency condition, as it is agentive. If the agentive middles in general are judged grammatical, the judgement suggests that agency is a predictor of grammatical middle formation.

The next combination that was tested was the agentive, quantized change, accomplishment middle, shown in (56).

(56) The cigarette smokes nicely.

This middle combination will also test the stages parameter, this time based on the accomplishments (which are [+stages]) instead of the activities. If the accomplishments are judged grammatical and the activities are not, the stages parameter is not a predictor of grammatical middle formation. If the activities are judged grammatical and the accomplishments are not, the judgement again suggests that the stages parameter is not a predictor for grammatical middle formation. If both the accomplishment and activity middles are judged grammatical, the data supports the stages parameter as a predictor of grammatical middle formation. Similar to the activity middles this middle combination will test agency. If all agentive middles are judged grammatical, the data supports the hypothesis that an agentive pre-middle subject will convert to a grammatical middle. Lastly, it will test the affectedness condition. The accomplishment middles are the only middles that can be undergo quantized change of their pre-middle DO. In other words they are the only middles that have a maximally affected DO in subject position. The hierarchy of affectedness hypothesis predicts that accomplishment middles should be judged the most grammatical. If they are not, the judgement suggests that a hierarchy as Beavers (2011) has defined it is not applicable to middle formation.

The last combination that was tested was the agentive achievement middle, shown in example (57).

(57) The man recognizes easily.

As it stands the achievement middles could not be categorised into any form of affectedness as was explained in the section 2.2.3 but the judgement data will reveal if it can be grouped into one of the categories. The achievement middles will test the stage parameter. If the
achievement middle is judged grammatical, the stages parameter is not sufficient in predicting middle formation based on aspectual class. An ungrammatical judgement of the achievement middle suggests that stages parameter is a correct predictor of grammatical middle formation.

3.2.3 The Grammatical Judgement Task Two: ISC and Adjunct Middle

This section will elaborate on the construction of the second judgement task in the survey. It will be divided into two sections. Section 3.2.3.1 will explain and outline the ISC and adjunct middle judgement task. Section 3.2.3.2 constructs the adjunct middle and ISC test sentences and explains how the sentences test the hypotheses constructed in section two.

3.2.3.1 Adjunct Middle and ISC Judgment Task Outline

The second grammatical judgement task aims to answer the question: does the adjunct middle exist in English and Dutch, or only in Dutch? ISC constructions have been argued to be a middle and not be a middle, but most importantly they have been indicated to be grammatical in English and Dutch. Adjunct middles and ISC construction are both constructed by promoting the DP in a PP to the subject position. However, the ISC uses a transitive verb as its base. If English does not allow adjunct middles, English native speakers should judge ISC constructions grammatical and adjunct middles ungrammatical, whilst Dutch should judge both ISC constructions and adjunct middle grammatical. Ten ISC sentences were constructed, both in their transitive and intransitive form, and were placed in the survey. Only five adjunct middles were formed, because they cannot become transitive, so only middles with an intransitive pre-middle verb were formed. This yields a total of three categories that were tested: transitive ISC, intransitive ISC, and intransitive adjunct middle. If the literature is correct English should not have adjunct middles, but should have ISC constructions, and Dutch should have both.

3.2.3.1 Tested Adjunct Middles and ISC constructions

The second judgement task covered three categories established in the previous section; transitive ISC, intransitive ISC, and intransitive adjunct middle. Each category was tested by five examples. One example of each category will be discussed below to illustrate how the examples will test the hypotheses from section two.

Firstly, the transitive and intransitive ISC construction will be explained. An example of each is shown in (58).
(58)  
a. The knife cuts the bread easily.  TRANSITIVE  
b. The knife cuts easily.  INTRANSITIVE  

The ISC construction will test whether or not the ISC construction is grammatical in English. Moreover, the ISC could advocate in favour of the ISC and adjunct middle distinction, if the adjunct middle and ISC are judged differently. The transitive and intransitive distinction within ISC construction is tested to cover all the theoretical ISC combinations and it could indicate a different classification of these groups. For instance, if the intransitive ISC and intransitive adjunct middle are judged similarly but the transitive ISC is not, then the current ISC and adjunct middle categorization is inaccurate.

The example in (59) shows an intransitive adjunct middle and this will test whether adjunct middle can be used in English and Dutch, only Dutch, or only English.

(59)  De stoel zit comfortabel.  
   The chair sits comfortably  
   ‘The chair is comfortable to sit on.’  

If the native speakers of Dutch judge the adjunct middle examples grammatically, this indicates that the adjunct middle is grammatical in Dutch. The same can be argued for the English native speakers, if they judge the adjunct middle examples grammatical, it suggests that the adjunct middle is grammatical in English.
4. Results

This section will present the data collected with the survey constructed in sections three. The section will be organized as follows. Section 4.1 will describe how the raw data from the survey was analysed and processed. Section 4.2 will present the data in relation to the hypotheses constructed in section two.

4.1 Analysing the Survey Data

The data retrieved from the surveys gave scores based on the one to five scale explained in the previous section. In order to make the values accurately comparable, the average score of each participant across all of the judgement tasks was calculated. The average was aligned with zero and the other scores recalculated in reference to the zero mark. This was done by subtracting the average score from each raw score, making each value positive, negative, or equal to the participant’s average value. The averaging was necessary because the raw scores could give false positives or negatives. Consider the following example to illustrate a false score. Participant one scores middle one a four on the one to five scale, with an average of three. Participant two scores the same middle a three but has an average score of two. This scoring data is shown in Figure 8.

<table>
<thead>
<tr>
<th>Participant One</th>
<th>Participant Two</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle One</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

*Figure 8. Example raw scores*

The raw scores suggest that participant one scored the middle more positively than participant two. When we deduct the average scores from the raw scores for each participant we get the following scores; participant one 1 vs. participant two 1. The new scores then indicate that both participants score the middle equally; participant one is simply an overall more lenient scorer. Moreover, the false positive will also translate to the overall scoring of the middles without personal averaging. The average of a raw 1-5 scoring system is three. This would suggest that the middle is scored 0,5 above the average using the scores from Figure 8. Using the averaged scores however, the middle was scored one above average. The latter score would result in a more grammatical judgement score than the first score. Therefore, the personal averaging is necessary because the raw scores could indicate an inaccurate judgement.
This study took the average as a neutral value and everything that deviated from that value was considered grammatical or ungrammatical to an extent depending on the calculated scores (see Figure 1 and Figure 2). If the value was positive, it was scored more positively than the average and so considered grammatical to some extent. If the value was negative, then it was considered ungrammatical to some extent. The more the value deviates from the zero point, the more grammatical or ungrammatical the sentence was judged.

Regarding judgement task one, each tested middle was a specific combination of the three factors agency, aspect, and affectedness. This meant that each middle facilitated data for each factor. Each factor will be discussed in the following per language in the following sections. For this analysis it is important to state that the data for each factor represents all the tested middles from judgement task one.

4.2 Score results and hypotheses

The previous section described how the data collected by means of the surveys was analysed. The following section will present the data from the surveys. This section will be divided into three sections. Section 4.2.1 will analyse the data from the English participants in relation to the hypotheses. Section 4.2.2 will analyse the date from the Dutch participants based on our hypotheses. Sections 4.2.3 will point out the key differences between the Dutch and English Data.

