Mixed-language and Humorous Advertising Slogans

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Für meine Eltern.

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Commonly used abbreviations

e.g.   for example

etc.   and so forth

i.e.   that is

vs   versus

et al.   and multiple authors, named in full citation

cf.   confer

Statistical abbreviations

N   Number of subjects in the total sample

n   Number of subjects in a subset of the sample

M   Arithmetic mean

Mdn   Median

SD   Standard deviation

IQR   Interquartile range

p   Probability

df   Degrees of freedom

t   Value of t-test statistic

CI   Confidence interval

ß   Parameter estimate

Zusammenfassung

Diese Arbeit untersucht einsprachig deutsche, einsprachig englische und zweisprachig deutsch-englische Werbeslogans mit und ohne Wortspiel bezüglich ihrer Erinnerungsleistung bei verschiedenen Zielgruppen der Werbung (vier Altersgruppen von 16 bis 90, fünf Bildungsgrade von Hauptschulabschluss oder niedriger bis zu Hochschulabschluss).

Erste Spuren von Werbung sind bereits im alten Ägypten bei den Marktschreiern zu finden und zeugen davon, dass die Bewerbung von Produkten seit jeher ein essentieller Teil des Verkauf- und Kaufprozesses ist. Mit der Entwicklung der Städte im Mittelalter, der Erfindung des Buchdrucks und der industriellen Revolution entwickelte sich die Form der Werbung mit Hilfe von u.a. Zeitungen, ersten Werbeagenturen, der Erfindung der Litfaßsäule und Medien wie Radio, Kino und Fernsehen weiter und nahm schließlich die uns heute bekannte Form an, die nicht nur offensichtliche Arten der Werbung mit Hilfe von Smartphones und Internet, sondern auch verdeckte Formen der Werbung, z.B. über Sponsoring, kennt.

Werbung kann definiert werden als kommunikativer Prozess der Beeinflussung. Die drei in der Definition enthaltenen essentiellen Merkmale der Werbung – Kommunikation, Prozesscharakter und Beeinflussung des Konsumenten als Werbeziel – können wiederum weiter unterteilt werden. Kommunikation kann sich beispielsweise auf Massen- und Individualkommunikation beziehen, der Konsument kann wirtschaftlich (durch den erstrebten Güteraustausch), aber auch psychologisch (z.B. durch Erhöhung der Motivation zum Kauf eines bestimmten Produkts) beeinflusst werden und der Prozesscharakter der Werbung bezieht sich auf verschiedene Schritte, die zum Kauf des beworbenen Produkts führen. Anforderungen an die Werbung sind dementsprechend, dass die Aufmerksamkeit des potentiellen Kunden gewonnen und die Werbung im Kopf behalten werden sollte; zudem soll der Kunde möglichst positive Assoziationen zum beworbenen Produkt herstellen und letzten Endes damit eine positive Kaufentscheidung treffen.

Gute Werbung zeichnet sich also unter anderem dadurch aus, dass sie die Aufmerksamkeit des Konsumenten auf sich zieht. Dies kann z.B. durch unterhaltsame Elemente wie Wortspiele oder unerwartete Sprachen oder Sprachkombinationen wie Englisch oder Deutsch-Englisch erfolgen. Diese Einflussfaktoren und ihre Wirkung auf die Erinnerungsleistung spezifischer Zielgruppen werden in der vorliegenden Doktorarbeit untersucht.

Während eine generelle Definition von ‚unterhaltsamen Elementen' oder Humor im Allgemeinen u.a. aufgrund der Menge an unterschiedlichen bereits bestehenden Definitionen nur schwer möglich ist, lässt sich Humor im spezifischen Fall von Werbeslogans näher bestimmen. Hierbei handelt es sich um verbalen (in Opposition zu non-verbalen, Raskin 1985: 46) Humor: der humorvolle Effekt von Werbeslogans entsteht essentiell durch den vorhandenen Text; zudem beinhaltet ein Slogan mit Humor ein überraschendes Element. Slogans mit Wortspielen als Untergruppe von humorvollen Werbeslogans erlauben eine noch präzisere Definition: laut der *Semantic Script Theory of Humour* (Raskin 1985) beinhaltet ein Wortspiel zwei entgegengesetzte Skripts wie z.B. in einem doppeldeutigen Wort, die sich in einem oder mehreren Punkten überlappen.

Die Vorteile einer Verwendung von Wortspielen in Werbeslogans sind zahlreich. Mit einem einzigen (doppeldeutigem) Wort werden mindestens zwei Bedeutungen vermittelt und die Entschlüsselung des Wortspiels stärkt die Verbindung der Konsumenten zum spezifischen Werbeslogan. Ferner verbessert eine erfolgreiche Entschlüsselung die Beziehung zwischen Werbenden und Konsumenten und somit auch die Beziehung zwischen Produkt und potentiellen Konsumenten des Produkts. Zusätzlich wird die Vorstellung vermittelt, dass die Werbeempfänger durch das korrekte Entschlüsseln der doppeldeutigen Werbebotschaft Mitglied einer intelligenten, besonderen und auserwählten Gruppe wird. Die Unterhaltsamkeit des Slogans verstärkt ferner die Besetzung des Slogans mit positiven Attributen.

Auch zweisprachig englisch-deutsche Slogans vermitteln dem potentiellen Konsumenten mehr als einsprachige Slogans, da sie zusätzlich zur deutschen Sprache auch zu den englischsprachigen Elementen passende Assoziationen (wie z.B. Modernität und Progressivität) bei den Konsumenten hervorrufen können.

Die exakte zielgruppenspezifische Wirkung von Wortspielen und deutsch-englischer Sprachmischung in Werbeslogans bezüglich der Erinnerungsleistung wird im empirischen Teil dieser Arbeit in zwei groß angelegten und deskriptiv und inferentiell ausgewerteten Studien untersucht.

Die erste Studie untersucht die Erinnerungsleistung verschiedener Zielgruppen der Werbung direkt nach Sloganexposition mit Hilfe einer online-Umfrage mit 690 StudienteilnehmerInnen. 14 nach verschiedenen homogenen Kriterien konstruierte, zu real existierenden und möglichst neutral besetzten Marken erfundene Werbeslogans werden zuerst randomisiert präsentiert und nach einer ablenkenden Aufgabe abgefragt. Mit den Ergebnissen wird gezeigt, dass die Erinnerungsleistung von Probanden generell mit einem hohen Bildungsgrad steigt und mit hohem Alter sinkt, während das Geschlecht keinen signifikanten Unterschied bezüglich der Erinnerungsleistung aufweist. Bezogen auf die Konstruktion der Werbeslogans lässt ein Wortspiel generell die Erinnerungsleistung steigen, während der Einfluss verschiedener Sprachen bzw. einer Sprachmischung auf die Erinnerungsleistung von der Zielgruppe der Werbung abhängt.

Zielgruppen mit höheren Bildungsgraden (Abitur oder höherer Abschluss) erinnern sich am besten an deutsch-englische humorvolle Slogans, gefolgt von deutschen und englischen humorvollen Slogans, die eine gleich hohe Erinnerungsrate aufweisen. Die Verarbeitung der englischen Elemente in den Werbeslogans stellt durch die vorhandenen guten bis sehr guten Englischkenntnisse keine kognitive Herausforderung für diese Zielgruppe dar und die Wortspiele werden deswegen unabhängig von der dafür benutzten Sprache verstanden. Bei deutsch-englischen Wortspielen ist zudem ein Wechsel des kognitiven ‚frames' von einen deutsch- auf einen englischsprachigen ‚frame' oder ggf. eine ‚frame-violation' notwendig, was zu einer höheren kognitiven Verarbeitungstiefe und damit zu einer höheren Erinnerungsleistung führt. Slogans ohne Wortspiele benötigen zum Verständnis ungeachtet der Sprache eine sehr niedrige Verarbeitungsleistung, was zu einer niedrigen Erinnerungsleistung führt.

Zielgruppen mit niedrigeren Bildungsgraden (bis maximal Realschulabschluss) zeigen davon abweichende Erinnerungsleistungen. Deutschsprachige Slogans mit Wortspiele haben die größte Erinnerungsrate,

gefolgt von deutsch-englischen und danach englischen Slogans mit Wortspielen. Durch die im Durchschnitt (im Vergleich zu den Englischkenntnissen von Probanden mit höheren Bildungsgraden) schlechteren Englischkenntnisse werden englischsprachige Elemente nicht bzw. nur mit einem höheren kognitiven Aufwand verstanden, weswegen deutsche Slogans mit Wortspielen, gefolgt von Slogans mit deutschsprachigen Elementen mit Wortspielen, höhere Erinnerungsleistungen als rein englische Slogans mit Wortspielen aufweisen. Die englischen Elemente von Werbeslogans ohne Wortspiele scheinen keinen ähnlich hohen kognitiven Verarbeitungsaufwand wie jene mit Wortspielen zu benötigen, da durch die fehlenden Wortspiele nicht zusätzlich die zwei Bedeutungen des Wortspiels – die zwei ‚frames'– erfasst werden müssen. Somit haben bei den Slogans ohne Wortspiele zwar die deutschen die höchste Erinnerungsrate, aber sie werden gefolgt von englischen Slogans. Deutsch-englische Slogans weisen die niedrigste Erinnerungsrate auf: englische Slogans benötigen weniger kognitiven Verarbeitungsaufwand als deutsch-englische Slogans, da sie im Gegensatz zu deutsch-englischen Slogans keine sprachliche ‚frame-violation', die Verletzung eines ‚frames', beinhalten, was zu einer höheren Erinnerungsrate zu führen scheint.

Die zweite Studie untersucht die Erinnerungsleistung von 16-30 Jahre alten Probanden mit Abitur. Ausgewählte Werbeslogans aus der ersten Studie werden erneut präsentiert und nun auch nach einer Woche abgefragt. Auch hier lassen Wortspiele in Slogans die Erinnerungsleistung generell ansteigen. Nach einer Woche weisen allerdings nicht mehr die deutschen Elemente eines Slogans die höchste Erinnerungsrate auf, sondern die englischen: diese besitzen die höchste Erinnerungsrate, gefolgt von deutsch-englischen und dann deutschen Slogans mit Wortspielen. Nach der ‚Predictive Coding' Theorie scheinen englische Elemente in Werbeslogans also Elemente zu sein, die bisher nicht Teil des prediktiven Modells für Werbeslogans der entsprechenden Zielgruppe waren. Mit der Anpassung des Modells erfolgt bei den englischsprachigen Elementen der Slogans eine höhere kognitive Verarbeitung als bei den deutschsprachigen Elementen und sie weisen dementsprechend, nach ausreichend langer Gedächtniskonsolidierung (die Abfrage der Werbeslogans erfolgt nach einer Woche), eine höhere Erinnerungsrate auf. Es wird angenommen, dass ähnliche

Tendenzen bei älteren Zielgruppen und gleichaltrigen Zielgruppen mit höherem Bildungsgrad als Abitur auftreten, allerdings nicht bei Zielgruppen jeglichen Alters mit niedrigerem Bildungsgrad und dementsprechend durchschnittlich geringeren Englischkenntnissen.

Slogans ohne Wortspiele weisen nach einer Woche die höchste Erinnerungsrate für deutsche Slogans auf, gefolgt von englischen und anschließend deutsch-englischen Slogans. Diese Tendenz ist in der ersten Studie nicht vorhanden und deutet darauf hin, dass das Erinnern an Slogans mit fremdsprachlichen Elementen nach einer längeren Zeitspanne mit einem höheren Schwierigkeitsgrad verbunden ist als das Erinnern von Slogans in der Muttersprache.

Aus den Studienergebnissen ergeben sich Folgen für Werbeagenturen und Firmen, die Werbeslogans mit englischen Elementen und/ oder Wortspielen verwenden wollen. Diese sollten dabei nicht nur auf die Wirkung von Wortspielen und englischen Elementen achten, sondern auch auf das Image der werbenden Firma und des zu bewerbenden Produkts/ der zu bewerbenden Dienstleistung. Auch die anvisierte Zielgruppe der Werbung erfordert Beachtung. Der potentielle Slogan sollte zudem genau auf unerwünschte Effekte wie Vampir-Effekt (nur der unterhaltsame Teil des Slogans wird in Erinnerung behalten, aber nicht die eigentliche Werbebotschaft) oder den ‚Wear-out'-Effekt (der Slogan wirkt schnell ‚abgenutzt') untersucht werden. Unter angemessener Berücksichtigung dieser Aspekte empfiehlt sich für Werbetreibende derzeit generell der Einsatz von Wortspielen in Werbeslogans; bei Zielgruppen mit höherem Bildungsgrad ist zudem der Einsatz von englischen Elementen empfehlenswert.

Zusammenfassend lässt sich festhalten, dass die Erinnerung an verschiedensprachige Werbeslogans mit und ohne Wortspiele zielgruppenabhängig erfolgt. Slogans mit Wortspielen führen jedoch generell zu einer gesteigerten Erinnerungsleistung bei allen Zielgruppen. Bei Zielgruppen der Werbung mit höheren Bildungsgraden kommt es zu einer veränderten Erinnerungsleistung nach einer Woche: Slogans mit englischsprachigen Elementen scheinen im Kontext der Werbung noch ungewohnt zu sein und weisen nach einer gewissen Zeit der Gedächtniskonsolidierung durch eine Angleichung

des prediktiven Modells von Werbeslogans und damit durch eine höhere Verarbeitungstiefe eine höhere Erinnerungsleistung auf als deutsche Slogans.

1. Advertising slogans with wordplays and English elements on the rise[1]

Advertising slogans in English or with English elements have become common in German-speaking countries. International logistics companies with registered offices in Germany almost exclusively use English slogans, for example: *BLG Logistics* in Bremen state that they are *Yours. Globally.*, *APL Logistics* in Hamburg say that one gets *More value from a single source* and even *Deutsche Bahn* (*Transportation and logistics in the DB Group*) and *Deutsche Post* (*You know us for express and logistics – Welcome to mail*) use English slogans. Surprisingly, even companies which are active locally, rather than being involved in international trade, choose slogans which include English elements, even though a purely German slogan would possibly be more suitable for a company with more of a long-established local image. The German TV station *Das Vierte* now uses *Be happy* instead of the old slogan *Wir sind Hollywood (*Hahn and Wermuth 2011: 7), the Rosenheim-based local beer brand, *AuerBräu,* advertises with *Our bräu is AuerBräu* and even the German federal state of North Rhine-Westphalia says *Germany at its best: Nordrhein-Westphalen.* The most well-known example might be *Schlecker*, the former drugstore chain, renowned for its corner-shop style, which used the (English-German) mixed-language slogan *For you, vor Ort*, suggesting internationality and progress where there was neither one nor the other.