4.2.1 The English Results

This section will present the data regarding the English survey. It will consider each of the three properties from section two; agency, aspectual class, and affectedness. Then it will elaborate on adjunct middles and ISC construction. Lastly, it will consider the background factors; age, location and education. Section 4.2.1.1 will analyse the data on agency. Section 4.2.1.2 will present the data for the aspectual classes. Section 4.2.1.3 will explain the data regarding the affectedness condition. Section 4.2.1.4 will reveal the data on adjunct middles and ISC constructions. Section 4.2.1.5 will elaborate on the influence of the background factors on the data.

4.2.1.1 The Results for Agency

Overall the data confirmed the hypothesis that an agentive subject in the pre-middle sentence is necessary for grammatical middle formation. The non-agentive middles were scored
significantly lower than the agentive middles (by agentive we mean that the pre-middle sentence had an agentive subject). The graph in Figure 10 shows this difference.

![Average Scores Agent/Non-Agent Middles](image)

**Figure 10.** Average scores for agent/non-agentive middles

Figure 10 shows that the non-agent middles have been scored much more negatively, which means that they were considered to be less grammatical than the agentive middles. Both the agentive and non-agentive middles were scored negatively overall.

### 4.2.1.2 The Results for the Aspectual Classes

The activities were judged most positively, which translates to them being considered the most grammatical. The states were judged the least grammatical as they were received the most negative average score as can be seen in Figure 11.

![Average Scores Middles per Aspectual Classes](image)
Figure 11. Average grammatical judgement scores for the middles in each aspectual class.

The graph in Figure 11 shows the average scores for middles from each aspectual class. The achievement, activities, and states all reflected the literature. The activities were judged with positive value (also called positively throughout this study). The states and achievements were judged with a negative value (negatively). The accomplishment scores did not reflect the literature. The accomplishment middles were predicted to score the most positively out of all the aspectual classes because they satisfied each condition the most. The accomplishments are [+stages], agentive, and maximally affected. This could be explained by the discrepancy in scoring that was found in the English accomplishment middles. The accomplishment middle the house builds easily was judged significantly less grammatical than the other accomplishment middle the cigarette smokes nicely (the house builds easily –0.90 vs. the cigarette smokes nicely 0.36).

4.2.1.3 The Results for Affectedness

The grammatical judgement based on degrees of affectedness showed that the non-quantized degree was considered the most grammatical, as can be seen in Figure 13.

Figure 13. The average grammatical judgement score for the middles in each degree of affectedness.

Figure 13 shows the average judgement scores per degree of affectedness over all the middles in judgement task one. The quantized degree of affectedness was predicted to be judged the most grammatical but this is not the case. It is judged grammatical but not the most
grammatical as predicted. The data shows that there is no significant judgement difference between the unspecified degree of affectedness and the unaffected degree, which indicates that these two degrees might effectively be one degree.

4.2.1.4 The ISC and Adjunct Middle

The ISC constructions were judged grammatical overall, whilst the adjunct middles were judged ungrammatical overall, as can be seen in Figure 12. This is in line with the hypothesis that English does not employ the adjunct middle.

![Average Scores Adjunct Middle/ISC](image)

*Figure 12. Average scores for the adjunct middles and ISC constructions*

4.2.1.4 The Influence of Age and Location

This section will present the results of the age and location factor with regard to scoring patterns. It will first discuss the geographical data and then move on to the data on age. There was a wide range of locations among the participants regarding their longest resided city of residence. The twenty-seven eligible participants covered Scotland, Ireland, England, Isle of Man, Australia, and Italy. The number of participants per country has been shown in Figure 14.

---

2 The data for education was too inconsistent to be able to categorize, due to open question formatting. Therefore, no results could be obtained from the raw education data.
Ireland, the Isle of Man, Australia, and Italy all had only one participant in their group. The data from these areas can then not be used as a definitive base for conclusions because one participant is too little to be representative of that area. The majority of participants were located in England. Even within England the geographical distribution of participants was wide, indicating that influence of local dialect/accent markers is unlikely (with 10% of England based participants having resided most of their life in Yorkshire). The participants were grouped together by UK region and compared on their scores, which is shown in Figure 15.

**Figure 14.** The number of participants per country for the English survey.

**Figure 15.** The number of participants per region in England.
Figure 15 shows that the largest number of participants was located in the North West of England. East Anglia, the South West, the South East, again only had one participant in that region which is too small to give representative data.

The average scores per country showed that Scotland was the overall highest scorer. The average scores per country are shown in a table in Figure 16.

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of participants</th>
<th>Average Score Overall</th>
<th>Average Score Task 1</th>
<th>Average Score Task 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>19</td>
<td>2.45</td>
<td>-0.135</td>
<td>0.12</td>
</tr>
<tr>
<td>Scotland</td>
<td>2</td>
<td>2.93</td>
<td>-0.43</td>
<td>0.29</td>
</tr>
<tr>
<td>Ireland</td>
<td>1</td>
<td>1.85</td>
<td>-0.31</td>
<td>0.21</td>
</tr>
<tr>
<td>Isle of Man</td>
<td>1</td>
<td>1.96</td>
<td>-0.24</td>
<td>0.16</td>
</tr>
<tr>
<td>Australia</td>
<td>1</td>
<td>2.37</td>
<td>-0.1</td>
<td>0.07</td>
</tr>
<tr>
<td>Genoa (Italy)</td>
<td>1</td>
<td>2.59</td>
<td>-0.14</td>
<td>0.09</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>2.56</td>
<td>-0.37</td>
<td>0.26</td>
</tr>
</tbody>
</table>

*Figure 16. The average scores per country for the English survey participants.*

Figure 16 shows the average scores overall and the scores for the two judgement tasks separately. Overall Scotland had the highest average score, whilst Ireland had the lowest average score. This indicates that the Scottish overall are more positive scorers than the Irish. The Scottish were the most negative scorers when it came to scoring task one. They also had the most positive score in the scores for task two.

The region scores for England are shown in Figure 17.

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of participants</th>
<th>Average Score</th>
<th>Average Score Task 1</th>
<th>Average Score Task 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>North-East</td>
<td>2</td>
<td>2.59</td>
<td>-0.14</td>
<td>0.09</td>
</tr>
<tr>
<td>North-west</td>
<td>7</td>
<td>2.25</td>
<td>-0.09</td>
<td>0.06</td>
</tr>
<tr>
<td>Yorkshire &amp; The Humber</td>
<td>2</td>
<td>2.43</td>
<td>0.07</td>
<td>-0.05</td>
</tr>
<tr>
<td>East Midlands</td>
<td>3</td>
<td>2.64</td>
<td>-0.22</td>
<td>0.15</td>
</tr>
<tr>
<td>East Anglia</td>
<td>1</td>
<td>2.30</td>
<td>-0.3</td>
<td>0.20</td>
</tr>
<tr>
<td>South West</td>
<td>1</td>
<td>2.81</td>
<td>0.09</td>
<td>-0.06</td>
</tr>
<tr>
<td>South East</td>
<td>1</td>
<td>2.41</td>
<td>-0.41</td>
<td>0.34</td>
</tr>
<tr>
<td>London</td>
<td>2</td>
<td>2.17</td>
<td>-0.08</td>
<td>0.20</td>
</tr>
</tbody>
</table>

*Figure 17. The average grammatical judgement scores per region in England.*

The South West and Yorkshire and the Humber were the only areas to score positively on average for the first judgement task. These two regions were also the only groups to score positively on average for the second judgement task. All other groups scored the first judgement task negatively one average, and the second judgement task positively on average.
Age analysis yielded no significant differences. The age groups were set in increments of ten years. The table in Figure 18 shows the average scores overall and per task one and task two.

<table>
<thead>
<tr>
<th>Age group</th>
<th>Number of Participants</th>
<th>Average Score</th>
<th>Average Task One</th>
<th>Average Task Two</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>0</td>
<td>/</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td>10-20</td>
<td>7</td>
<td>2.67</td>
<td>-0.10</td>
<td>0.07</td>
</tr>
<tr>
<td>20-30</td>
<td>18</td>
<td>2.36</td>
<td>-0.22</td>
<td>0.15</td>
</tr>
<tr>
<td>30-40</td>
<td>1</td>
<td>2.3</td>
<td>-0.30</td>
<td>0.20</td>
</tr>
<tr>
<td>40-50</td>
<td>1</td>
<td>1.89</td>
<td>0.02</td>
<td>-0.01</td>
</tr>
</tbody>
</table>

Figure 18. The average scores per age group for the English survey participants.

There were no participants over the age of fifty that responded to the English survey. The majority of the participants were in the age group 20-30. The mean age was 22. The age group 40-50 had an average positive score for judgement task one and a negative score for judgement task two, whilst the other three groups score vice versa. There was also no clear positive or negative progression from the lower age groups to the higher age groups.

4.2.2 The Dutch Results

This section will present the data regarding the Dutch survey. It will consider each of the three properties from section two; agency, aspectual class, and affectedness. Then it will elaborate on adjunct middles and ISC construction in. Lastly, it will consider the background factors; age, location and education. Section 4.2.2.1 will analyse the data on agency. Section 4.2.2.2 will present the data for the aspectual classes. Section 4.2.2.3 will explain the data regarding the affectedness condition. Section 4.2.2.4 will reveal the data on adjunct middles and ISC constructions. Section 4.2.2.5 will elaborate on the influence of the background factors on the data.

4.2.2.1 The Results for Agency

Overall the data confirmed the hypothesis that an agentive subject in the pre-middle sentence is necessary for grammatical middle formation. The non-agentive middles were scored significantly lower than the agentive middle. The average scores for the agentive and non-agentive middle from the Dutch survey are shown in Figure 19.
Figure 19. The average grammatical judgement scores for the agentive and non-agentive middles.

Figure 19 shows that the agentive and non-agentive middles were scored negatively overall, which indicates that the agency condition is not enough to predict grammatical middle formation. This result suggest that the hypothesis stating agency, aspect, and affectedness are necessary for predicting grammatical middle formation is correct.

4.2.2.2 The Results for the Aspektual Classes

All the aspectual classes were judged negatively on average, which indicates that the stages parameter on its own is also not enough to account for grammatical middle formation. The average scores per aspectual class are shown in Figure 20.

Figure 20. The average grammatical judgement scores for the middles in each aspectual class.
The states and activities scores are in line with the hypothesis that states and achievements (which are [-stages]) do not convert to grammatical middles. The accomplishments pose a particular discrepancy with the literature. They were predicted to be judged the most grammatical so the most positive but Figure 18 shows that the activity middles have the least negative score. The achievement middles are also judged to be less ungrammatical than the accomplishment middles. The accomplishment data indicates that the stages parameter is unfit to predict grammatical middle formation because the accomplishment middles (which are [+stages]) are judged to be more ungrammatical than the achievement middles (which are [-stages]).

4.2.2.3 The Results for Affectedness

The grammatical judgement of the middles per degrees of affectedness showed that the non-quantized degree was considered the most grammatical, as is shown in Figure 20.

![Average Scores Affected Middles](image)

*Figure 20. The average grammatical judgement score for the middles in each degree of affectedness.*

Figure 13 shows the average judgement scores per degree of affectedness over all the middle in judgement task one. The quantized degree of affectedness was predicted to be judged the most grammatical but this is not the case. It is judged ungrammatical. The Dutch data shows that they considered the third degree of affectedness, potential change, to be more grammatical than the quantized degree. The data in Figure 20 also shows that the unspecified and unaffected degree group together again.
4.2.2.4 The Results for the ISC and Adjunct Middle

The results for the adjunct middle and ISC construction are in line with the research from previous literature. The adjunct middle and ISC construction were both judged grammatical in Dutch. This data is shown in Figure 21 and supports the hypothesis that adjunct middles and ISC constructions occur in Dutch.

![Figure 21. Average scores for the adjunct middles and ISC constructions](image)

4.2.2.5 The Influence of Age and Location

The Dutch participants were all located in the Netherlands. The locations did not cover all the provinces in the Netherlands. The covered provinces and the number of participants in those provinces are shown in Figure 22.

![Figure 22. The number of participants per province in the Netherlands](image)
The majority of the participants were located in Gelderland. For the province Zeeland and Noord-Holland only one participant was recorded. One test subject is not representative of an area because that test subject might be the exception to the rule. Therefore, no decisive conclusions can be drawn from the data from Zeeland and Noord-Holland. Figure 23 shows the average scores overall, and for task one and two separately.

The Utrecht participants had the highest average score overall, whilst the Zuid-Holland group had the lowest average score. The Utrecht group scored judgement task one the least negatively. The participants in the North-Brabant group scored most negatively in judgement task one and also most positively in judgement task two. The province Zuid-Holland judged judgement task two the least positively.

Regarding the influence of age, there was no logical positive or negative progression through the age groups. The majority of the participants were part of the age group 20-30. The mean age was 29. The average scores per age group are shown in Figure 24.

The data collected from the Dutch participants covered ages 9-61. The 30-40 age group showed a significantly less negative judgement for task one and significantly less positive score for judgement task two. Overall the data for both languages showed a pattern
similar to the regional results; if they scored very negatively in judgement task one they would score more positively in judgement task two.

4.2.3 A Comparison of Dutch and English

This section will briefly discuss the major difference and similarities between Dutch and English. Overall, the Dutch native speakers scored all regular middles and ISC constructions less grammatical in comparison to the English native speakers. The discrepancy between Dutch and English was consistent. When that judgement discrepancy was removed the English and Dutch native speakers generated roughly the same patterns in all judgements regarding the regular middle and ISC construction. The section will now elaborate on specific areas that were tested in the survey (in this order): agency, aspect, affectedness and adjunct middle/ISC.

Firstly, both languages judged the non-agentive middle less grammatical than the agentive middle. The English native speakers judged the agentive middles positively, which would translate to a grammatical judgement. The Dutch participants judged the agentive and the non-agentive middle negatively, translating to an ungrammatical judgement of the agentive middles.

Secondly, both the English and Dutch native speakers judged the states, achievement, and accomplishment middle ungrammatical but they were judged more ungrammatical by the Dutch native speakers than the English. Additionally, the activity middles were judged grammatical in English and ungrammatical in Dutch.

Thirdly, the judgement of the most affected degree, the quantized degree, was judged ungrammatical in Dutch but grammatical in English. Both languages followed a similar scoring pattern on all of the other degrees.