The upsurge in the use of English elements in advertising slogans aimed at a German-speaking market started more than ten years ago. In an essay published in 2001 Ingrid Piller, a German linguist at Macquary University in Sydney, proved that "there is a sizable portion of German advertisements in all media in which the slogan and the headline, both of which represent the central voice of the advertisement, are in English" (2001: 162). Since then, the trend of using English elements has increased. In 2011, ten years after Piller's essay, a study conducted by *Slogans.de* illustrated that the English language is used even in fields of advertising which previously used German slogans and that there is a tendency towards ambiguity in slogans (Hahn and Wermuth 2011, cf. Klüver 2009).

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[1] This chapter includes revised ideas from my unpublished 'Magisterarbeit' (Fuhrich 2013).

It cannot be denied that English and German-English slogans and thus studies of this topic are important. Nevertheless, despite the increasing number of professionals working in the field of marketing and PR (Forthmann 2006, ICCO 2012) and the success of private and public universities teaching advertising to students (Petersen and Forthmann 2010: 20), there is a lack of theoretical basis justifying the decisions companies make for or against the use of a specific slogan in practice.

The use of anglicisms (Gawlitta 2000, Kupper 2003, Klüver 2009, Rech 2015) and the use of humour (Weinberger and Gulas 1992, Tanaka 1994, Weinberger et al. 1995, Krishnan and Chakravarti 2003, Beard 2008) have been intensively researched, specifically with regard to the field of advertising.[2] However, hardly any research has been done on the combination of English elements and wordplay in slogans and their effect on recall. In this context, English elements are not to be understood as anglicisms in a German-language slogan environment with English elements forming a lexical unity with the German ones (Onysko 2007: 10). Slogans with English elements are either completely English or, in the case of German-English advertisements, they use two different languages with expressions which are not integrated into the German vocabulary.

Previous research on the use of different languages in advertising slogans has been limited mainly to Spanish-English language mixing. The American professors of marketing David Luna and Laura Peracchio, for example, were among the first to examine how bilinguals respond to advertisements. One of their first studies, which was limited to the examination of monolingual English and monolingual Spanish slogans rather than mixed-language ones, showed that bilinguals generally recall advertisements written in their first language better than those written in their second language (Luna and Peracchio 2002b: 581). This is one small step in the direction of examining slogans constructed with two languages; it proves that "even the perfect translation of a marketing communication may not have the same meaning as the original" (Luna and

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[2] This research will not be presented in detail here, as this thesis does not treat the general use of humour or the English language in advertising, but reasons for recall rates of mixed-language and humorous slogans.

Peracchio 2002a: 457[3]).

Three years after their first studies, Luna and Peracchio added the factor 'mixed-language' and analysed mixed-language Spanish-English advertisements and their persuasiveness in the United States. This study recommends that a mixed-language slogan switches from the minority language to the majority language[4] because this places salience on the language switched to. The overall perception of the slogan thus depends on the associations evoked by the salient language (Luna and Peracchio 2005b: 53, cf. Fuhrich and Schmid 2016: 136-137). However, these results cannot be applied to the situation in Germany:

> Spanish is a minority language in the US and many Americans (and even Spanish-speaking immigrants themselves) […] seem to associate negative values with it, whereas the majority language American English receives positive associations. In Germany, both English and German are perceived positively by many – but of course by no means all – groups of speakers: German is the everyday language and first language of the majority of the inhabitants of Germany; English symbolizes progress, modernity and innovation […] (Fuhrich and Schmid 2016: 137).

In 2006, the American social psychologists Ramírez-Esparza et al. examined whether the process of understanding two languages implies that two different kinds of cultural frames (one per language) are activated. They showed that Spanish- and English-speaking bilinguals had "relatively high Extraversion, Agreeableness, and Conscientiousness scores" (Ramírez-Esparza et al. 2006: 116) when talking in English. Scores were lower when talking in Spanish. This reflects the

> tendency of bicultural individuals (i.e., people who have internalized two cultures, such as bilinguals) to change their interpretations of the world, depending upon their internalized cultures, in response to cues in their environment (e.g., language, cultural icons) (Ramírez-Esparza et al. 2006, 118).

These insights were transferred to the world of advertising in 2008 when Luna and Peracchio, this time in cooperation with assistant professor of marketing, Torsten Ringberg, combined frame theory with the cognitive processing of advertising slogans. They examined bicultural individuals who not only speak two languages - and are therefore bilingual - but are also familiar with the two

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[3]This quote anticipates Luna and Peracchio's future research: this hypothesis is confirmed by them and Ringberg six years later on (Luna, Ringberg and Peracchio 2008).

[4] The definition of 'majority language' and 'minority language' given by Luna and Peracchio is that they "use the term majority language to denote the language spoken by the group that holds the political, cultural and economic power within a country. Minority language is used for the language spoken by the group that possesses less power and prestige" (2005b: 44).

different cultures connected with those languages (Luna, Ringberg and Peracchio 2008: 280). The study results show that biculturals "activate distinct sets of culture-specific concepts, or mental frames, which include aspects of their identities" with a specific language, whereas bilinguals (but not biculturals) do not seem to do so (Luna, Ringberg and Peracchio 2008: 279). However, this study does not examine whether the activation of (culture-specific) frames has any impact on the retention and recall of advertising slogans. Furthermore, it only refers to bicultural Hispanic Americans (Luna, Ringberg and Peracchio 2008: 282) and, hence, is not transferable to the situation in Germany, where the majority of German inhabitants speak English without having a bicultural German/English background.[5]

Studies carried out in the field of psychology which examine language-switching do not necessarily focus on advertising or frame-shifting, but they do show that different brain areas are active when language-switching takes place. A 2009 study by Arturo Hernandez, professor of psychology and director of the *Laboratory for the Neural Bases of Bilingualism* at the University of Houston, is particularly interesting. He proves that, during a partly Spanish, partly English picture-naming task carried out by bilinguals, different brain areas were activated:

> Whereas there [sic!] differences in activity in brain areas traditionally associated with language, there were also differences in brain areas associated with more general cognitive functions. This included areas devoted to memory (i.e. Hippocampus), somatosensory processing, emotion (e.g. Amygdala), and self-awareness (i.e. Posterior Cingulate) (Hernandez 2009: 138).

As the different brain areas activated by the picture-naming task include those devoted to memory, one could infer that the cognitive processing of L1 has a different influence on memory and recall capabilities to the processing of L2.

However, the study mentioned above only examined Spanish-English bilingualism, not German-English bilingualism. What is more, Hernandez puts the emphasis on active processing tasks, such as the naming of pictures, whereas the processing of advertising slogans takes place in a rather passive way, as subjects do not have to produce their own utterances. What is more, the picture-naming task focuses on the utterance of individual words whereas, in mixed-language

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[5]Another critical point is that the study is based on cultural conceptions of feminine and masculine attributes. For a general statement about the ability of biculturals to do cultural frame-shifting (and about the incapability of monoculturals to do so), a higher number of culture-specific areas might need to be examined.

advertisements, whole phrases have to be processed cognitively.

A great deal of research thus also remains to be carried out in the field of psychology. It has already been established that different brain areas seem to be active during the cognitive processing of two different languages. This might support the linguistic insights of Luna, Ringberg and Peracchio in their 2008 study, which states that bicultural individuals switch not only between languages, but also between identities, as different identities might be connected to different brain areas.

Whether it is in the field of psychology or in the field of linguistics: no large-scale studies examining German-English slogans in a German-speaking environment have been conducted so far. "The most influential studies on the language of advertising were conducted in English-speaking societies" (Piller 2003: 173), not in German ones, although it is clear that "the use of foreign languages in American and British advertising is quantitatively and qualitatively substantially different from the use of English in non-English speaking markets[6]" (Piller 2003: 174). Consequently, one cannot but agree with Luna and Peracchio's argument that "very little research has been conducted to understand how bilingual consumers process information. This is surprising, given that demographic trends indicate that bilingual populations are increasingly important around the world" (Luna and Peracchio 2005b: 54, cf. Luna and Peracchio 2001: 284). Piller shares this opinion: "comparatively little attention has been paid to advertising language as a site of language contact" (Piller 2003: 170). To the best of my knowledge, the first attempt to examine German, English and German-English slogans is a study by Professor Hans-Jörg Schmid and me (Fuhrich and Schmid 2016), which will be introduced and discussed in detail in chapter 3.4.

A more general and philosophical argument for the necessity of studies in the field of advertising has been put forward by the French professors of marketing, Patrick Georges, Anne-Sophie Bayle-Tourtoulou and Michel Badoc:

> The brain is a complex organism. The studies conducted in an attempt to enhance our understanding of the brain are still in the early stages. Fundamental discoveries are bound to emerge in the 21st century that will profoundly modify knowledge relating to consumer behaviour and psychology and will shed light on certain automatic or impulsive reactions that are still unexplained. Knowledge of

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[6] The term 'non-English speaking markets' might be misleading. Of course, those markets (i.e. France, Germany or Greece, Piller 2003: 174-175) do speak English, but use it as a foreign language and not as their mother tongue.

these reactions leads to significant progress in medical treatments. This knowledge is also used by the police and the judiciary to understand certain reactions in the event of high stress levels such as in assault or rape. Marketing, which in essence is a science focusing on knowledge of customers and proactive customers, must develop its understanding of these studies (2013: 18).

Advertising language, language contact and bilingual consumers are aspects of marketing that are still largely unexplored; studies about them might give new insights into the understanding of the brain.

Taking everything into account, the time has come to fill the gap and examine the recall rates of mixed-language German-English slogans that include wordplay and are set in a German-speaking environment from both a theoretical and a practical point of view. A comparison with monolingual English and German slogans will be of particular interest. Thus, the following thesis presents two large-scale recall studies on advertising slogans which consider different target groups in advertising. The first study tests relatively short retention time spans by asking subjects to recall slogans five to ten minutes after having encountered them; the second study tests retention and recall rates after one week. These studies will be described and analysed in the following chapters. Linguistic theories will be of particular importance in the analysis, as the results will be explained with the help of the following: humour theory (Raskin 1985, Attardo and Raskin 1991, Attardo 1994, Attardo 2001), frame shifting theory (Fillmore 1982, Fauconnier and Sweeter 1996, Coulson 2001, Ungerer and Schmid 2006, Matlock 2009), relevance theory (Sperber and Wilson 1995) and predictive coding theory (Friston 2010, Huang and Rao 2011, Clark 2013). After evaluating the results of these studies, this thesis will come to conclusions regarding the best target-group specific use of advertising slogans concerning immediate recall and recall after one week.

First of all, however, the research subject of this thesis, advertising slogans, shall be placed into the larger context of advertising. This makes it possible to get the bigger picture of advertising and the vast areas covered by it, while, at the same time, it offers the opportunity to get a better understanding of advertising slogans and their particular importance.

2. Slogans within the larger context of advertising

This chapter gives, first of all, a brief introduction to the history of advertising and summarises the most important points that led to the forms of advertising that are used nowadays. It puts emphasis on the history of advertising in Germany, since this doctoral thesis treats the efficiency of different advertising slogans with regard to the German market, but it nevertheless also considers developments in other countries.

While this first section explains why advertising has the forms that it has nowadays, it is not yet capable of delivering a general definition of advertising, which is the topic of the second section. This second section discusses different areas of advertising to show the variety of possible applications, which makes it possible to pin down five essential features of advertising that lead to a general definition of advertising. Since advertising is seen as a communicative influencing process in this definition, the three keywords of the definition – 'communicative', 'influencing' and 'process' – will be examined closer. Concerning communication, the two areas 'individual communication' and 'mass communication' will be discussed. Afterwards, the influencing character of advertising will be illustrated with the areas economics and psychology that advertising seems to be positioned in between. As a last point, five processes of experiencing will be examined to illustrate the different aspects of 'process', one of the keywords of an all-encompassing definition of advertising.

Good advertising will be the topic of the last section of this chapter. It addresses the problem of correctly encrypting and decrypting an advertising message and analyses an example of good advertising – a *RitterSport* chocolate campaign – with regard to the key issue of bridging the gap between continuity and flexibility.

As a first step, the roots and origins of advertising will be explained in the following section.

2.1 History of advertising

The first proof of advertising can be found in Ancient Egypt, where town criers advertised the goods provided at the market stalls (Schweiger and Schrattenecker 2009: 1). Oral advertising thus has a long tradition, but so does written advertising: traders in Babylon used signs to show their list of goods in order to get the attention of interested customers (Schweiger and Schrattenecker 2009: 1). From the very beginning on, advertising thus constitutes an essential element in the buying and selling of products.

A particular important point in the history of advertising is the development of towns, which generally increases advertising. In the late Middle Ages, for example, towns experienced an economic boom when they turned into urban trading centres: not only traders, but also travellers bought and sold products and advertised them loudly, and traders even employed professional town criers (Schweiger and Schrattenecker 2009: 2).

A few hundred years later, at the beginning of the 15th century, another milestone in the history of advertising was reached with the invention of letterpress printing: the 95 theses of Martin Luther in 1517, pinned on a churchdoor, can be regarded as the first advertising campaign. This campaign is to be seen under a political light, as it led to the Protestant Reformation in Germany and throughout Europe. But there are also non-political advertisements at that time, equally made possible by the invention of letterpress printing: this is also the time that advertising journals appeared for the first time which exclusively published advertisements (Schweiger and Schrattenecker 2009:2).

All in all, advertising exists almost since the beginning of civilisation. It was used in oral and written form, created jobs such as the one of a town crier, underwent a major development through technical inventions such as letterpress printing, led to new forms of publishing (advertising journals, for example) and had the potential of being used for political reasons. As much as it seems to be similar to advertising forms nowadays, it is still a large step from this early form of advertising to modern advertising as we know it. Modern advertising is principally based on our liberal economic system as well as on freedom of

expression and information, which has not yet been established in the Middle Ages or in the 15th century (Siegert and Brecheis 2010: 69). Contrary to wide-spread belief, it is possible that modern advertising can exist without these factors, too: China, for example, has major restrictions against free access to the Internet and freedom of speech and its economic system can rather be defined as a socialist market economy, but advertising nevertheless exists (Siegert and Brecheis 2010: 69).

Another characteristic trait of modern advertising is that it is only required when there are more products and services on offer than absolutely necessary (Siegert and Brecheis 2010: 69). This occurred for the first time at the beginning of the 19th century, with the Industrial Revolution setting in (Bak 2014: 1). Society changed dramatically: more technical equipment was available, important inventions could be made, and goods could be produced in great amounts. The form of advertising developed to the form that we know today. Customers could not rely on the quality of products because of the anonymous production conditions: they did not know the trader in person anymore. The trust in products and in the trader had to be built up in a different way (Zurstiege 2015: 35). Therefore, brands replaced the trader as a selling person and now stand for continuous quality and reliability. A particular combination of images and signs thus replaced an individual (Zurstiege 2015: 41), but nevertheless enjoys the trust of consumers.