Lastly, the ISC constructions were judged grammatical by both Dutch and English native speakers. The Dutch native speakers judged the ISC less grammatical than the English native speakers. The English native speakers judged the adjunct middles ungrammatical, whilst the Dutch native speakers judged the adjunct middles grammatical.


5 Discussion

This section will run through the results, elaborating on what these results add to answering the research questions established in the introduction of this paper and the impact they had on the tested hypotheses\(^3\). The section will be organized as follows. Section 5.1 will analyse the result on the agency condition. Section 5.2 will consider the results regarding the aspectual classes. Section 5.3 will explain the results focussed on the affectedness constraint. Section 5.4 will interpret the results pertaining to the adjunct middle and ISC construction. Lastly, section 5.5 will discuss the influence of location and age on the results.

5.1 Analysis of the Agency Condition

As predicted the agentive middles were considered more grammatical than the non-agentive middles in both languages. However, the agentive and non-agentive middles were judged ungrammatical overall, also in both languages. The more grammatical judgement of the agentive middle in comparison to the non-agentive middle does support the hypothesis that an agentive pre-middle subject is preferable for grammatical middle formation. The negative judgement of the agentive middle indicates that the agency condition is not enough to predict grammatical middle formation. This result is in line with the hypothesis that the three factors; agency, aspect, and affectedness are necessary for predicting grammatical middle formation. The agentive and non-agentive middles were judged more ungrammatical in Dutch than in English. This suggests that Dutch native speakers find regular middles in general a less grammatical sentence structure because both the agentive and non-agentive middles were judged more ungrammatical.

5.2 Analysis of the Aspectual Classes

Firstly, the state, achievement, and accomplishment middles were judged to be ungrammatical overall by both English and Dutch native speakers but English participants again judged these three aspectual class middles less negatively than the Dutch. The activity were also judged more negatively by the Dutch. The Dutch judged the activity middles ungrammatical, whilst the English judged the activity middles grammatical. The difference between the Dutch and English activity middle judgement is not significantly larger than that of the other aspectual

\(^3\) The discussion will use the English middles as examples to illustrate the analysis but the analysis will be relevant to both English and Dutch since the results established that the scoring patterns for English and Dutch native speakers were significantly similar.
classes. We can deduce then that all classes were judged to make more ungrammatical middles in Dutch than in English. This indicates again that the regular middle is more grammatical in English than in Dutch. Moreover, it suggests that the stages parameter by Rothstein (2004) on its own is not sufficient for predicting grammatical middle formation. If this parameter were enough, the accomplishment and activity middles should have been judged grammatical in both languages.

Secondly, the accomplishment middles posed an issue relevant to both languages. The middles derived from accomplishment predicates were predicted to be the most grammatical, yet they were judged ungrammatical by both Dutch and English native speakers. These results are at odds with the hypothesis that accomplishments and activities convert to grammatical middles. The results then also suggest that either the stages parameter is not relevant for middle formation or that affectedness influenced the grammaticality of the accomplishment middles.

The two accomplishment middles were assumed to be fully affected because they are telic and dynamic predicates. The fact that accomplishments are telic meant that they could only undergo the quantized (maximum) degree of affectedness or be unaffected. The fact that the accomplishments are dynamic meant that they could not be unaffected. The fourth degree of affectedness, unspecified change, was defined by its dynamic predicate because it had failed all other affectedness diagnostics. This indicated that the unaffected category would be non-dynamic. However, the data on the accomplishments suggests that this could not be the case because one accomplishment was judged much more grammatical than the other (see Appendices C and D). The only variable that could be deduced was the difference in affectedness.

The accomplishment middle the house builds easily (the more ungrammatical accomplishment middle) was retested based on the other affectedness diagnostics from Beavers (2011). Example (60) shows the change entailed of x test, the what happened to x and the result XP test were applied to the predicate build a house. These tests both should have been passed if the predicate was maximally affected.

(60)  
  a. John built the house #but nothing is different about it \(\text{change of } x\)  
  b. *What happened to the house is John built it \(\text{what happened to } x\)  
  c. *John built the house into a sturdy construction \(\text{result } XP\)

The change entailed of x test aimed to show that a change is seen in the DO x by means of
predicate P. It places the phrase nothing is different about x behind the original sentence. If this creates a contradiction like it has passed the test, if it does not it has failed the test. Example (62a) fails this test. The what happened to x test puts the tested sentence into the following framework (recall that the pre-middle sentences are tested not the middle); what happened to YP was XP V YP (where YP is the object, XP the subject, and V the predicate). Example (62b) yields an ungrammatical sentence meaning it has not passed the test. The result XP test places a phrase that depicts the result of the event denoted by the verb behind the sentence. This result has to be a characteristic of the object. To illustrate the result XP test, an example is shown in (61)

(61) John built the wall red.

The adjective red is a characteristic of the wall once John has painted it, so red can be categorized as a result XP. If the adding of a result XP yields a grammatical sentence it has passed the test, if it yields an ungrammatical sentence it has not. Example (63c) demonstrates that the predicate build a house does not pass the result XP test. All in all, this means that the predicate build a house cannot be maximally affected.

Beavers (2011) argues that the creation predicates (as he labels them) such as build a house need to conform to the prior existence condition. The prior existence condition specifies that for a verb to pass the what happened to x test and the result XP test the object must exist before the event in the verb has taken place. Beavers (2011) illustrates this hypothesis by changing build to rebuild. Rebuild implies that the object that is being rebuilt has been built before. Example (64) shows that indeed the predicate rebuild, which does meet the prior existence condition, does pass the what happened to x and result XP test.

(62) a. What happened to the house is John rebuilt it what happened to x
    b. John rebuilt the house into a sturdy construction result XP

The prior existence condition indicates that a part of the accomplishments cannot be categorized by the four degree theory by Beavers as it is. As a result Beavers’ theory cannot accurately predict grammatical middle formation on the basis of affectedness. To resolve this issue the prior existence condition could become a part of the diagnostics for affectedness. This would create another degree between potential and unaffected degree. However, the telic parameter then becomes an issue as only quantized change predicates (maximally affected)
can be telic. A test could not be established what would account for this issue and the distinctions it needed to make.

5.3 Analysis of the Affectedness Condition

Affectedness posed the most difficult to test and analyse. Figure 25 shows the four degrees of affectedness by Beavers (2011) and the unaffected degree as they were used in this study. This will help navigate through the analysis in this section.

<table>
<thead>
<tr>
<th>The Degrees of Affectedness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Quantized Change/Quantized</td>
</tr>
<tr>
<td>Non-Quantized/Non-Quantized</td>
</tr>
<tr>
<td>Potential Change/Potential</td>
</tr>
<tr>
<td>Unspecified Change/Unspecified</td>
</tr>
<tr>
<td>Unaffected</td>
</tr>
</tbody>
</table>

*Figure 25. The degrees of affectedness used in this study.*

On average, the affectedness hierarchy posed by Beavers (2011) was supported by the data collected in both languages, with exception of the quantized degree of affectedness. The more affected the DO in a degree the more grammatical it was judged, except for the most affected degree (the quantized degree). The quantized degree of affectedness was solely tested by the accomplishment middles as they were the only middles that were maximally affected. Therefore, a reason for out of pattern judgement of the quantized degree could be rooted in the accomplishment middle issue outlined in the previous section. It could be argued that the accomplishments undergo another constraint because they were the only group tested in the quantized change degree. Further testing of the accomplishment middle will be necessary to confirm or deny this hypothesis. It could also be argued that there is another condition pertaining to middle formation that has not been discovered yet. No definitive solution within the presented literature could found for this issue. As a result, this study can conclude that the hierarchy of affectedness posed by Beavers (2011) is only applicable to the non-quantized, potential, and unspecified change degree but not applicable to the quantized degree.

Furthermore, general analysis of affectedness demonstrated that again the English participants judged the all the degrees of affectedness to be more grammatical when compared to the Dutch. This indicates that overall the regular middle is more grammatical in English than in Dutch. The analysis will now continue with degree specific analysis.
The non-quantized change degree was judged based only on agentive activity middles. The non-quantized, agentive, activity middle showed a large discrepancy between the two middle examples in the non-quantized activity category. This discrepancy indicates that one middle was significantly more affected than the other or that there is an unknown condition at work in middle formation that influences grammaticality of the middle. A larger scope of second degree activity middles should be tested to shed further light on this issue. The less grammatical middle of the two non-quantized activity middles was *dishes wash easily*. The data indicates that the middle *dishes wash easily* is an ungrammatical middle in Dutch and slightly grammatical middle in English. After retesting, we discovered that the predicate *wash dishes* arguably passes *change entailed of x* diagnostic and passes the *result XP* test, which is demonstrated in example (63).

(63)  

a. John washed the dishes #but nothing is different about them  
   change of x  

b. John washed the dishes clean  
   result XP

The sentence in (63a) can be interpreted in two ways. The sentence can form a semantic contradiction because the dishes have been altered, namely they have been made cleaner. With this interpretation the predicate wash has passed the *change entailed of x* test. On the other hand, the mass of the dishes stays the same before and after the event, which means that they were unchanged by the washing. Standing by the unchanged interpretation of (63a), the predicate wash has not passed the *change entailed of x* test. The example in (63b) What it boils down to then, when categorizing the activity middle *dishes wash easily* in the correct degree of affectedness, is the interpretation of the *change entailed of x* test. If we interpret that the dishes have not changed after being cleaned then the predicate *wash* has failed the *change entailed of x* test. As a result the predicate *wash* can be categorized as a potential change predicate, as is demonstrated by example (64).

(64)  

What happened to the dishes is john washed them.  
   What happened to x

The *what happened to x* test by Beavers (2011) places the tested sentence into the following framework; *what happened to YP was XP V YP* frame, where XP is the agent, YP is the object and V the verb. This test determines the boundary between the potential and unspecified change degree. If a predicate forms a grammatical sentence following the *what happened to YP was XP V YP* frame it has passed the test, if it creates an ungrammatical
sentence in that frame it has not passed the test. The sentence in (64) is grammatical, which means it has passed the test and the predicate *wash* can be categorized as a third degree activity middle.

However, if we interpret that the dishes have changed after they have been cleaned then there is no reason deductible from the previous literature that accounts for the middle *dishes wash easily* (and its Dutch translation) being judged so much more negatively than the other non-quantized activity middle, *teacups break easily*. This would then indicate there is another condition that influences middle formation regarding affectedness. With either interpretation, as it stands Beavers’ (2011) theory cannot distinguish the difference between the predicate *break* and *wash*. For the no change in the dishes interpretation, the *change entailed of x* needs to be specified to mean a physical change in the mass of the DO (again further testing is necessary to test this specification of the *change entailed of x* test).

The potential degree of affectedness also showed a large discrepancy between the two middles that were tested in this category. Again only activity middles could be tested in this category because they were the only aspectual class that could undergo the potential degree of affectedness. This resulted in two middles being tested in the potential change degree category. The first potential degree middle *the spear throws easily* was judged significantly more grammatical than the second potential degree middle, *the football kicks easily* (*the spear throws easily* 0,32 vs. *the football kicks easily* -0,31). Both middles were retested by the *result XP* diagnostic, which would determine the boundary between the potential and non-quantized change degree. Additionally, both middles were retested by the *what happened to x* diagnostic, which determines the boundary between the potential and unspecified change degree. This testing is shown in example (65) stated below.

(65)  a. What happened to the spear is John threw it \textit{what happened to x}
    a.’ What happened to the football is John kicked it
    b. *John threw the spear broken \textit{result XP}
    b.’ *John kicked the football dented

The results from the retesting in (65) show that both potential degree middles defined above should be categorized as a potential change and so were correctly categorised the first time round. Both predicates from those middles pass the *what happened to x* test (seen in 65a) which means they cannot be categorized as unspecified change. Both middles also fail the *result XP* diagnostic as can be seen in (65b). Failing the *result XP* test excludes them from the
non-quantized change degree (and consequently the quantized change degree), which leaves only the potential change degree.

Beavers’ (2011) theory of affectedness cannot account for the difference in grammatical judgement within the potential change category. The difference indicates then that as it stands now the four degree theory by Beavers is not an accurate predictor of grammatical middle formation. The potential change category could be divided into two categories, where one would cater to the predicate in the middle the spear throws easily, and the other would cater to the predicate in the middle the football kicks easily.

Finally, the telic and dynamic parameter were suggested to be problematic because the achievement middles could not be categorised with regard to affectedness because of these diagnostics. Achievement middles are telic and dynamic, so can only be maximally affected or not at all. They were excluded from maximal (quantized) affectedness but unaffected predicates were classified as non-dynamic. The stages parameter was proposed to replace the dynamic parameter because it would exclude the achievements, which results in an unaffected categorisation of the achievement middles. The results indicate that achievement middles were not judged as ungrammatical as unaffected middles, which suggests that they are not unaffected middles. The classification of achievement middles then remains an issue when applying Beavers’ (2011) theory.

5.4 Analysis of Adjunct Middles and ISC

In answering the question do adjunct middles occur in English? the data strongly indicated that they do not occur in English. The adjunct middle constructions in English were all judged negatively, whilst the Dutch participants judged four out of five adjunct middle positively. The ISC constructions were judged grammatically overall. The judgements on adjunct middles and ISC construction advocate in favour of the hypothesis that ISC construction occur in both English and Dutch and the adjunct middle only occurs in Dutch.

One pair the fork eats nicely/the fork eats the banana nicely was judged negatively in both English and Dutch, suggesting it was not a grammatical ISC (see Appendices C and D). The English native speakers judged the transitive ISC more grammatical than the intransitive ISC, whilst the Dutch judged the intransitive variant more grammatical than the transitive. Based on these results Dutch seems to consider the intransitive ISC more grammatical then the transitive ISC. This could be the case because the intransitive ISC resembles the adjunct middle more than the transitive ISC. At first glance, the intransitive ISC and adjunct middle
do not look like they have been constructed from a different base predicate because they are both intransitive in their respective form.

The pair *the new shoes walk comfortably/the new shoes walk a mile comfortably* shows another distinction in the score results between English and Dutch. The Dutch participants judged the intransitive version highly positive and the transitive version negatively. The English participants did the opposite, judging the intransitive version negatively and the transitive version positively. This results in a grammatical and ungrammatical judgement for opposite sentences in English and Dutch regarding the before mentioned pair.