Newspapers began to publish advertisements, first advertising agencies were founded particularly in the United States (Schweiger and Schrattenecker 2009: 3) and advertising posters became more carefully and complex designed ones, as their importance increased through their reproducibility and thus through the possibility of a wide distribution. What is more, a wide distribution was supported by the fact that posters could be glued to prominent places through the invention of the advertising column in 1854 (Reinhardt 1995: 44-45).

At the turn of the century, radio and cinema were used as new means of advertising. The first radio station was created in 1923, the first sound film in 1928 (Schweiger and Schrattenecker 2009: 4) and first television series appeared at the beginning of the 1930s (Schweiger and Schrattenecker 2009: 5). However,

advertising does not just have the potential for a rather harmless promotion of products. It can also support and promote specific ideologies and political tendencies. National Socialism, for example, strongly made use of advertising or, more specifically, propaganda: sound films and advertising films were encouraged, radio stations were used for specific advertisements and the Ministry for Popular Enlightenment and Propaganda (led by Goebbels) controlled all advertising (Siegert and Brecheis 2010: 73). However, the last case of political advertising did not happen more than 75 years ago, but political advertising is used permanently and is part of our everyday life. It finds its place in election campaigns, everyday politics and, more disturbingly, terrorist militias such as the Islamic State use targeted advertising to recruit new assassins.

In summary, the forms of advertising are continually changing and evolving. At the moment, the access to Internet and smartphones give rise to new possibilities of advertising, since they are able to transmit information as quickly as never before (Schweiger and Schrattenecker 2009: 5). New influencing factors on advertising are various and consist, among others, of internationalisation and globalisation, digitalisation and new technologies, individualisation, an experience-oriented lifestyle, the need to gain attention, economisation and legal and institutional frameworks (Siegert and Brecheis 2010: 87-104). These terms shall briefly be explained in the following.

Internationalisation and globalisation leads to a frequent use of English or English elements in advertising, since the advertising message is then comprehensible in non-German speaking countries. Digitalisation offers more possibilities of advertising, for example in virtual spaces or on smartphones as a new technology – but again, this might also infer that English might be chosen as the preferred language, since a wider, possibly non-German speaking audience can be reached through the Internet. Individual experiences are increasingly important in the context of individualisation and thus in the context of a detachment from historical social forms and a general loss of stability. While traditional forms of security such as a big, stable family are not provided or accepted anymore, individual experiences become very important and might even constitute the essence of life for some people. Brand and product staging should thus focus on an active, experience-oriented image (Siegert and Brecheis 2010:

93). In the context of an overstimulated world, an essential part of advertising consists of getting the attention of consumers (Siegert and Brecheis 2010: 96), and because of economisation, the price might be the decisive factor for a purchase decision (Siegert and Brecheis 2010: 101). The legal frameworks mentioned include freedom of opinion, advertising bans or advertising restrictions for e.g. doctors, psychologists or prescription medicines. Also advertising for tobacco products or alcohol might be restricted in some countries (Siegert and Brecheis 2010: 103).

These new influencing factors on advertising do not only shape the form of advertising in general, but advertising slogans seem to be influenced by them in particular. Internationalisation causes a frequent use of English elements in slogans because these elements signal progress and innovation. New technologies frequently make use of advertising slogans, since browsing through the Internet – with more than one browser tab open at the same time – requires a rather short time span and slogans manage to convey the essential message of an advertisement in a couple of seconds. What is more, slogans often match with the character of experience that consumers wish for, as they are e.g. especially entertaining. Particularly original, funny or provocative slogans which might use wordplay or language-mixing additionally manage to be attention-grabbing. Economisation through an indication of prices is possible, although not mandatory for advertising slogans and legal frameworks, among others, support the originality of slogans because slogans can only be protected legally when they can be clearly associated with one brand (Mehler 2011, cf. chapter 3.3).

All in all, there is a long history of advertising to be considered, and the continuous transformation of advertising opportunities and forms of advertising will continue in the future. But what is the nature of advertising? And which areas are affected by it? These are questions which shall be answered in the following.

2.2 Nature of advertising

The following figure illustrates the structure of the next chapters and summarises their most important points.

The different areas of advertising will be in the focus of the first chapter before moving on to five essential features of advertising. These features – process character, target orientation, contents, lines of communication and resources/ formats – lead to a definition of advertising as a communicative influencing process. The keywords of this definition, 'communicative', 'influencing' and 'process', will further be examined: communication consists of mass communication or individual communication and both economics (through the

exchange of goods) and psychology (through information-, motivation-, socialisation- and reinforcement functions) are influencing factors on advertising. Five processes in particular occur in the field of advertising: consumers need to pay attention to advertisements, should ideally keep them in mind, develop a positive feeling about the advertisement and an interest in the product and finally make a positive purchase decision. The following chapters will explain these aspects in detail.

2.2.1 Different areas of advertising

The previous chapter about the history of advertising shows that there is not only one definition of advertising, and that there is not just one specific area which uses advertising. Since there are many different approaches to advertising, this topic comprises so many features and aspects that it is hardly possible to draw a clear distinguishing line to other areas (Siegert et al. 2016: 15). What about events organized by companies, e.g. company marathons or the sponsoring of a children's soccer team – is this still part of prototypical advertising as we know it? The traditional communication model is fading in these cases, as the intention behind these kinds of advertisements is not clear (Siegert et al. 2016: 15). On the other hand, maybe every act of communication is connected to advertising, since all human beings generally tend to present themselves in a good light? This tendency is in current times enforced through virtual platforms of self-exposure such as Instagram or Facebook, which is generally a means of advertising oneself. Additionally, there are hybrid forms of advertising, e.g. when ads imitate newspaper or journal articles (Siegert and Brecheis 2010: 40-45, Müller-Lancé 2016). Other aspects which might not match the prototypical image of advertising include product placements (Koch 2016: 373-396), political advertising (Podschuweit 2016: 635-668) and social marketing (Fretwurst and Friemel 2016: 669-688). They might not come to mind immediately when thinking about advertising, but their aim is nevertheless to persuade consumers to buy a specific product or have positive associations concerning a specific brand. The persuading of customers takes place more indirectly in these cases than the one of explicit advertisements. Additionally, there is also online advertising through every

imaginable and possible channel, e.g. through smartphones, apps and Internet access in general, which will play an important role in the future (Nöcker 2014: 149-150).

Regardless of its possible areas of application, advertising becomes more and more important because of the large amount of areas of everyday life which are affected by it. This is a possible explanation for the increasing number of advertising agencies and academies and also justifies the increasing expenses that companies are willing to pay for advertisements (Mayer and Illmann 2000: 377). Advertising thus seems to be regarded as a promising way of influencing purchase processes positively (Mayer and Illmann 2000: 377).

2.2.2 Five essential features of advertising

Advertising consists of many different forms and methods. Nevertheless, the essential characteristics and features of advertising can be boiled down to five points. These are process character, target orientation, contents, lines of communication and resources/ formats (Siegert and Brecheis 2010: 25-28).

The process character describes advertising as a communicative process: it consists of an on-going communication between the advertiser and the potential consumers. This communicative process needs a sender, a recipient and a message, with the overall aim to influence potential customers. Thus, the target-orientation of advertising consists of influencing those customers. The essential advertised contents range from specific products to general ideas or services: a washing powder can be subject of advertising as well as a certain political idea (such as the 95 theses of Martin Luther mentioned previously) or a specific insurance service.

The lines of communication as well as the resources and formats of advertising are as diverse as the advertised contents. They have already been mentioned in the previous chapter about different areas of advertising and range from online advertisements to advertisements in printed form, but also include advertisements on smartphones and new media or 'hidden' advertising in the form of sponsored events.

A combination of these features enables a detailed definition of advertising:

> Werbung ist ein geplanter Kommunikationsprozess und will gezielt Wissen, Meinungen, Einstellungen und/oder Verhalten über und zu Produkten, Dienstleistungen, Unternehmen, Marken oder Ideen beeinflussen. Sie bedient sich spezieller Werbemittel und wird über Werbeträger wie z.B. Massenmedien und andere Kanäle verbreitet (Siegert and Brecheis 2010: 28)[7]

This definition underlines the communicative character of advertising and its attempt to influence potential consumers. In short, the lowest common denominator of all kinds of advertising formats, methods and possibilities seems to be that advertising is a communicative influencing process (Mayer, Däumer and Rühle 1982: 2). This is the definition which prevails throughout this doctoral thesis, and which shall be examined in detail in the next chapters. For this purpose, the three keywords 'communicative', 'influencing' and 'process' will be discussed closer in the following.

2.2.3 Communication in advertising

Linguistics as a research discipline is especially well-suited for an examination of advertising slogans: advertising primarily consists of communication, and communication is one of the key research interests in linguistics. Communication implies the exchange of opinions or information and the creation of relations with one another (Schweiger and Schrattenecker 2009: 6). As shown in Bühler's *Organon Model*, a sender wants to communicate a particular message to a recipient, and this message has different functions of expression, representation and appeal (Bühler [1934] 1999). The sender is, in the case of advertising, the company, which wants to communicate with the message recipient, the potential client or consumer. The appeal function is particularly important in advertising, as the company wants the recipient to buy the advertised product. The expressive function touches upon the nature of the advertising expression by itself, and the representative function gives content-related pieces of information about e.g. features of the product.

Advertising can not only be considered as a general communicative process, but there is an additional difference which can be made: the one between

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[7] 'Advertising is a planned process of communication and specifically wants to influence knowledge, opinions, attitudes and/or behaviour concerning and regarding products, services, companies, brand or ideas. It uses specific means of advertising and is distributed through advertising vehicles such as mass media and other channels' (my translation).

individual communication and mass communication (Schweiger and Schrattenecker 2009: 8-10, Bak 2014: 13).

Individual communication consists of direct bilateral communication between the advertiser or representative of the company and the potential consumer, which enables the recipient of the advertising message to give feedback. This is clearly an advantage, as advertising can then cater for the needs of individuals, which makes it possible to exchange opinions. The company has the opportunity to show a special interest in the individual and deliver additional, individually tailored arguments for a purchase of the company's product.

Methods such as direct selling are part of individual communication (Schweiger and Schrattenecker 2009: 9), but in the majority of all cases, advertising primarily consists of mass communication which does not allow a direct exchange with potential consumers. As this does not offer the possibility of giving direct feedback, it is especially important in mass communication to know the needs of the specific target groups and to anticipate them; to include these needs into the communicated advertising message and thus to win the right audience for the right products. An unspecific advertising slogan does not reach the right target audience in mass communication. Therefore, the advertising slogan should be tailored as much as possible for the right target group, which will ideally buy the product in the end because of a convincing advertisement. This doctoral thesis provides some guidance in finding the ideal slogan for various target groups (cf. chapter 5).

Two more keywords in the definition of advertising as a communicative influencing process are 'influence' and 'process'. Economics and psychology as essential influencing factors on advertising shall be examined next, followed by five processes of advertising which will complete the definition of advertising.

2.2.4 Influencing in advertising

Advertising attempts to influence potential consumers in their purchase decision. The process of influencing occurs to a large extent in two areas: economics and psychology (Mayer and Illmann 2000: 383-386). They shall be briefly discussed in the following.

In short, the economical function consists of an exchange of goods and the psychological function consists of an information function, motivation function, socialisation function and reinforcement function. The fundamental principle of communication – that a sender wants to convey a message to recipients in order to influence them– still prevails.

The economical function – the exchange of goods – is almost self-explanatory: the aim of advertising is to influence consumers in their purchase decision, i.e. when advertising succeeds at the end of an influencing process, the recipient of the advertising message will buy goods from the sender of the message (Mayer and Illmann 2000: 383).

The mentioned four psychological functions need some more explanation. The information function informs the recipient about the product and its features, and the motivation function ideally convinces recipients to develop a preference towards the advertised product (Mayer and Illmann 2000: 384). Recipients are not required to buy a product immediately, but their interest should be raised in such a way that they are at least looking for more information about the product.

The socialisation function changes individual and collective experiences (Hermanns 1976: 361): advertising shapes trends and might tell customers what to eat and drink and what to do in order to be fashionable (Mayer and Illmann 2000: 385).

The reinforcement function is part of learning psychology and is connected to classical conditioning: an unconditional stimulus repeatedly meets a conditional stimulus until the two are linked together. This might occur with certain melodies which are linked to certain advertisements: it is then possible to hear a specific melody and know the brand the melody belongs to (Mayer and Illmann 2000: 385-386).

Advertising slogans fulfil these four functions. A slogan informs about a product and is ideally linked to it, obtains likeability through e.g. the use of humour (Mayer and Illmann 2000: 585-586, Bak 2014: 103) and signals internationality and progress through the use of English elements. Original and/ or entertaining elements potentially raise motivation and thus increase socialisation, since they might trigger associations of likeability (cf. chapter 3.2.5). In terms of reinforcement, not only melodies can be closely connected to specific brands, but also advertising slogans have the potential to establish close connections between

them and specific products or brands.

All in all, a well-designed advertising slogan can fulfil the functions mentioned by Mayer and Illmann, but the most essential and general rule is still that good advertising needs to be based on good communication, which consists of an ideally mutual process. The different aspects of this process shall be briefly mentioned in the following.

2.2.5 Advertising as a process

As mentioned previously, advertising is target-oriented and has the aim to influence potential consumers, i.e. to change their experiencing and behaviours (Mayer and Illmann 2000: 374). Five processes of experiencing are particularly important in advertising: the recipient has to pay attention to an advertising campaign, should keep it in mind, should develop a positive feeling about it and, at the same time, develop a genuine interest for the product and, finally, should make a positive purchase decision (von Rosenstiel and Kirsch 1996: 15). These five processes are ideally experienced through the processing of advertising messages. Advertising is thus essentially a communicative influencing process (Mayer, Däumer and Rühle 1982: 2).

2.3 What is good advertising?

Advertising is generally about communication. The communicated message will be encrypted by the sender and then decrypted by the receiver (Schweiger and Schrattenecker 2009: 13). The encryption and decryption of the message is one of the key issues in advertising, as senders do not always intend the message that is actually understood by the receivers of the message. In a pilot study for this doctoral thesis, for example, a slogan for a snowboard brand was invented and tested on subject recall. The slogan *Schneebrett made in Bavaria* used for this purpose includes the term 'Schneebrett' ('snow slab'), which should initially only refer to snow slabs, certain kinds of snow avalanches in mountains and snowboard areas. Coincidentally, the literal translation of the term is *snowboard*, which is also the term for the advertised sports device. This was not intended and thus

might have confounded slogan recall, as it makes the slogan more entertaining and humorous than planned (Fuhrich and Schmid 2016: 144). In this case, the encrypted, intended message of the sender is not congruent to the message the recipient might have decrypted. Such a situation should be avoided in advertising, since it poses the risk that the intended message does not come across. Good advertising thus consists of a congruent encrypted and decrypted message.