5.5 Analysis of the Influence of Location

Overall, there was no clear pattern regarding the location and scoring in either language. The Location analysis did reveal that there was a relationship between judgements in task one and task two. For the English and Dutch native speakers the geographical data indicated that the less grammatical judgement task one was judged, the more grammatical judgement task two was judged. It seems then that the less grammatical a native speaker finds the regular middle the more grammatical the speaker finds the ISC and adjunct middle. Judgement task two was always judged more grammatically overall than judgement task one in both languages. Further in-depth statistical analysis would show whether there is a significant correlation between the negative scoring in judgement task one compared to the positive scoring in judgement task two for each language.

The majority of the Dutch native speakers and English native speakers were located in the Netherlands and England/UK respectively. One hypothesis that was considered was that there was a pattern in scoring relative to the distance from the epicentre of the country. For England/UK the epicentre was considered London and for the Netherlands the Epicentre was considered the Randstad.

The geographical analysis of England/UK indicated that for the first judgement task there was no pattern as we moved further away from (or towards) the epicentre in England or when considering the UK. Regarding judgement task two it seemed that the adjunct middles and ISC overall were scored more grammatical as they came closer to London, when looking at England. Scotland did not fit this pattern as they judged the adjunct middles and ISC more grammatical than the London area. The pattern predicted that Scotland would judge the ISC and adjunct middle less grammatical than the London Area and less grammatical than the
other regions of England because it is the furthest away from London when compared to the regions of England. Further research into Scottish English ISC formation could be beneficial to explain the data above.

The geographical analysis of the Dutch participants suggested that there was no pattern in scoring as the location of the participants moved towards or away from the Randstad. Additionally, there was also no scoring pattern from North to South. It is possible that the absence of a pattern regarding the Dutch provinces might be because only seven out of the twelve provinces in the Netherlands were covered by the participants in this survey. Considering the analysis was grouped by region, a multiple choice question with a set selection of UK regions and other countries would be a better way to collect geographical data because it would avoid confusion. One participant answered *no specific city* and another answered *peak district*. Both of these answers could not be grouped into a region, so were grouped into *other*.

5.5 Analysis of the Influence of Age

Regarding age, there was no significant pattern in neither English nor Dutch. There was also no clear positive or negative progression from the lower age groups to the higher age groups. For the English native speakers the majority of the participants were in the same age group and only four 10-year age groups were covered. Consequently, a possible explanation for the absence of age patterns could be in fact that not many different ages were represented. The Dutch native speakers showed a greater age range, covering the ages nine to sixty-one. As a result, the lack of variety regarding age could not be a factor when considering the Dutch age analysis. As it stands Dutch shows no influence of age regarding grammatical judgement of middles, adjunct middles, and ISC constructions, whilst English indicates the same but the data is not representative enough to make a valid conclusion for English,
6 Conclusion

All in all, this study revealed a number of conclusions and indications, motivating further research on the subject of middle formation in English and Dutch.

Firstly, the results show that agency seems to influence middle formation, in line with previous literature and findings. The states, which can never be agentive, were all judged negatively in their middle form. This is in agreement with the hypothesis that only agentive verbs can be converted to grammatical middles. Affectedness was also suggested to be a significant influence. The results from the activity middles and accomplishment middles show that when the predicate does not affect its direct object, it cannot convert to a grammatical middle, which was in line with our hypothesis and previous literature.

Secondly, the following deductions regarding the aspectual classes could be made from the results. The results suggested that the stages parameter was not an accurate indicator of grammatical middle formation. The hypothesis states that aspectual classes that were [+stages] would convert to grammatical middles. The activities and accomplishments were categorized as [+stages]. The activity middles reflected the hypothesis and indeed converted to grammatical middles. The states and achievements, categorized as [-stages] indeed converted to ungrammatical middles. The accomplishments, however, did not reflect the hypothesis as they converted to ungrammatical middles. Therefore, the stages parameter did not accurately predict grammatical and ungrammatical middle formation.

Thirdly, regarding affectedness the following conclusion could be confirmed. The data confirms the hypothesis that affectedness influences middle formation in both languages. There was no significant difference regarding the influence of affectedness between English and Dutch. Moreover, the data confirms there is a hierarchy within affectedness. The hierarchy deduced from the data was not in line with the hypothesis. The hypothesis was that the more affected the DO of the pre-middle predicate, the more grammatical the middle is that the predicate will form. The non-quantized, potential, and unspecified degrees of affectedness followed the hypothesis. The more affected the degree, the more grammatical the middle formed from that degree were judged. The quantized degree of affectedness did not reflect the literature, as it was predicted to yield the most grammatical middle, but this was not the case.

Beavers’ (2011) degrees of affectedness theory proved insufficient for predicting grammatical middle formation. The potential degree of affectedness showed significant differences in scoring within that category, which indicates that another category would be
needed to accurately predict middle formation. No test could be generated that would distinguish the predicate in the two potential degree middles that were tested.

The telic and dynamic diagnostic by Beavers generated a problem for the accomplishment middles. The data suggested that not all accomplishment middles are maximally affected. After retesting the accomplishment middles, one accomplishment middle did not pass all the diagnostics for a quantized change classification. This accomplishment middle could not be reclassified. It could not be classified as any of the other degrees outlined by Beavers (2011) because those degrees required an atelic predicate. The accomplishments are telic. The final degree then, which we added before survey construction, was the unaffected degree but this required a non-dynamic verb. Beavers’ unspecified degree (least affected degree in Beavers) was categorized by a dynamic predicate, therefore the unaffected degree we added had to be non-dynamic. Accomplishments are dynamic. This showed that the five degree of affectedness posed in section two are not sufficient in predicting middle formation. No distinction/diagnostic was found that could resolve this issue.

Fourthly, the study confirmed the hypothesis that ISC constructions occur in both English and Dutch, whilst adjunct middles do not occur in English, but do occur in Dutch. Despite the Dutch participants scoring four out of five adjunct middles highly positively and one negatively (see Appendix C), with an 80% positive judgement it is likely that adjunct middles occur, especially factoring in that previous research found positive evidence for adjunct middles in Dutch as well.

Finally, the study revealed overall similarities and differences regarding Dutch and English. The data indicates the English native speakers generally judged regular middles and ISC constructions more grammatical than the Dutch native speakers. The more grammatical judgement was found in agency, aspectual, and affectedness analysis, which indicates that the difference in judgement is not bound to one factor. Moreover, the more grammatical judgement suggests that the regular middles and ISC construction is more grammatical in English than in Dutch. Both languages indicate that when judgement task one was judged very negatively, judgement task two was judged more positively. This could indicate if the language is stricter concerning the regular middle they are more accepting of the ISC and adjunct middle. Again these results motivate further research to elaborate on this indication. Within the ISC constructions the Dutch were shown to have preference for the intransitive ISC, judging it more grammatical than the transitive ISC. The English native speakers showed the opposite judgement pattern, suggesting they have a preference for the transitive ISC. The intransitive ISC and adjunct middle resemble each other more than the transitive ISC and
adjunct middle. It could be argued then that because the adjunct middle was indicated to be ungrammatical in English, the transitive ISC is preferred over the intransitive ISC. For Dutch the opposite can be argued; the adjunct middle is grammatical so there is a preference for the intransitive ISC construction which resembles the adjunct middle.

Further research into the findings discussed above is necessary to determine the validity of the results as it will test the new hypotheses that were deduced from the data. Nevertheless, as it stands this study indicated previously unknown insight into regular and adjunct middle formation in English and Dutch.
References


Appendix A

The surveys were designed with and distributed via Google Forms. Unfortunately, google forms does not allow a direct download of your form. Therefore, this Appendix will show a mock-up of the surveys distributed to the participants.

The survey was divided into two sections when distributed (despite covering three sections as explained in section three). The grammatical judgement tasks one and two (see section three) were grouped together to prevent the participants from judging similar constructions as a group (for instance recognizing the adjunct middle construction and judging it based on the way they judged the previous adjunct middle construction). The survey began with the following acknowledgment and explanation shown in (i):

(i)  Hoi iedereen! Ten eerste, bedankt dat je de tijd neemt om mij te helpen met mijn BA scriptie. Ten tweede, een korte uitleg over de opdrachten in de vragenlijst. Deel één zal wat achtergrond informatie vragen. Deel twee zal je vragen om een aantal zinnen te beoordelen of een moedertaalspreker van het nederlands de zin zou uiten. De vragenlijst zal ongeveer 10 minuten duren.

The explanation was followed first by a series of background questions (section one of the survey) stated in example (ii).

(ii)  a. Leeftijd:
      b. Opleiding:
      c. Moedertaal:
      d. Plaats waar je het meerendeel van leven hebt gewoond:
      e. Huidige woonplaats:
      f. Spreek je nog een taal vloeiend? Zo ja, welke taal?

The final section was the grammatical judgement task. Example (iii) shows the question format used for the grammatical judgement task questions.
(iii) Een moedertaalspreker van het Nederlands zou het volgende kunnen zeggen:
Natuurkunde begrijpt gemakkelijk.

Example (iv) shows all the tested sentences in this survey.

(iv) Het antwoord weet gemakkelijk.
Borden wassen gemakkelijk af.
Theekopjes breken gemakkelijk.
Een speer gooit gemakkelijk.
De voetbal schopt gemakkelijk.
Een kat aait gemakkelijk.
Kuikentjes houden gemakkelijk vast.
Rondjes rennen gemakkelijk.
Het huis bouwt gemakkelijk.
De sigaret rookt lekker.
De man herkent gemakkelijk.
Het mes snijdt gemakkelijk.
Het mes snijdt het brood gemakkelijk.
De nieuwe schoenen lopen comfortabel.
De nieuwe schoenen lopen een kilometer comfortabel.
De doek maakt gemakkelijk schoon.
De doek maakt de tafel gemakkelijk schoon.
De vork eet gemakkelijk.
De vork eet de banaan gemakkelijk.
De blikopener opent gemakkelijk.
De blikopener opent het blik gemakkelijk.
De stoel zit comfortabel.
Het bed ligt lekker.
De trampoline springt lekker.
De snelweg rijdt gemakkelijk.
Het kantoor werkt comfortabel.
Appendix B

The surveys were designed with and distributed via Google Forms. Unfortunately, google forms does not allow a direct download of your form. Therefore, this Appendix will show a mock-up of the English survey distributed to the participants.

The survey was divided into two sections when distributed (despite covering three sections as explained in section three). The grammatical judgement tasks one and two (see section three) were grouped together to prevent the participants from judging similar constructions as a group (for instance recognizing the adjunct middle construction and judging it based on the way they judged the previous adjunct middle construction). The survey began with the following acknowledgment and explanation, shown in (v):

(v)  *Hi everyone! First of all thank you for helping me with my BA Dissertation. Secondly, A little explanation pertaining to the tasks in the survey. The first section will ask for some background information. In the second section you will be asked to judge sentences on whether or not a native English speaker could say it. The survey will take about 10 minutes.*

The explanation was followed first by a series of background questions (section one of the survey) stated in example (vi)

(vi)  a. Age:

b. What is the highest degree or level of school you have completed? If currently enrolled, highest degree received.

c. Native language:

d. City where you have resided for the majority of your life:

e. Current city of residence:

f. Do you speak any other language fluently? If yes, please specify.

The final section was the grammatical judgement task. Example (vii) shows the question format used for the grammatical judgement task questions.
A native speaker of English could say: Physics understands easily.

Example (viii) shows all the tested sentences in this survey.

(viii) The answer knows easily.
Dishes wash easily.
Teacups break easily.
A spear throws easily.
A football kicks easily.
A cat pets easily.
Baby chicks hold easily.
Laps run easily.
The house builds easily.
The cigarette smokes nicely.
The man recognizes easily.
The knife cuts easily.
The knife cuts the bread easily.
The new shoes walk comfortably.
The new shoes walk a mile comfortably.
The cloth cleans nicely.
The cloth cleans the table nicely.
The fork eats nicely.
The fork eats the banana nicely.
The can opener opens easily.
The can opener opens the can easily.
The chair sits comfortably.
The bed lies comfortably.
The trampoline jumps easily.
The motorway drives easily.
The office works comfortably.
Appendix C

The table below shows all the tested sentences, how they were categorized regarding agency, aspect, and affectedness, and the average scores per sentence for the Dutch Participants.