Consumers are used to advertising, since they encounter it in everyday situations. In order to gain the attention of consumers, advertising should offer something extraordinary such as entertaining elements or unusual languages to consumers. Successful advertising thus generally offers unusual elements to the audience to get attention (Pepels 2005: 107). Of course, exceptions apply to products the consumers feel an inner need for, e.g. because they are already convinced of the fact that they need a particular product. Intrinsic motivation to process and compare advertisements of this product and similar ones is then high and the design of advertisements can consequently be more conventional, since consumers generally pay attention to the advertisements of desired products.

More criteria for good advertising are listed by professor of business administration Werner Pepels (2005: 111-112): it has to be continuous so that the profile of the company will be stuck in the consumers' minds although there is an uncountable number of other advertising forms which compete for the consumers' attention. It does not only have to be appealing in an aesthetic way, but it also has to convey a substantial message. Additionally, consumers need to build up trust in the product and they have to believe that it really has the advertised features so that they have enough confidence to buy it, especially when the product is only available for a high price. And although continuity of advertising is one of the key demands for good advertising, it also has to show a certain degree of flexibility in order to adapt quickly to new situations without overthrowing the complete image of the company. The chocolate company *RitterSport* shows how this can be achieved (RitterSport Blog 2015): it produces original advertisements for specific chocolate flavours, but does not neglect the need to react flexible and locally. This is why a Munich-based advertisement shows a half-eaten *RitterSport* chocolate with the flavour 'strawberry-yoghurt' in pink packaging, titling it *Skandal um Rosi* ('Scandal about Rosi'). This is the title of a very well-known German song, most often sung in beer tents at the Oktoberfest in Munich. At the same time, 'Rosi' is

similar to the German adjective 'rosa', which means 'pink' and thus refers to the packaging and the flavour. Another advertisement shows a picture of the *RitterSport* chocolate flavour 'tortilla chips' with the title *Die hat auch Pep* ('This one also has Pep'). 'Pep' is a homophone to the German word 'Pepp' ('pep, sparkle'), but refers to the former trainer of the FC Bayern Munich soccer team Pep Guardiola, who additionally comes from Spain where tortilla chips are a common food.

The entertaining factor and visual design of these advertisements is constant in every city of the advertising campaign, but the local references are different. In Frankfurt, the title of similar advertisements is *Der Goldpreis steigt und sinkt. Nur die bleibt konstant lecker* ('The gold price rises and falls. Only this one stays constantly delicious'), referring to the stock exchange in Frankfurt, and the title for an advertisement in Essen is *Wenn das kein schönes Essen ist* ('Now this is a beautiful Essen'), as the name of the city of Essen is a homophone to German 'Essen', 'food'. With a consistent company image, steady advertisement designs, but locally oriented references in advertising titles, *RitterSport* manages to bridge the gap between continuity and flexibility of advertising.

Further factors to be taken into account for good advertising are, according to Pepels (2005: 111-112), that it should be able to proof its key message in order to convince skeptics and to provide reasons why the specific offer is particularly great. The advantages of the product are essentially most important for its potential consumers. Thus, the more plausible the reasons for a purchase, the more likely it is that the product will be bought. Advertising further does not only face the challenge of having to attract attention and of getting into the minds of consumers, but it is also required to establish a strong connection between the advertisement by itself and the brand and/ or product behind it so that all positive features can be transmitted from the advertisement to the sender of the message and not to a competing company with similar products.

As this doctoral thesis will treat advertising slogans, it is important to note that most of the ideal features for good advertising apply to advertising slogans, too. They should be original and unmistakable, appear continuously, have a substantial message, they can put emphasis on the brand as sender of the message and, above all, have the potential to be striking and to get attention (cf. chapter 3). More difficulties arise with the challenge to give consumers confidence to buy the

product, to proof the key message and to provide reasons for a purchase. These demands are easier to fulfill with the accompanying text of an advertisement, which can be found in e.g. labels of the product or more detailed texts below or above the actual slogan.

What does the future hold for the requirements of good advertising? One of the issues that need to be addressed in the future is the need for advertisements to be highly economical, but attention-grabbing at the same time (Siegert and Brecheis 2010: 297). Additionally, advertising needs to meet the demand for originality, since it should not be confused with the one of a competing company. If this demand is not met, financial resources are used in vain and the competitor might even benefit from it (Pepels 2005: 111). These demands could be solved by using wordplay and foreign language elements such as English. More advantages of these elements particularly in advertising slogans will be discussed in the next chapter. First of all, however, some theoretical terms need to be defined. Questions – such as: what is a slogan; which roles do humour and language play in advertising; is there a difference between wordplay and puns? – will be answered in the following before moving on to the discussion of advantages of English elements and wordplay in advertising slogans.

3. Humour and language in advertising[8]

This chapter provides the definitions and knowledge necessary for a further analysis of slogan recall rates. The term 'slogan' will be explained first, followed by an explanation of the terms 'humour' and 'pun'. An overview of the effects of English in German advertising will be given afterwards. After a summary of the previous work on slogan recall rates, the aims of the present study will be presented.

3.1 What is a good slogan?

A slogan (also called 'claim' in the world of advertising) is one way of advertising a product. It sums up the main advertising message, guarantees the recognition of a product and thus has similarities to a business card (Kupper 2003: 84). But how can it be guaranteed that slogans will really be kept in mind and, ideally, lead to a purchase of the product?

This kind of guarantee cannot be given. This is illustrated by one of the classic concepts of advertising analysis, the *AIDA* formula, which has very large similarities to the previously introduced figure about the nature of advertising (fig. 1). According to the *AIDA* formular, advertising a product consists of getting the attention (*A*) of potential customers, raising the customers' interest (*I*) for the product, establishing a desire (*D*) for it and finally provoking an action (*A*) by the customer, such as the purchase of the product (Koschnick 1983: 25, Janoschka 2004: 19, Schlüter 2007: 25). As could already be seen in chapter 2.2, the final success of a product thus depends on many factors and the effective use of an appropriate slogan is just one of them. Other factors that lead to the purchase of a specific product are difficult to examine (Zurstiege 2015: 95). It is likely that these factors depend on individual experiences, associations and memories. Nevertheless, the question introducing this chapter – what is a good slogan – can be answered: a good slogan is likely to be capable of complying with the *AIDA* formula. It gets the attention of potential customers and raises their interest, which

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[8] Chapters 3.1-3.3 include revised ideas from my unpublished 'Magisterarbeit' (Fuhrich 2013).

ideally (i.e. provided the customer has not had any personal negative experiences which could prevent the following steps from being made) leads to a desire for the product and, eventually, a purchase. The prerequisite for this, however, is that the slogan can be recalled well by the advertisement's specific target groups.

Individual experiences with specific products or brands might not be measurable, but what can be measured is the slogan recall rate. Sales should be "unforgettable by the memories they effect. You must penetrate the customer's memory, with the right language, the right repetitions and the right sequences" (Georges et al. 2013: 90). Knowing which slogans can achieve this, and deciding which languages should therefore be used for a slogan are major steps towards selling the product. This thesis will thus focus on the testing and analysis of specific rates of slogan recall for different target groups in advertising.

3.2 Humour and puns

3.2.1 Humour

One of the advertising trends mentioned above is that slogans increasingly contain an ambiguous element (Hahn and Wermuth 2011: 10) which leads to a humorous effect. But what exactly is a humorous effect? Is, for example, a play on words within a slogan automatically humorous even if it does not tell a joke? The wipe *Plenty* uses the slogan *Wisch you a happy day* (Hahn and Wermuth 2011: 11), which is a mixed-language wordplay, as the pronunciation of *wisch* means 'to wipe' in German, but 'to wish' in English. Although the slogan has no obvious punchline and does not tell a joke, people who understand its language duality tend to categorize the slogan as humorous.

One of the most prominent representatives of linguists doing research on humour is Salvatore Attardo, professor and dean of the College of Humanities, Social Sciences and Arts at Texas A&M University–Commerce. Three years after developing the *General Theory of Verbal Humor* together with professor of English and linguistics Victor Raskin (cf. chapter 4.3.3), he explicitly mentions the impossibilities of defining humour:

> Ultimately, it seems that, not only has it not been possible to agree on how to divide the category of "humor" (e.g. "humor" vs "comic" vs "ridiculous"), but it is even difficult to find a pretheoretical definition of "humor" in the most general sense. As a matter of fact, the claim that humor is undefinable has been advanced several times (Attardo 1994: 3).

The differences in the definitions of humour can be put down to to the fact that attempts at a definition have been made by people from different fields. As Attardo (1994: 3) mentions, humour research in the field of literature often compares humour to other terms such as seriousness (Chateau 1950) or tragedy (Cometa 1990: 23), whereas linguists, anthropologists and psychologists such as Raskin (1985), Chiaro (1992) or Apte (1985) claim that humour is an "all-encompassing category, covering any event or object that elicits laughter, amuses, or is felt to be funny" (Attardo 1994: 4). Raskin also uses a broad definition of humour: "we will use the term 'humor' in the least restricted sense, interchangeably with 'the funny'" (Raskin 1985: 8). Humour can thus be observed and examined in almost all kinds of fields – e.g. in contexts such as sex roles, children's humour, ethnic humour, language, religion and folklore (Apte 1985).

Attempts at subcategorisations have been made, but they are as many and varied as the definitions of humour themselves (Attardo 1994: 4-5). The attempts at trying to grasp and define humour seem to have led to

> a perhaps not unjustified pessimism on the very possibility of finding a common ground of analysis among the many socio-/ historical manifestations of humor, let alone a determination of the necessary and sufficient conditions for humor to obtain (Attardo 1994: 7).

– or, as Raskin puts it, "still another blow humor deals to its researchers is the terminological chaos created by an abundance and competition of such similar and adjacent terms as humor, laughter, the comic, the ludicrous, the funny, joke, wit" (Raskin 1985: 8).

A general definition of humour thus seems to be an almost impossible task. When it comes to humour in advertising slogans, however, one general distinction is possible. Humour in slogans is always verbal; whereas non-verbal humour is any kind of humorous situation which is created without text (Raskin 1985: 46), verbal humour is any text "capable of creating a humorous effect" (Raskin 1985: 46). The next subchapter takes a closer look at humour in advertising slogans and attempts to pin down its most important elements.

3.2.2 Humorous slogans

The terminological chaos Raskin refers to regarding the attempts to define humour (1985: 8) could equally apply to humorous slogans, which will be examined in this thesis. There is no general consensus as to what makes a slogan well-made and funny, each and every individual person judges for him- or herself. This is shown by an analysis of *For you, vor Ort*, a slogan of the former drugstore chain *Schlecker*. Opinions about this slogan are divided: some find it funny, others find it disastrous. These two opinions are represented in an interview with two advertising experts, Arnd Zschiesche and Alexander Hahn, who were asked by *impulse.de* to give their opinion about the *Schlecker* slogan. While Zschiesche claimed that this slogan would be a disaster (Zschiesche and Hahn 2012), Hahn stated that it would be a success because the mixed-language concept of the slogan would be the subject of various press articles and therefore a good advertisement (Zschiesche and Hahn 2012).[9]

The published literature on humour that Attardo reviews in his 1994 book includes some sources which are especially interesting for research on humorous slogans. These say that it is necessary or useful for a joke to include some kind of surprise. In his *De Oratore*, Cicero was one of the first to point this out: "But of all this at nothing does one laugh more than at what is beyond expectations" (Cicero LXX: 284 in Attardo 1994: 37). Cicero only made this observation in passing, but later, during the Renaissance, the Italian philosopher Vincenzo Maggo (known as 'Madius') was keen to take up the topic of surprise again in his work *De Ridiculis*: "Hence I cannot marvel enough why Cicero, who dealt fully with the ridiculous, about surprise, which is a cause of laughter, did not even say a word, [...], because laughter can never arise without surprise" (Madius 1550 in Attardo 1994: 37).

The element of surprise can occur in two ways in humorous slogans: first of all, the humorous element in the slogan might be unexpectedly ambiguous; secondly, because they are formulated partly or wholly in a foreign language, English or German-English humorous slogans might cause a slight surprise. In the

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[9] In response to a letter of complaint, the *Schlecker* spokesman said that the slogan was meant for people with a low or average level of education and not for the 5% of university graduates in German society that he belongs to (Brenner 2011).

course of this doctoral thesis, the element of surprise will constitute a major influencing factor with regard to slogan recall and the theories applied, namely frame-shifting, humour, relevance and predictive coding.

In summary, humour in slogans is as difficult to grasp as a definition of humour itself. What can be said at this point is that a humorous slogan always seems to involve surprise, but this is a very vague definition. In order to guarantee a certain homogeneity and thus comparability, this doctoral thesis will only include those humorous slogans in the two following studies that use wordplay to achieve a humorous effect. Slogans with puns can be clearly defined and can be designed in accordance with the list of specific criteria created for the studies. What is more, "humorous puns seem to be the most frequent way of creating humorous slogans" (Fuhrich and Schmid 2016: 139). The definition of puns will be the topic of the next subchapter.

3.2.3 Puns

The slogans to be examined later on in the studies are humorous because they include a pun. This is not always the case. There are also humorous slogans which are funny without making use of a specific wordplay – verbal humour is not only limited to the use of puns. Moreover, there are even puns that are not necessarily funny, puns can be serious, or poetic, too (Ahl 1988: 32, Okada 2012: 166, cf. Fuhrich and Schmid 2016: 139). For the purposes of this dissertation, however, a pun is to be understood as humorous and the term 'humorous slogan' is used for slogans which include a pun. But what exactly is a pun?

If there is one definition of puns that all scientists can agree on, it is the following: "all linguistic (and non-linguistic) analyses agree on the fact that puns involve two senses [...] here labelled S1 and S2" (Attardo 1994: 128). A pun always seems to be an expression which can be interpreted in two ways.

This very general definition of a pun also applies to advertising slogans which involve a (humorous) pun. *Tasty as can bee* for honey, for example – a slogan that was specifically created for the studies of this thesis – is a humorous, purely English slogan. It is a (monolingual English) pun because it involves two senses, with S2 (*be* in the sense of the verb *to be*) having the same language as S1

(*bee* in the sense of the animal that produces honey).

Humorous mixed-language slogans work accordingly: *Wisch you a happy day* for the wipe *Plenty* is funny because the English S1 (*wish* in the sense of the verb *to wish*) is pronounced identically to the German S2 (German *wisch* in the sense of the English verb 'to wipe'). This slogan therefore also involves two senses.

The humorous slogans used for the following study all use puns which are based on the ambiguity of specific words. However, ambiguity is not the only prerequisite for a word or a sentence to be a pun, as all words without context are ambiguous, for example (Attardo 1994: 133).