<table>
<thead>
<tr>
<th>Type</th>
<th>Sentence</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Judgement Task One</td>
<td></td>
<td></td>
</tr>
<tr>
<td>St. NA.</td>
<td>Natuurkunde begrijpt gemakkelijk.</td>
<td>-1.58</td>
</tr>
<tr>
<td>St. NA.</td>
<td>Het antwoord weet gemakkelijk.</td>
<td>-1.79</td>
</tr>
<tr>
<td>Act. A. 2</td>
<td>Borden wassen gemakkelijk af.</td>
<td>-0.41</td>
</tr>
<tr>
<td>Act. A. 2</td>
<td>Theekopjes breken gemakkelijk.</td>
<td>1.64</td>
</tr>
<tr>
<td>Act. A. 3</td>
<td>Een speer gooit gemakkelijk.</td>
<td>0.02</td>
</tr>
<tr>
<td>Act. A. 3</td>
<td>De voetbal schopt gemakkelijk.</td>
<td>-0.75</td>
</tr>
<tr>
<td>Act. A. 4</td>
<td>Een kat aait gemakkelijk.</td>
<td>-1.13</td>
</tr>
<tr>
<td>Act. A. 4</td>
<td>Kuikentjes houden gemakkelijk vast.</td>
<td>-1.08</td>
</tr>
<tr>
<td>Act. A. 4</td>
<td>Rondjes rennen gemakkelijk.</td>
<td>-1.63</td>
</tr>
<tr>
<td>Acc. A. 1</td>
<td>Het huis bouwt gemakkelijk.</td>
<td>-1.44</td>
</tr>
<tr>
<td>Acc. A. 1</td>
<td>De sigaret rookt lekker.</td>
<td>-0.7</td>
</tr>
<tr>
<td>Ach. A. 1</td>
<td>De man herkent gemakkelijk.</td>
<td>-0.75</td>
</tr>
<tr>
<td></td>
<td>Average Score</td>
<td>-0.28</td>
</tr>
<tr>
<td>Judgement Task Two</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISC</td>
<td>Het mes snijdt gemakkelijk.</td>
<td>1.21</td>
</tr>
<tr>
<td>ISC</td>
<td>Het mes snijdt het brood gemakkelijk.</td>
<td>1.37</td>
</tr>
<tr>
<td>ISC</td>
<td>De nieuwe schoenen lopen comfortabel.</td>
<td>1.83</td>
</tr>
<tr>
<td>ISC</td>
<td>De nieuwe schoenen lopen een kilometer</td>
<td></td>
</tr>
<tr>
<td>ISC</td>
<td>comfortabel.</td>
<td>-0.25</td>
</tr>
<tr>
<td>ISC</td>
<td>De doek maakt gemakkelijk schoon.</td>
<td>0.61</td>
</tr>
<tr>
<td>ISC</td>
<td>De doek maakt de tafel gemakkelijk schoon.</td>
<td>0.85</td>
</tr>
<tr>
<td>ISC</td>
<td>De vork eet gemakkelijk.</td>
<td>-0.48</td>
</tr>
<tr>
<td>ISC</td>
<td>De vork eet de banaan gemakkelijk.</td>
<td>-1.6</td>
</tr>
<tr>
<td>ISC</td>
<td>De blikopener opent gemakkelijk.</td>
<td>0.28</td>
</tr>
<tr>
<td>ISC</td>
<td>De blikopener opent het blik gemakkelijk.</td>
<td>1.33</td>
</tr>
<tr>
<td>Ad. Mid</td>
<td>De stoel zit comfortabel.</td>
<td>1.68</td>
</tr>
<tr>
<td>Ad. Mid</td>
<td>Het bed ligt lekker.</td>
<td>1.85</td>
</tr>
<tr>
<td>Ad. Mid</td>
<td>De trampoline springt lekker.</td>
<td>1.16</td>
</tr>
<tr>
<td>Ad. Mid</td>
<td>De snelweg rijdt gemakkelijk.</td>
<td>0.11</td>
</tr>
<tr>
<td>Ad. Mid</td>
<td>Het kantoor werkt comfortabel.</td>
<td>-0.36</td>
</tr>
</tbody>
</table>

Glossary

St. = State
NA = Non-agentive
Act. = Activity
A. = Agentive
1 = First Degree of Affectedness (Highest)
2 = Second Degree of Affectedness
3 = Third Degree of Affectedness
4 = Fourth Degree of Affectedness (Lowest)
Acc. = Accomplishment
Ach. = Achievement
ISC = Instrumental Subject Clause
Ad. Mid = Adjunct Middle
Appendix D

The table below shows all the tested sentences, how they were categorized regarding agency, aspect, and affectedness, and the average scores per sentence for the English Participants.

<table>
<thead>
<tr>
<th>Type</th>
<th>Sentence</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Judgement Task One</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>St. NA.</td>
<td>Physics understands easily.</td>
<td>-1,16</td>
</tr>
<tr>
<td>St. NA.</td>
<td>The answer knows easily.</td>
<td>-1,31</td>
</tr>
<tr>
<td>Act. A. 2</td>
<td>Dishes wash easily.</td>
<td>0,5</td>
</tr>
<tr>
<td>Act. A. 2</td>
<td>Teacups break easily.</td>
<td>2,43</td>
</tr>
<tr>
<td>Act. A. 3</td>
<td>A spear throws easily.</td>
<td>0,32</td>
</tr>
<tr>
<td>Act. A. 3</td>
<td>A football kicks easily.</td>
<td>-0,31</td>
</tr>
<tr>
<td>Act. A. 4</td>
<td>A cat pets easily.</td>
<td>-0,94</td>
</tr>
<tr>
<td>Act. A. 4</td>
<td>Baby chicks hold easily.</td>
<td>-0,9</td>
</tr>
<tr>
<td>Act. A. 4</td>
<td>Laps run easily.</td>
<td>-0,98</td>
</tr>
<tr>
<td>Acc. A. 1</td>
<td>The house builds easily.</td>
<td>-0,9</td>
</tr>
<tr>
<td>Acc. A. 1</td>
<td>The cigarette smokes nicely.</td>
<td>0,36</td>
</tr>
<tr>
<td>Ach. A. 1</td>
<td>The man recognizes easily.</td>
<td>-0,46</td>
</tr>
<tr>
<td></td>
<td><strong>Average score</strong></td>
<td>-0,28</td>
</tr>
<tr>
<td><strong>Judgment Task Two</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISC</td>
<td>The knife cuts easily.</td>
<td>1,62</td>
</tr>
<tr>
<td>ISC</td>
<td>The knife cuts the bread easily.</td>
<td>2,21</td>
</tr>
<tr>
<td>ISC</td>
<td>The new shoes walk comfortably.</td>
<td>-0,5</td>
</tr>
<tr>
<td>ISC</td>
<td>The new shoes walk a mile comfortably.</td>
<td>0,21</td>
</tr>
<tr>
<td>ISC</td>
<td>The cloth cleans nicely.</td>
<td>1,39</td>
</tr>
<tr>
<td>ISC</td>
<td>The cloth cleans the table nicely.</td>
<td>1,73</td>
</tr>
<tr>
<td>ISC</td>
<td>The fork eats nicely.</td>
<td>-1,05</td>
</tr>
<tr>
<td>ISC</td>
<td>The fork eats the banana nicely.</td>
<td>-1,09</td>
</tr>
<tr>
<td>ISC</td>
<td>The can opener opens easily.</td>
<td>0,13</td>
</tr>
<tr>
<td>ISC</td>
<td>The can opener opens the can easily.</td>
<td>1,95</td>
</tr>
<tr>
<td>Ad. Mid</td>
<td>The chair sits comfortably</td>
<td>-0,46</td>
</tr>
<tr>
<td>Ad. Mid</td>
<td>The bed lies comfortably.</td>
<td>-0,94</td>
</tr>
<tr>
<td>Ad. Mid</td>
<td>The trampoline jumps easily.</td>
<td>-1,09</td>
</tr>
<tr>
<td>Ad. Mid</td>
<td>The motorway drives easily.</td>
<td>-0,38</td>
</tr>
<tr>
<td>Ad. Mid</td>
<td>The office works comfortably.</td>
<td>-0,38</td>
</tr>
</tbody>
</table>

**Glossary**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>St.</td>
<td>State</td>
</tr>
<tr>
<td>NA</td>
<td>Non-agative</td>
</tr>
<tr>
<td>Act.</td>
<td>Activity</td>
</tr>
<tr>
<td>A</td>
<td>Agentive</td>
</tr>
<tr>
<td>1</td>
<td>First Degree of Affectedness (Highest)</td>
</tr>
<tr>
<td>2</td>
<td>Second Degree of Affectedness</td>
</tr>
<tr>
<td>3</td>
<td>Third Degree of Affectedness</td>
</tr>
<tr>
<td>4</td>
<td>Fourth Degree of Affectedness (Lowest)</td>
</tr>
<tr>
<td>Acc.</td>
<td>Accomplishment</td>
</tr>
<tr>
<td>Ach.</td>
<td>Achievement</td>
</tr>
<tr>
<td>ISC</td>
<td>Instrumental Subject Clause</td>
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<td>Ad. Mid</td>
<td>Adjunct Middle</td>
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</tbody>
</table>