> Even the least ambiguous words, those which have an unambiguous sound-referent connection (i.e., refer unambiguously to one and only one class of objects in the non-linguistic world) – for instance, 'pterodactyl' – are still unspecified. Are we referring to a specific pterodactyl, or to 'the pterodactyl' as a class? (Attardo 1994: 133)

This was already stated in 1960 by an author from the field of advertising: "It is difficult to find many words in the English language that possess only one meaning" (Weir 1960: 50). Since all words taken out of context have two or more meanings (even if it is just the difference between specific or general reference), all words must therefore be puns, which is apparently not the case. Thus, "the two senses involved in a pun cannot be random, but have to be 'opposed' (i.e., semantically incompatible in context)" (Atttardo 1994: 133). To stick with Attardo's example, the word *pterodactyl* does not seem funny to us, although it could mean both *specific pterodactyl* and *pterodactyl in general*, because S1 and S2 are not opposed to each other.

This leads us to the *Semantic Script Theory of Humor* (Raskin 1985), which has the following main hypothesis:

> A text can be characterized as a single-joke-carrying text if […]
> (i) The text is compatible, fully or in part, with two different scripts
> (ii) The two scripts with which the text is compatible are opposite […].
> The two scripts with which some text is compatible are said to overlap fully or in part on this text (Raskin 1985: 99).

Scripts and humour theory will both be discussed in the study result analysis in chapter 4. At this point, however, it is important to note that this hypothesis sums up the main points: a pun needs two opposite scripts (such as an ambiguous word) with an overlap in order to be humorous.

3.2.4 Puns vs. wordplay

Is there a distinction to be made between the expressions 'pun' and 'wordplay'? There are some linguists (e.g. Redfern 1984 or Partington 2006) who do not think so[10]. Others argue that there is indeed a distinction. Professor Delia Chiaro, for example, sees the term 'play on words' as a generic term for puns. According to her, a wordplay may include puns, but not necessarily: "If a group of people were to be asked what they understood by the term 'word play', it would be pretty safe to say that most of them would answer in terms of jokes and puns" (Chiaro 1992: 17). Subcategories of wordplay include "an array of conceits ranging from puns and spoonerisms to wisecracks and funny stories" (Chiaro 1992: 4). Moeko Okada follows the same line of argumentation by stating that a "pun is one type of wordplay" (2012: 163), and so does Walter Nash, who describes the relation between pun and wordplay in the following poetical way:

> The management of humorous language is largely a matter of devising transfers – the transfer from set to set, from scale to scale, from layer to layer, until the happy confusion of a double vision is achieved. At the heart of this process of continual and multiple transference, an important process aping the shiftiness of thought itself, is the apparently frivolous device of the pun; word-play is the lure, the spinning toy,that draws up the lurking and fishy meaning. (Nash 1985: 137)

All in all, there are two different views to be found among linguists: some do not make a distinction between the terms 'pun' and 'wordplay' (Redfern, Partington), others see the pun as a subcategory of wordplay (Chiaro, Nash). Others again describe both views, saying that one view sees puns in a narrow or exclusive sense and that the other one sees them in a broad or inclusive one:

> The first sense refers to the case of what the layman calls 'a real pun' or a 'genuine' pun. Here either the polysemy of a single word (ie one form with multiple meanings) or the uses of homonyms or near homonyms (ie lexical items having identical or, less often, similar phonetic or graphic form but different meanings) are involved. [...]
> The second sense of the word 'pun' [...] is concerned with 'playing on words'. In this wider sense strict homonymy is not necessary; it is sufficient for a person to allude to a word or to distant formal similarities (Alexander 1997: 17-18).[11]

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[10] Partington, in his chapter on wordplay, phraseplay and relexicalisation (2006: 110-143), does not explicitly explain that he will be making no distinctions between 'wordplay' and 'pun', but uses the words interchangeably.

[11] Nevertheless, in one of his following chapters, Richard J. Alexander defines the term 'pun' as "to cover wordplay depending on lexical ambiguity" and categorises puns as revolving "around either phonological mechanisms (eg homophony) or semantic ones (eg polysemy [...])" (Alexander 1997: 75).

In summary, linguists do not agree on one definition of the two terms 'pun' and 'wordplay'. This thesis will join professor Walter Redfern and assistant professor Alan Partington in making no distinctions between pun and wordplay, as "trying to lasso the pun involves more lunges than contacts" (Redfern 1984: 21).

3.2.5 Effects of humour in advertising

Advertising with an additional entertainment factor has become increasingly popular, but was not always considered useful and effective. A statement often quoted is one made in 1927 by Claude Hopkins, an American copywriter, who is regularly mentioned in works about puns in advertising (Redfern 1984: 130, Tanaka 1994: 59-60, Beard 2008: 10): "Frivolity has no place in advertising. Nor has humour. Spending money is usually a serious business [...]. People do not buy from clowns" (Hopkins [1927] 1987: 183-184).

What is often forgotten, however, is that Hopkins also gives an exact description of American society in the late 20s and this relativizes his statements, which might otherwise seem very strict and prescriptive:

> Money represents life and work. It is highly respected. To most people, spending money in one direction means skimping in another. So money-spending usually has a serious purpose. People want full value. They want something worth more to them than the same amount spent in other ways would buy.
> Such subjects should not be treated lightly. No writer who really knows the average person will ever treat it lightly. Money comes slowly and by sacrifice. Few people have enough. The average person is constantly choosing between one way to spend and another (Hopkins [1927] 1987: 183).

It goes without saying that American society in 1927, with Black Thursday and the Depression of 1929 approaching, was completely different to today's society, which is often characterized as hedonistic and materialistic. The purchase of a product in the 21st century often occurs not out of a real need, but because of the hidden promise of enriching life. Of course, methods of advertising always have to be adapted to the specific circumstances of a society. Humorous advertising was not appropriate in those days, but nowadays it is.

The advantages of humour and especially puns in advertising are numerous. The definitions given above showed that puns involve an ambiguous word with at least two meanings. Using one word, advertisers can therefore evoke two associations for their brand (Redfern 1984: 130). For this reason, Redfern

(1984: 130) calls puns in advertising "highly economical".

Furthermore, a humorous slogan not only attracts attention, it sustains it, presumably because consumers exert more processing effort in order to understand the underlying humour, and therefore the slogan is sure to be remembered (cf. chapter 4 and 5):

> Once attention has been attracted, the advertiser's main desire is that his audience should consider, like, and remember the advertisement [...]. Because a pun takes longer to process, it sustains the addressee's attention over a period of time, and, once comprehended, it is often remembered. [...] Even if some people find a pun obscure or irritating, this will still be welcomed by the advertiser, for he considers that in terms of product recognition any reaction is better than none. Increased memorability is thus a major advantage derived from more processing effort (Tanaka 1994: 68-69).

The fact that consumers respond to humorous slogans is not the only argument in favour of their use; the relationship between consumers and advertisers is equally important.

First of all, seen from the perspective of advertisers, humour builds up consumers' trust in the product: "Humour, more specifically punning, is one way in which the advertiser attempts to improve social relations with his audience. If the addressee thinks that the advertiser is witty and amusing, it may go some way to overcoming her distrust of him" (Tanaka 1994: 59). Once distrust is reduced, humour and punning can even increase the popularity and acceptance of products:

> Advertisers [...] like to think being funny makes them seem more friendly and likable [...]. Consequently, they believe that making us laugh will encourage positive thoughts and feelings towards their products and brands and put [sic!] us in a receptive mood for their sales messages (Beard 2008: 2, cf. Klüver 2009: 40-41).

From the perspective of consumers, puns in slogans also convey the message that the manufacturer of the brand considers its consumers intelligent enough to understand the humour.

> Advertising simultaneously treats its consumers as intelligent (they must see the joke, make the connection, seize the allusion) [...] in that the satisfaction afforded by the former exercise will assist the ulterior aim of selling the product (Redfern 1984: 139).

Advertising makes consumers feel special, as if they belong to an elite – a chosen group of people who will understand the 'hidden' humorous message. An advertising campaign carried out in 2015 and 2016 by the consumer-electronics chain, *Saturn,* serves as a perfect example: printed advertisements promoted

specific products, one of which was a classical music CD for which the slogan was *Für alle, die wissen, dass Mahler nie 'nen Pinsel geschwungen hat* ('For all who know that Mahler never swung a paintbrush' – the name of the classical composer Mahler is a homophone to the German word *Maler*, i.e.'painter'). Another slogan, this time for a washing machine, was *Für alle, die wissen, dass Autoclean kein Waschprogramm ist* ('For all who know that autoclean is not a [car] washing programme'; in German, *Auto* means not only 'automatic', but also 'car'). The fact that these slogans are directed towards an exclusive group is expressed openly with the slogan beginning *Für alle, die [...]* ('for all who […]'). Consumers who do not connect the word 'Mahler' with a classical composer or who are not familiar with washing machine functions are excluded outright from the chosen consumer group. This also ensures that the appropriate target group will be the recipient of the advertising message.

At the same time, humorous slogans are constructed in such an obvious way that the majority of people can be expected to understand the pun. Even if readers of the *Saturn* advertisements do not know that 'autoclean' is a washing machine function, they will presumably be able to draw the right conclusions from the context given (advertisement for a washing machine, with name and picture of a specific washing machine given lower down in the advertisement) and connect it to the promoted item. This provides the answer to the question Redfern raised: "It could be that witty adverts, acting like passwords, are meant to appeal only to one section and to exclude the rest. But, then, why play this in-game of shibboleth on boardings and TV screens, where it is viewed by millions of people?" (Redfern 1984: 140).

Even though the *Saturn* printed advertisements have a narrow target group, they do not appear in specialist journals (in this case for classical music or household goods), but in media with a wide readership such as the *Sueddeutsche Zeitung Magazin,* a newspaper supplement with 1,14 million readers (SZ Media 2015: 2). In this way, the use of humour in slogans gives potential consumers the impression of belonging to an elitist group (from which others are excluded). However, puns in slogans are constructed and inserted so obviously that the majority of consumers should be able to understand them. Advertising with puns, in media with potentially large audiences, thus creates an artificial feeling of belonging to a specially chosen group in order to make consumers purchase the

corresponding products. "Laughing means 'I understand; I am on top of the situation.' Make your customers laugh or smile, and they will be grateful" (Georges et al. 2013: 108). The *Saturn* advertisements mentioned above go even further. Although they promote a specific product, it is not only the product that will be promoted, but also the chain itself. Even if the reader does not need a classical CD or a washing machine, in future they will associate *Saturn* with specific, exclusive products for a discerning public.

Another advantage of humorous slogans is that consumers feel entertained: "Advertisers also hope we'll see the entertainment value of their funny ads as a kind of reward for reading, watching, or listening" (Beard 2008: 2). This also increases the popularity of products and brands and might have a positive impact on consumer behaviour (Beard 2008: 2).

Concerning the selling potential of products which are advertised with wordplay, Okada (2012) proved that products which switch from non-humorous advertising slogans to slogans with wordplay tend to increase sales. Okada's study only involved a specific range of products (products encouraging students for their university entrance exams) and only examined Japanese slogans with wordplay, making it difficult to draw general conclusions, but it nevertheless indicates that the use of wordplay in slogans can be effective.

All in all, the advantages of puns in advertising slogans cannot be denied. With an ambiguous word in it, a slogan conveys two meanings at the same time. Puns create and strengthen three specific relationships: the interaction between consumers and slogans, the attitude of consumers towards advertisers and the attitude of advertisers towards consumers. Concerning the interaction between consumers and slogans, a humorous slogan attracts more attention and is presumably retained longer in the memory than a slogan without a pun. With regard to the attitude of consumers towards advertisers, the use of humour helps to build up trust in both the product and the brand and makes it attractive. As for the attitude of advertisers towards consumers, with the use of puns, advertisers can indirectly tell consumers that they think highly of them and find them intelligent, making them believe that they belong to a special, elite group of people who are able to understand the joke in the slogan. The entertainment factor of the slogan increases its positive reception. The use of humour in advertising is thus "one of those topics on which the advertising professional and academic researcher are in

complete agreement. Many studies have shown that humor does a great job of attracting attention" (Beard 2008: 2).

3.3 English elements in German advertising

The previous chapter did not only introduce the terms 'humour' and 'pun', but also examined the effects of humour in advertising. However, the trend for using of ambiguous words is not the only one in this field. There is also a trend for advertisers to use English or mixed-language German-English language elements in slogans (Hahn and Wermuth 2011: 6-11). What are the effects of these elements?

English elements in German advertising have been widely examined in a number of studies (Gawlitta 2000, Kupper 2003, Klüver 2009, Rech 2015), all of which come to similar conclusions, and are summed up by Stephanie Rech (2015: 127-131) in her doctoral thesis: English expresses internationalism and cosmopolitanism, modernity and hedonism. It is perceived as cool, trendy and hip and has a general appeal that embraces youthfulness, lifestyle and sophistication and is capable of connecting consumers with "a corresponding specific emotion experience, this is the essence of what is known as emotional product differentiation" (Rech 2015: 131).

These effects presumably also apply when it is not the entire slogan that is in English, but only a clause or phrase – as in mixed-language German-English slogans. Similarly to puns, which Redfern called "highly economical" (1984: 130) because of their two evoked meanings, well-constructed mixed-language slogans can also have the advantage of being economical. They evoke language-specific associations connected to German and English. This is Piller's (2003: 176) argument when she says that "mixing English into an advertising message in a non-English-speaking context becomes the linguistic equivalent of having one's cake and eating it, too".

Another way in which mixed-language slogans are similar to puns is that they, too, are intended to attract attention and make consumers think and possibly talk about them. However, it is not the humour which needs to be understood this

time, but the two languages involved in the slogan. The way consumers treat and process slogans containing puns or two languages therefore points to the fact that both humorous slogans and mixed-language slogans might have higher rates of recall than their non-humorous or monolingual counterparts (cf. chapter 4 and 5).

Concerning the relationship between advertisers and consumers, Piller states that "bilingualism is an element of the narratee's sophistication" (Piller 2001: 154). By assuming that their consumers understand the foreign language elements in slogans, advertisers make them feel special and sophisticated – although these English elements generally consist of rather simple and fairly well-known words. This advertising trick has a similar advantageous effect to the use of puns: understanding the play on words and laughing about it makes the consumer feel special.

By using mixed-language and/ or humorous slogans, companies certainly opt for all the advantages given above. However, the reasons for choosing them can also be of juridical nature: the ambiguity and originality of a slogan are official criteria for the European Court of Justice to protect a slogan by copyright (Mehler 2011).

In summary, mixed-language slogans seem to be capable of offering more to the consumer than a purely German or English slogan, as understanding the two languages involved and associating English words with special notions presumably adds a value to the slogan that monolingual slogans do not have. These assumptions will be verified in the following studies.

3.4 Previous work

Fuhrich and Schmid carried out their first research into the cognitive processing of different categories of advertising slogans in 2016. A pen and paper questionnaire was presented to 78 participants (63 female, 15 male), all of them students of English aged between 19 and 29 years and thus with a high level of education. The questionnaire consisted of three pages, the first of which listed 24 fictional advertising slogans and brand names. The slogans were classified into four categories: monolingual English slogans with wordplay, monolingual English slogans without wordplay, mixed-language German-English slogans with

wordplay and mixed-language German-English slogans without wordplay. The slogans were shown in randomised order on every questionnaire in order to avoid the fatigue effect. The study participants' task consisted of ticking a box whenever they found a slogan funny, thereby ensuring that every slogan had been cognitively processed. Page two of the questionnaire consisted of a simple distractor task in which participants had to find words that rhymed with the German and English words *Haus* and *house*. Page three presented an incomplete list of the slogans and brand names from page one and asked the participants to complete this list either with the brand or with the corresponding slogan.

The results of the statistically significant study indicated that humour and choice of language have a clear impact on recall rates. In this particular case, English monolingual slogans with wordplay could be recalled best, followed by mixed-language German-English slogans with wordplay. Non-humorous mixed-language slogans came third and non-humorous monolingual slogans came fourth. Applying John Sweller's (1988) *Cognitive Load Theory* and Sperber and Wilson's relevance theory (1995), we assumed that the cognitive charge involved in mixed-language slogans with wordplay for the processing of language switch and wordplay is too high. This might cause a cognitive overload, leading to a lower recall rate. Many questions, however, remained open, as this study had various limitations.

The first of the limitations mentioned above was that the questionnaire was answered by a very homogeneous group of young academics with a high proficiency in English. It is very likely that other target groups (such as older people or people with a lower educational background) would show other rates of recall.

Secondly, the 24 slogans and brand names used do not seem to have been sufficiently homogeneous. The number of brands mentioned was large and ranged from beer brands and telescope brands to snowboarding gear. Therefore, confounding through individual preferences and, consequently, positive or negative attitudes towards specific products might have played a role. What is more, some fictional brand names resembled existing brands, such as the postal service *PST* (with a resemblance to *Deutsche Post*) or the bedding company *Ritt* (*Betten Rid*).

The slogans, particularly the humorous ones, were constructed in a rather

heterogeneous way. Some slogans included the brand name as part of the wordplay (i.e. the cat food brand *Pöhr* was combined with the mixed-language slogan *Liebling deiner Katze - Pöhrrrr*), some consisted of a homographic wordplay (*I want it All* for a telescope brand – the German word *All* means 'galaxy'), whilst other wordplays were homophonic (*As tasty as can bee* for a honey brand). The degree of the wordplay also varied. On the one hand, the study included slogans which had a rather small degree of wordplay, such as an ambiguous morpheme within one word (*Simply good coPhi* for a coffee brand named *Phi*) or humorous slogans containing just one ambiguous word (*Fass dich nicht kurz. make it a Brief* 'Don't make it short, make it a letter' for a postal service). On the other hand, the study also included slogans with whole phrases which were ambiguous (*The popup you can't block* for a lemonade with a swing top). Also the use of punctuation in the slogans was inconsistent; question marks, hyphens and full stops were used in different ways.

One of the main limitations of the study was that it focused on English and German-English slogans and failed to include German ones, even though these make up a large proportion of German advertising.

These limitations and open questions resulted in the design of the two studies presented in this doctoral thesis. Strict attention is paid to the use of exact, precise and very homogeneous slogan constructions in combination with existing brand names. The current studies include monolingual humorous and non-humorous German slogans and use advanced statistical methods, such as mixed models and large data sets, in order to exclude confounds. What is more, rather than testing only one target group in advertising (such as young academics), the immediate recall rates for all target groups, including elderly people and consumers with lower educational background, were tested.

3.5 Aims of the present study

The present study examines rates of retention and recall for advertising slogans, which have been divided into six categories: monolingual German humorous, monolingual German non-humorous, monolingual English humorous, monolingual English non-humorous, mixed-language German-English humorous

and mixed-language German-English non-humorous. The target groups studied differ according to age, educational background and gender.

Depending on different age and gender groups with different educational backgrounds in order to draw hypotheses on retention and recall rates for each of the six slogan categories would involve many unpredictable variables and thus be more confusing than helpful. The general question to be answered in this study is the following: how do the factors 'monolingualism', 'bilingualism', 'wordplay' and 'no wordplay' influence the retention and recall performance of different target groups in advertising and thus influence the effectiveness of different advertising slogans?

An advanced statistical mixed-effects model will be helpful in analysing these data sets and drawing appropriate conclusions.

The answer to the question posed above can be given by designing and carrying out a study with the help of an online questionnaire. A description of that study will be the topic of the next chapter.

4. Study on immediate recall

The study described here tested 690 study participants of all ages and levels of education on their immediate recall rates concerning advertising slogans. The slogans were in German, German-English or English and either with or without wordplay.

In the following chapters, the design of the study will be described before moving on to a description and a discussion of the study results and rounding off with an interim summary of the study findings concerning immediate slogan recall.

The success of the following study depended on various factors, such as the choice of test groups, questionnaire setting and study design, as well as the choice of slogans and brand names. These factors will be discussed next.

4.1 Design

4.1.1 Test group and setting

690 subjects participated in the study on immediate retention and recall. In order to have study participants coming from very diverse backgrounds (and therefore belonging to different target groups in advertising), a factor had to be found that unifies people, regardless of their social status or age. One of the lowest common denominators for almost every human being is the love of animals. This is why a link to the online questionnaire was published in a Facebook group for German cat lovers, with every study participant having the chance to win a thank you gift box full of cat treats. This led to a high number of participants with the desired variation in age, gender and level of education, but it also meant that no cat-related or generally pet-related slogan was used for the study so that rates of recall would not be influenced by personal likes or dislikes.

The following table gives the exact numbers of study participants according to their age and level of education.

	16-30	31-45	46-60	61-90	Total
Second. general school level ('Hauptschule') or lower	57	33	19	1	110
Intermediate secondary school level ('Realschule')	130	54	27	3	214
University entrance level ('Abitur')	129	45	12	0	186
Advanced techn. college certificate ('Fachhochschule')	31	12	4	0	47
University degree ('Hochschulabschluss')	83	36	12	2	133

Table 1: Study participants according to age and education

4.1.2 Study design

After a successful pilot study, the same study design was used for the final study. In contrast to Fuhrich and Schmid's (2016) recall study, which used the pen-and-paper-method, the present studies were conducted with an online questionnaire so that as many target groups as possible – coming from different areas, cities and federal states in Germany – could be reached, making the study more representative of a nationwide German market. The online questionnaires were made available through the web-based survey provider *surveymonkey*, which met

the requirements of the study design. Study participants cannot go back a page once they have clicked on 'next', which prevents a potential revision of the answers given. Another programming feature allows every single questionnaire to show brand names and their slogans in random order in order to avoid fatigue effect.

Study participants click on a link which leads them to a five-page questionnaire. The questionnaire instructions are in German. This creates the German-language atmosphere consumers are exposed to outside the study conditions. Page 1 of the questionnaire asks study participants for information about themselves (age, gender, English language skills and highest school-leaving qualification)[12], guarantees that they will remain completely anonymous and informs them about the fact that they cannot go back to the previous page once they have clicked on 'next'. Pages 2-4 consist of the actual study. Page 5 thanks study subjects for their participation, explains the intended aim of the study and gives a contact email address for further questions. Subjects of the final study also have the opportunity to enter their email address if they want to participate in a prize draw.

The study itself (pages 2-4 of the online questionnaire) is divided into three parts. The first part consists of a questionnaire which lists brand names that are widely known in Germany, and gives corresponding fictional slogans. Both slogans and brand names are very carefully chosen so as to be as homogeneous and, therefore, comparable with each other as possible. The aim of the study is not revealed to the study subjects until the end so that they do not intentionally try to memorise the slogans.

Test persons are asked to tick a box when they think the slogan is humorous or funny. This ensures cognitive processing of the slogans. The following figure shows a screenshot of the processing task of one of the questionnaires.

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[12] The questionnaire does not ask about the potential bi- or multilingual background of German study participants, as the risk of this potential confound can be eliminated through the high number of study participants and the advanced statistical methods applied for the result analysis, which will even out individual differences.

Im Folgenden werden Ihnen Werbeslogans zu verschiedenen Marken präsentiert. Bitte kreuzen Sie diejenigen Slogans an, die Sie lustig finden.

* 5. Welche der folgenden Slogans finden Sie lustig? Bitte kreuzen Sie diejenigen an, die Sie lustig finden.

	Finde ich lustig
Lego Bausteine. Glückliche Kindheit: zum Selberbauen.	○
Colgate Zahncreme. Mit schönen Zähnen bringst du es - white.	○
Edamer Käse. Echter Geschmack: unser Käse.	○
InterSpar Lebensmittelgeschäft. The best ones: buy here.	○
KRASS Optik. Neue Brille - feels good.	○
Mömax Möbelhaus. Unsere Möbel - live with it.	○
Uncle Ben's Reis. Our rice - nature's best.	○
Adidas Sportschuhe. Schnelligkeit: das läuft.	○
Deutsche Post. Briefe - sie sind Gefühle.	○
Monster Energy Drink. Trink das - focus better.	○
Pizza Hut. Unsere Pizzen: einfach wundervoll.	○
Marlene Blütenhonig. This: as tasty as can bee.	○
Persil Waschmittel. Nimm unser Waschmittel: that's a weiß saying.	○
Air Berlin. With us, it's not only time that flies.	○

Figure 2: Study on immediate recall, sample processing task

The second part of the study (fig. 3) is a distractor task in which subjects are asked to find five words that rhyme with the German word *Haus* ('house'). This task ensures that they do not simply recall those slogans best that they read at the end of the slogan list. The number of rhyme words is limited to five so that study participants do not unnecessarily spend too much time on the distractor task. Study participants are asked to find German rhyme words rather than English ones in order to create a German language environment.

* 6. Bitte geben Sie nun fünf Wörter ein, die sich auf 'Haus' reimen.

Reimwort 1	
Reimwort 2	
Reimwort 3	
Reimwort 4	
Reimwort 5	

Figure 3: Study on immediate recall, distractor task

The third study part (fig. 4) is a recall task. Subjects are asked to reproduce the slogans they read previously: the brand name is given and they have to remember the matching slogan.

* 7. An welche Werbeslogans von Seite 2 können Sie sich noch erinnern? Bitte geben Sie bei den vorgegebenen Markennamen die dazugehörigen Slogans ein. Es macht nichts, wenn Sie sich nicht mehr an den genauen Wortlaut erinnern können: geben Sie einfach das ein, an was Sie sich noch erinnern können.

Lego Bausteine	
Marlene Blütenhonig	
Adidas Sportschuhe	
Persil Waschmittel	
Pizza Hut	
KRASS Optik	
Monster EnergyDrink	
Mömax Möbelhaus	
InterSpar Lebensmittelgeschäft	
Deutsche Post	
Uncle Ben's Reis	
Edamer Käse	
Air Berlin	
Colgate Zahncreme	

Figure 4: Study on immediate recall, sample recall task

The participants are not all given the same questionnaire with identical slogans; there are six questionnaire types in total. The brand-names mentioned in the six questionnaires are identical, but the slogans associated with those brand names are different. Six slogans were made up for each brand name: two are purely German (one humorous, the other one non-humorous), two are purely English (one humorous, the other one non-humorous) and two are mixed-language German-English (again, one humorous and the other one non-humorous). Each questionnaire lists only one out of the six slogans for each brand name. As there are six types of questionnaire, all six slogans will be tested in the end.

Test results were evaluated with the following gradual rating system.

Criteria	Points
Slogan is reproduced correctly	**1**
One word is wrong or missing (without a change of slogan meaning)	**0.75**
Message and/ or humour of the slogan is reproduced correctly, but more than one word missing/ wrong	**0.5**
Slogan keyword(s) are mentioned, but message and/or humour of the slogan is not reproduced correctly	**0.25**
Slogan is not reproduced at all, or made up	**0**

Table 2: Gradual rating system of study evaluation

This study design will offer new insights into the question whether slogan recall is higher for slogans that are monolingual (German or English) or mixed-language (German-English) and with or without wordplay. The design of the slogans and brand names used will be explained in the following chapter.

4.1.3 Choice of slogans

For the six questionnaire types, six categories with six slogans each were created: humorous monolingual English slogans, humorous monolingual German slogans, humorous mixed-language German-English slogans, non-humorous monolingual English slogans, non-humorous monolingual German slogans and non-humorous mixed-language German-English slogans. The following table facilitates slogan categorization.

	German	English	German-English
Humorous	Humorous German	Humorous English	Humorous German-English
Non-humorous	Non-humorous German	Non-humorous English	Non-humorous German-English

Table 3: Slogan design

Study subjects might already have (positive or negative) attitudes towards certain slogans which are already used in advertising – to avoid this potential confound, all slogans were invented. In order to make the slogans more comparable to each other, the mixed-language slogans within these categories all begin with German and end with English. This is because of Luna and Peracchio's claim that the consumer's focus is on the language the slogan switches to, with consumers associating the slogan with the values of the language used in the second part of the slogan (Luna and Peracchio 2005a: 760, cf. 2005b: 53). As a supportive measure for creating a German-language environment, the questionnaire instructions are in German and subjects are asked to find five German rhyme words in the distractor task.

The confound risk that the humour behind slogans with wordplay might not be understood properly is controlled through the processing task in the pilot study: humorous slogans which are not perceived as funny are taken out for the final study. The risk of other confounds is reduced by the following extensive list of criteria that both slogans and brand names have to fulfill, as this makes them as homogeneous (and therefore as comparable to each other) as possible.

Study slogans do not refer to anything sexual (Raskin 1985: 148-179). Therefore, the slogan *Slippery when wet* for a condom brand name such as *durex* cannot be used, as it includes sexual references and could thus have different rates of retention and recall than slogans without sexual references (cf. Chestnut, LaChance and Lubitz 1977; Belch, Belch, Holgerson and Koppman 1982; Heckler, Jackson and Reichert 2001; Brown, Pope and Voges 2004).

As another example, if there were a well-known gravel plant company, *We will rock you* would not be possible as a study slogan because it not only refers to the material collected by the gravel plant – rocks – but also to knowledge about pop culture (in this case, to the song *We will rock you* performed by the band

Queen). The same applies to the *Colgate* slogan *Shine like a diamond*, as the reference to a *Rihanna* song might only be understood by a rather young target group. In general, slogans which require a specific knowledge in order to understand the wordplay (such as ethnic or political humour, as Raskin (1985: 180-246) describes it) are excluded.

Strong emotions (such as *For the ones we love* for the *Pampers* nappy brand name, or *Letters are love* for the German postal service *Deutsche Post*) are not included in the slogans, because, like sexual references, they might influence slogan retention rates. Negative expressions, such as *to hate*, increase stress-levels of potential consumers (Bittner and Schwarz 2014: 37-38), emotional advertising messages have a higher rate of recall than neutral ones (Friestad and Thorson 1986) and, generally speaking, "most past and current research demonstrates that recall and emotion are interconnected" (Mehta and Purvis 2006: 54).

None of the slogans consist of a question such as *Can you live with it?* (*IKEA)*. In accordance with the list of criteria, and to ensure homogeneity, all slogans are constructed as simple statements which always end with a full stop. The product relating to the brand name is either mentioned in the slogan (a slogan for noodles says *Our noodles [...]*, a pizza slogan says *Our pizzas [...]* etc.) or the slogan implies a reference to the product (*Beautiful teeth* for *Colgate*, *furniture* for the furniture company *Mömax*, *feet* or *velocity* for *Adidas* etc.). However, so that recall capabilities can be appropriately tested, no slogan explicitly mentions the name of the brand.

No dialect is used (*Unsere Nudeln Sun lecker*, with *Sun* being a homophone to the Bavarian word *san* 'are') and all slogans consist of two phrases which are separated by a punctuation mark, but not a full stop, as this would split a mixed-language slogan into two monolingual parts: *e.g. Kein Schein, only shine* as opposed to *Kein Schein. Only Shine.*for *Colgate*).

Advertising agencies generally avoid slogans which are negative or which contain a negation, as negative aspects could then be associated with the brand name (Bittner and Schwarz 2014: 37-38) or influence slogan evaluation (France, Park and Shah 1994: 583). Since the study wants to be of help to copywriters, it imitates the advertising market and does not use negative slogans either. Thus, a *Deutsche Post* slogan such as *Bei uns nicht: sein eigenes Päckchen tragen* cannot be used because consumers might only remember the negative part *sein eigenes*

Päckchen tragen – 'having a share of trouble', 'having a cross to bear'. The *Colgate* slogan *Das geht zu white* also has an overall negative message and can therefore not be used for the study.

Another general rule in advertising is that slogans should be short ("Write short sentences. For our brain, simple and easy is good", Georges, Bayle-Tourtoulou and Badoc 2013: 65). Slogans tend to be short and concise by nature, and in this study also, attention was paid to the fact that they should not be too lengthy.

Each of the humorous slogans in this study contains a wordplay based on one ambiguous word (with two different frames which need to be activated). This seems obvious at first, but puns can also be based on morphemes or phrases. Other slogans achieve a humorous effect, but do not contain a specific wordplay (such as the *IKEA* slogan *We want you to come but we'll beg you to leave*). These slogans are humorous because the entire slogan is ambiguous and not just one specific word. They are most definitely worth examining, but cannot be treated in this study.

The wordplay in the mixed-language slogans consists of either a purely English pun or a German-English one. Purely German wordplay in a German-English advertising slogan has not been included (e.g. a slogan for the *Playstation* brand name: *Du willst Spielchen? Come get some*) because the puns should be based on the (salient, Luna and Peracchio 2005a: 760) language to which the slogan switches.

Each brand name has six different slogans, all of which are tested in six different types of questionnaire. Although these slogans are monolingual or mixed-language, humorous or non-humorous, they are constructed with a largely similar content. The three categories of non-humorous slogans have almost identical content, the only difference being the language they are written in. It was more difficult to find a purely German, a purely English and a mixed-language German-English wordplay built around the same content for the three categories of humorous slogans. Nevertheless, as far as possible, the same imagery has been used. *Colgate*, for example, has the three humorous slogans *Schöne Zähne: unsere neue Weiß-Sagung, Beautiful teeth – world-white* and *Mit schönen Zähnen bringst du es – white*, which revolve around the key words *teeth* and *white*.

A final criterion for the study slogans is that every slogan, even the non-

humorous ones, should be formulated in an original, creative and unique way. Platitudes such as *Auch im Winter ein Genuß* are to be avoided. Admittedly, this is a rather subjective criterion, but the comparability of dull slogans and other, more original ones is limited and dull slogans should thus be avoided.

These criteria for the design and choice of advertising slogans ensure that all slogans used in the study are as homogeneous and comparable to each other as possible. However, there are a few cases in which slogans using wordplay deviate slightly from the norm; these will be examined in chapter 4.2.4. To begin with, however, the choice of brand names needs to be clearly defined so that the subsequent study can be as conclusive as possible.

4.1.4 Choice of brand names

As mentioned above, slogans with sexual references are not included in the study because they might have a higher rate of recall than non-sexual slogans (Chestnut, LaChance and Lubitz 1977; Belch, Belch, Holgerson and Koppman 1982; Heckler, Jackson and Reichert 2001; Brown, Pope and Voges 2004). Since erotic brand names such as *Beate Uhse* or *Playboy* might have the same effect, the recall rates for these cannot be treated in the same way as those for non-erotic brand names. For the purpose of this thesis, erotic brand names are therefore excluded.

The study subjects belong to target groups which vary significantly in age, gender and educational background. It is therefore essential that the brand names chosen for the study are known to every target group so that every slogan is processed with equal attention. For example, the Internet streaming service *Netflix* might be familiar to young, trend-conscious people, but older consumers have possibly never heard of this brand name before, therefore they might not process the corresponding slogan as well as slogans for other brand names. This could lead to lower recall rates.

Similarly, the chosen brand names should not only be known to every target group, but they should also be of interest to them. While the multinational clothing corporation *Urban Outfitters* is potentially very interesting for young, trend-conscious consumers, elderly consumers might not take a great interest in that particular style of clothing and, again, fail to process and recall the

corresponding slogan as well as others.

This is in keeping with the criterion that every brand name should be of interest to both genders. Brand names which are rather gender-specific, such as motorcycle or make-up brands, have not been included.

Having taken all of these slogan and brand name criteria into account, 84 slogans were invented for 14 genuinely existing brand names. In order to minimize potential confounds, the recall for the slogans was tested in 6 different questionnaires.

The following table shows the 14 brands and 84 slogans used and also indicates which slogan was used in which questionnaire. The numbers in brackets indicate the use of the slogans in the six questionnaire types (type 1 to 6). In questionnaire type 2, for example, all the slogans marked with a *[2]* were used. Thus, questionnaire type 2 includes the *Deutsche Post* slogan *Choose us, get it*, the *Colgate* slogan *Schöne Zähne: unsere neue weiß Sagung*, the *Marlene Blütenhonig* slogan *Ideal geeignet – for breakfast and cooking* etc.

	Mixed-language German-English	Monolingual English	Monolingual German
1	**Deutsche Post**		
Humorous	Fass dich nicht kurz, make it a Brief. [1]	Choose us, get it. [2]	Bei uns kriegen Sie: das ganze Paket. [3]
Non-humorous	Briefe – they are emotions. [4]	Letters – they are emotions. [5]	Briefe – sie sind Gefühle. [6]
2	**Colgate Zahncreme**		
Humorous	Mit schönen Zähnen bringst du es – white. [6]	Beautiful teeth: world-white. [1]	Schöne Zähne: unsere neue weiß Sagung. [2]
Non-humorous	Mit uns: brilliant shine. [5]	With us – brilliant shine. [4]	Mit uns: brillanter Glanz. [3]
3	**Marlene Blütenhonig**		
Humorous	Suchtgefahr – bee aware. [5]	This: as tasty as can bee. [6]	Produziert von: Biene MmmJa. [1]
Non-humorous	Ideal geeignet – for breakfast and cooking. [2]	Perfect – for breakfast and cooking. [3]	Ideal geeignet – für Frühstück und Kochen. [4]
4	**Adidas Sportschuhe**		
Humorous	Fast zufrieden – run	Feet: your appetite for	Schnelligkeit: das läuft.

	faster. [4]	velocity. [5]	[6]
Non-humorous	Geschwindigkeit macht Spaß – with our shoes. [1]	Velocity is fun – with our shoes. [2]	Geschwindigkeit macht Spaß – mit unseren Schuhen. [3]
5	**Lego Bausteine**		
Humorous	Glückliche Kindheit – under construction. [4]	Building: childhood memories. [5]	Glückliche Kindheit: zum Selberbauen. [6]
Non-humorous	Mit uns: the fun can begin. [1]	With us: the fun can begin. [2]	Unser Spielzeug: der Spaß kann beginnen. [3]
6	**Monster Energy Drink**		
Humorous	Genie – in a bottle. [3]	In our bottle: the new kind of power supply. [4]	In unserer Flasche: deine Energiereserven. [5]
Non-humorous	Trink das – focus better. [6]	Drink this – focus better. [1]	Trink das – für mehr Konzentration. [2]
7	**Uncle Ben's Reis**		
Humorous	Reis – and shine. [2]	Rice – and shine. [3]	Eine Packung – Reis euch vom Hocker. [4]
Non-humorous	Unser Reis – nature's best. [5]	Our rice – nature's best. [6]	Unser Reis – das Beste der Natur. [1]
8	**Edamer Käse**		
Humorous	Echter Geschmack – just in Käs. [1]	Say: cheese. [2]	Unser Käse: weils uns nicht Wurscht ist. [3]
Non-humorous	Echter Geschmack: our cheese. [4]	The real taste: our cheese. [5]	Echter Geschmack: unser Käse. [6]
9	**Mömax Möbelhaus**		
Humorous	Unsere Möbel – live with it. [6]	Our furniture – live with it. [1]	Unsere Möbel – damit kann ich gut leben. [2]
Non-humorous	Möbel – to live with. [3]	Furniture – to live with. [4]	Möbel – zum damit leben. [5]
10	**KRASS Optik**		
Humorous	Gute Brillen – sight 1978. [3]	Our glasses: a good sight. [4]	Unsere Brillen: für die mit Durchblick. [5]
Non-humorous	Neue Brille – feels good. [6]	New glasses – feel good. [1]	Neue Brille – fühlt sich gut an. [2]
11	**InterSpar Lebensmittelgeschäft**		
Humorous	Der Vogel sagt: cheap. [2]	Shopping, not shocking. [3]	Einkauf bei uns: ein gutes Geschäft. [4]

Non-humorous	Gewinner: they buy here. [5]	The best ones: buy here. [6]	Gewinner: sie kaufen hier. [1]
12	**Pizza Hut**		
Humorous	Unsere Pizzen sind nicht süß, but herbs. [1]	Our Pizzas: this is eat. [2]	Unsere Pizzen: das iss gut. [3]
Non-humorous	Unsere Pizzen: simply wonderful. [4]	Our pizzas: simply wonderful. [5]	Unsere Pizzen: einfach wundervoll. [6]
13	**Persil Waschmittel**		
Humorous	Nimm unser Waschmittel: that's a weiß saying. [6]	Take us – and the future is bright. [1]	Über Nacht: eine weiße Weste. [2]
Non-humorous	Ultrastarke Waschkraft – it can be so easy. [3]	Ultrastrong washing powder – it can be so easy. [4]	Ultrastarke Waschkraft – es kann so leicht sein. [5]
14	**Air Berlin**		
Humorous	Reise – and shine.[13] [5]	With us, it's not only time that flies. [6]	Haben Sie bei uns immer: Höhenflüge. [1]
Non-humorous	Bequemes Fliegen, made easy. [2]	Comfortable flying, made easy. [3]	Bequemes Fliegen, leicht gemacht. [4]

Table 4: List of slogans and brands used in the studies

4.2 Results

The results of the first study will be described in the following section. Slogan-related factors will be discussed first, followed by target-group-related factors and then the interactions between slogan-related and target-group-related factors. Slogans with deviating wordplay will be examined before moving on to the application of linguistic theories in order to provide an explanation for the study results.

The inferential statistics necessary for a conclusive analysis were carried out with version 0.99.893 of *RStudio* (R Core Team 2014). In all chapters, linear mixed models with a normal distribution (Fahrmeir et al. 2013) were calculated with the *gam*-function and its package *mgcv* (Wood 2006).

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[13] As *Reise – and shine* (*Air Berlin*) and *Reis – and shine* (*Uncle Ben's Reis*) are very similar, these two slogans do not appear in the same questionnaire.

4.2.1 Slogan-related factors

Humour

The use of wordplay in a slogan increases retention and recall rates significantly. The following boxplot illustrates this.
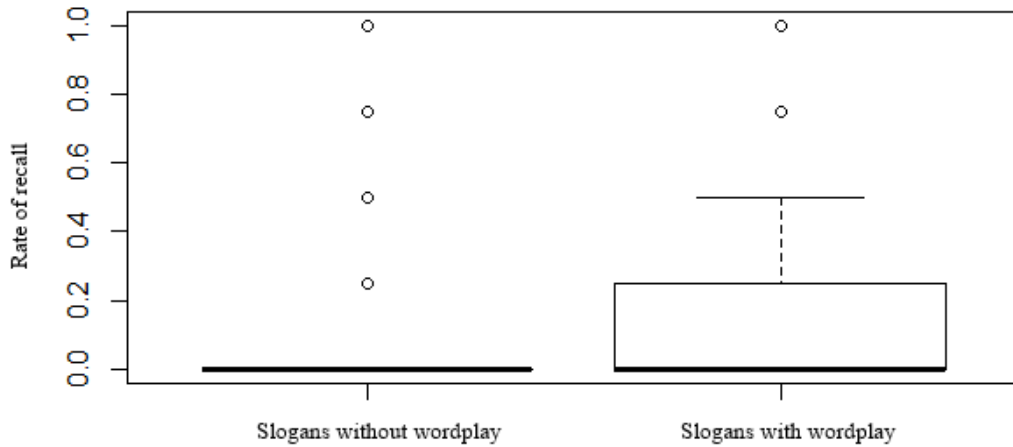
Figure 5: Recall rates of non-humorous vs. humorous slogans, immediate recall - boxplot

It is apparent that slogans with wordplay (on the right hand side of the boxplot) are remembered better than slogans without wordplay (on the left hand side).

A barplot reveals more details.
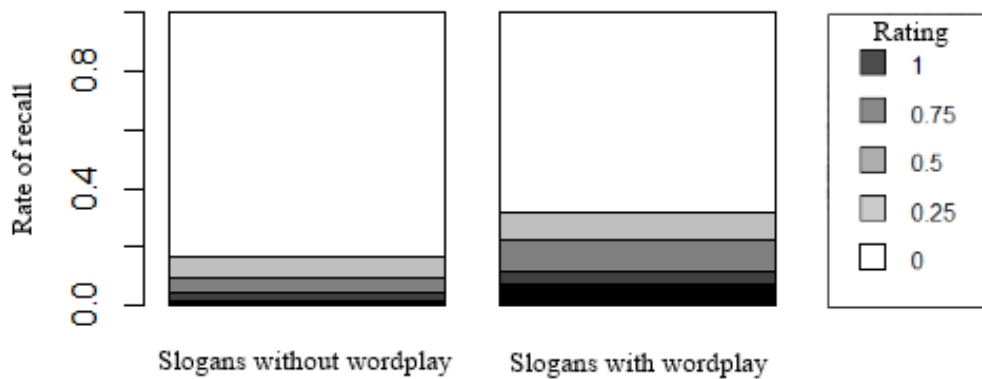
Figure 6: Recall rates of non-humorous vs. humorous slogans, immediate recall - barplot

While a higher recall of humorous slogans was already indicated in the boxplot, the barplot demonstrates in addition that single keywords in particular (rated with 0.25 points) and the overall message of the slogan (rated with 0.5 points) can be better recalled when the slogan involves wordplay. Furthermore, correct or almost

correct slogan recall (rated with 1 point or 0.75 points) is slightly more frequent with humorous slogans.

Inferential statistics also produce clear results with ß = 0.0709222 and p < 0.001) (see appendix), meaning that subjects with a general secondary school qualification (this education level is one of the reference categories of the statistical model) have a recall for humorous German slogans (this language is also one of the reference categories) which is higher by a factor of 0.0285086 in comparison to non-humorous German slogans, given that all other factors remain constant.

Both inferential and descriptive statistics thus point towards the conclusion that including wordplays is an effective way of making sure that consumers memorize a slogan. However, there are more factors to be taken into account: with regard to slogan design, could a mixed-language slogan also trigger higher retention and recall rates? How does a combination of two languages and wordplay affect those rates? Bearing in mind the recipients of a slogan, not every target group will recall the same slogans. A 19 year old male teenager with a general secondary school qualification ('Hauptschule') might recall different slogans to a 63 year old female with a university degree. Slogan design and target group factors and the influence of both on retention and recall will be analysed in the following.

Language

While the effect of humour on the retention and recall of slogans is undeniable, the influence of the use of specific languages such as English or German-English is not as clear. The boxplot below depicts the influence of specific languages on recall:
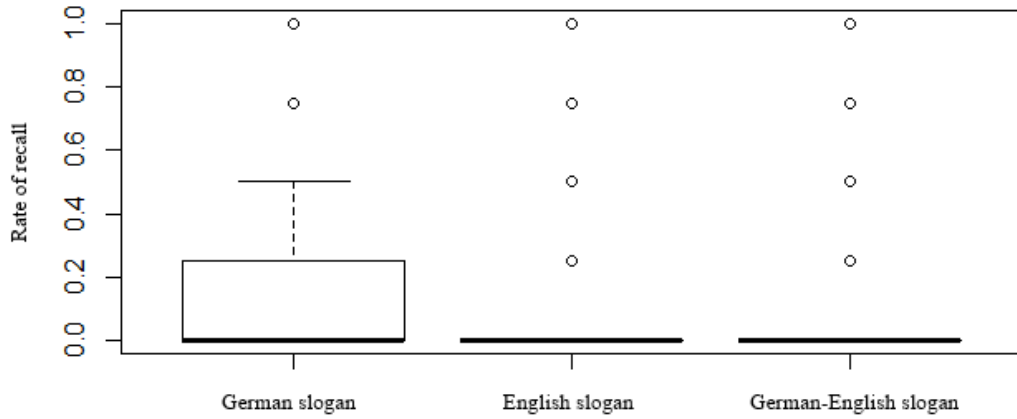
Figure 7: Recall rates of German, English and German-English slogans, immediate recall - boxplot

The boxplot above is rather inconclusive. German slogans seem to have the highest rate of recall, but it is only possible to measure the difference between recall rates of English and German-English slogans and look more closely at German slogan recall rates by referring to a barplot.
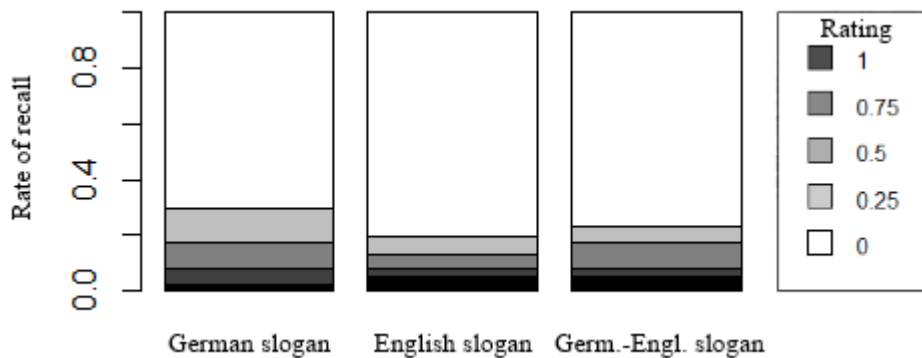
Figure 8: Recall rates of German, English and German-English slogans, immediate recall - barplot

Without examining specific target groups (and without differentiating between humorous and non-humorous slogans), it seems that purely German slogans are recalled best, followed by German-English and then English slogans. German slogans take the lead particularly when it comes to recalling specific keywords (0.25 rating points). Remarkably, complete recall was highest for English and German-English slogans (1 point), but the difference between them is rather small.

Further analysis of this figure is inconclusive, since important influencing factors such as humour and target group are not taken into account in this calculation. At this point, however, it is important to note that the choice of language for a specific advertising slogan does indeed influence slogan retention and recall. Inferential statistics back up this view, with negative estimates for both English (ß = -0.0593430, p < 0.001) and German-English (ß = -0.0661218, p < 0.001) slogans.

Both the factors 'humour' and 'language' are thus very likely to influence slogan retention and recall. However, the combination of these two factors has not been looked into so far and will therefore be the next topic.

Humour:Language

The mosaic plot below illustrates the effects of a feature combination.
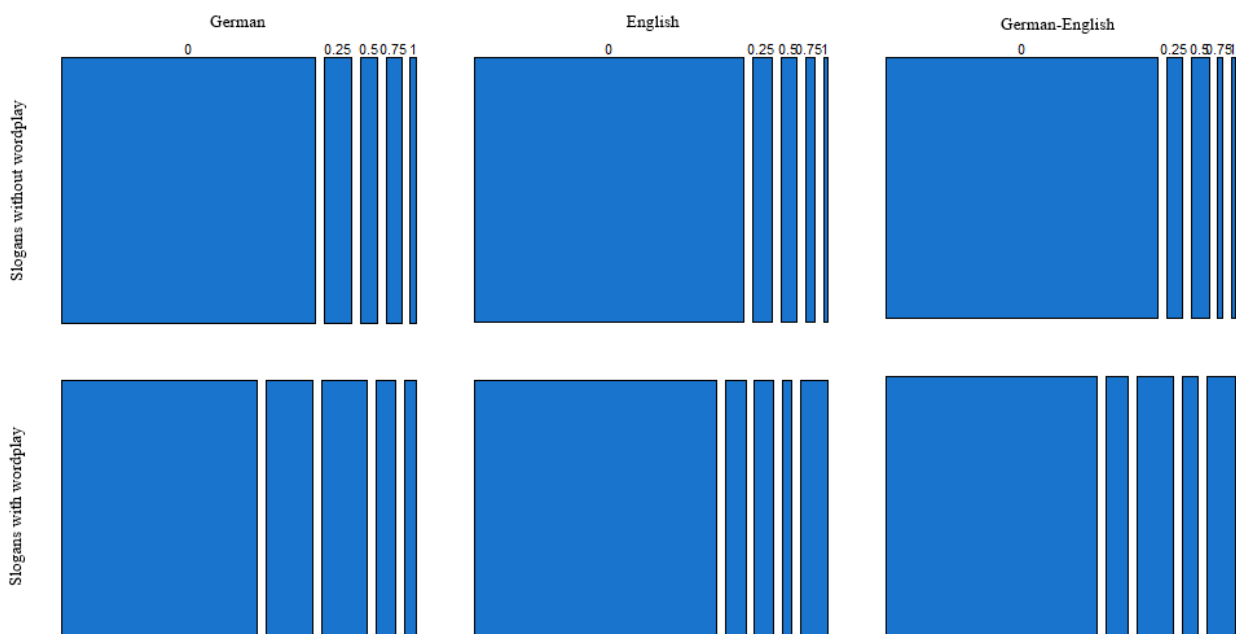
Figure 9: Recall rates of slogans with a feature combination, immediate recall

As in the previous figures, the numbers above the different bars represent the rating points that were attributed to no, partial, or complete slogan recall (table 2). Regardless of whether they are in German, English or German and English, it is apparent that slogans with wordplay (second row) have higher rates of recall than slogans without wordplay (first row). On further inspection, the differences

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between the use of German (first column), English (second column) and German and English (third column) also become clear, especially when the specific ratings are examined more closely. Non-humorous slogans in all languages tend to be recalled partially, i.e. study subjects recall keywords and the overall message, but a complete slogan recall is very rare. Humorous German slogans follow the same pattern, but humorous English and German-English slogans show an increase in complete slogan recall compared to the other slogan categories. The example of German-English humorous slogans appears to be an exception to this with study subjects having best recall for the overall message and/ or the humour of the slogan, closely followed by a high rate of complete slogan recall.

Inferential statistics show ß = 0.0581591, p < 0.001 for the interaction between the factors 'humour' and 'German-English' and ß = -0.0089735, p > 0.05 for the interaction between the factors 'humour' and 'English'.

By now, we have gained some initial insights into the effects that advertising slogans have on consumers' retention and recall capabilities, particularly when it comes to the use of humour and two languages. However, there are factors influencing recall that are not dependent on the slogan construction itself, but on the person processing the slogan. Age, gender and level of education might affect the way a potential consumer processes and recalls an advertising slogan. These factors will be analysed in the following.

4.2.2 Target-group-related factors

Gender

Does gender have an influence on slogan retention and recall? It undoubtedly does when slogans advertise gender-specific products such as make-up or beard-trimming accessories. In this thesis, however, all products are as gender-neutral as possible. Does gender then still play a role?

Gender was tested as a potential factor and included in one of the first versions of the statistical linear mixed model, but was shown not to have any significant effect. Descriptive statistics show that the biggest gender difference in recall is 0.005 recall points, which is too small to be of relevance. Thus, the factor

'gender' will not be considered in further analyses. The remaining target-group specific factors that might influence slogan recall capabilities – level of education and age – will be analysed next.

Age

The following boxplot shows that clear differences between the five age groups can be expected regarding slogan recall.
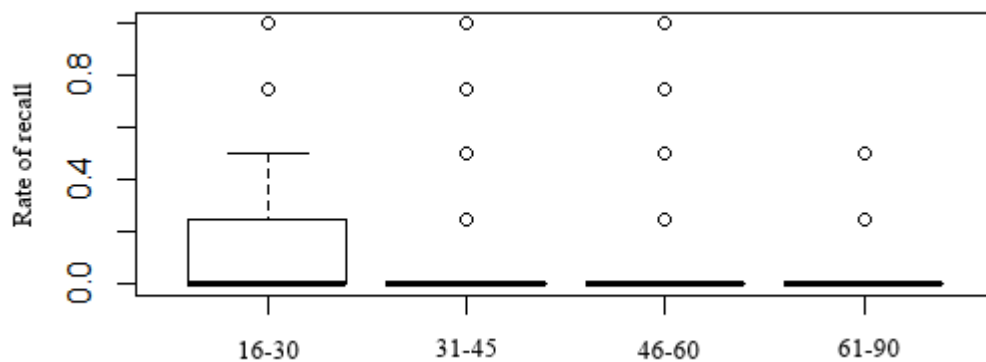
Figure 10: Recall rates of different age groups, immediate recall - boxplot
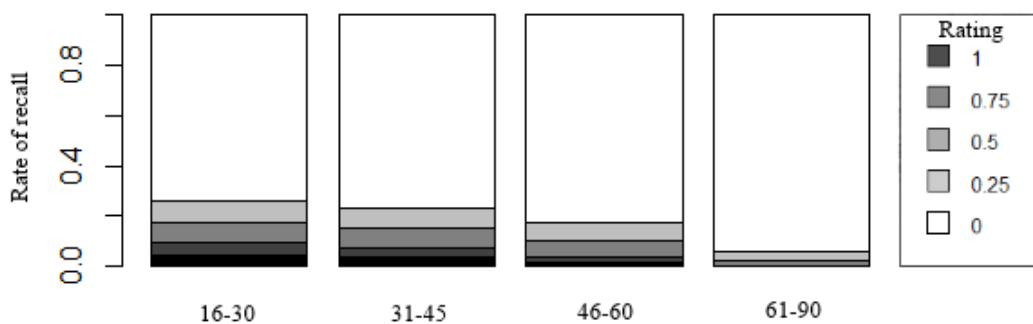
Figure 11: Recall rates of different age groups, immediate recall - barplot

The additional barplot reveals that recall rates decrease continuously with age. This is also confirmed by inferential statistics which show a negative estimate (ß = -0.0010894, p < 0.05).

Education

The boxplot below illustrates the differences between specific levels of education and their recall rates.
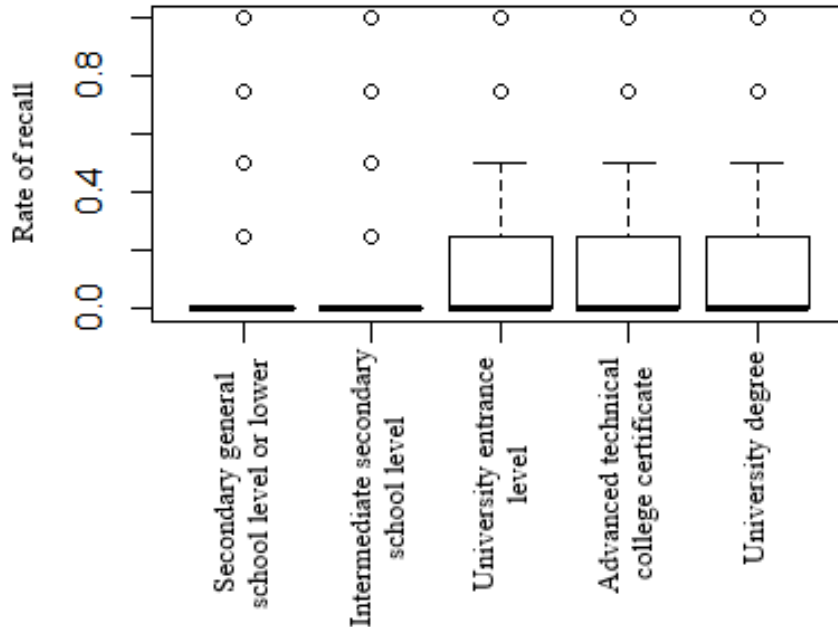
Figure 12: Recall rates of different levels of education, immediate recall - boxplot

The higher levels of education (university entrance level ('Abitur') and above) seem to have a higher recall rate than lower levels of education (intermediate secondary school levels ('Realschule') and below). With the university entrance level as a dividing line, levels of education below university entrance qualification will be referred to as 'lower levels of education' and university entrance levels and above will be referred to as 'higher levels of education'.[14]

Details are visible in the following barplot:

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[14] This is based on the *International Standard Classification of Education* (*ISCED*) which defines all levels of education up to an intermediate secondary general school level as 'lower secondary' (UNESCO 2011: 29; Bohlinger 2012: 18). While the *ISCED* further differentiates between medium and high levels of education, this thesis will condense all other levels of education to the term 'higher levels of education', as only the most common (and thus for the advertising world most relevant) educational levels have been examined.
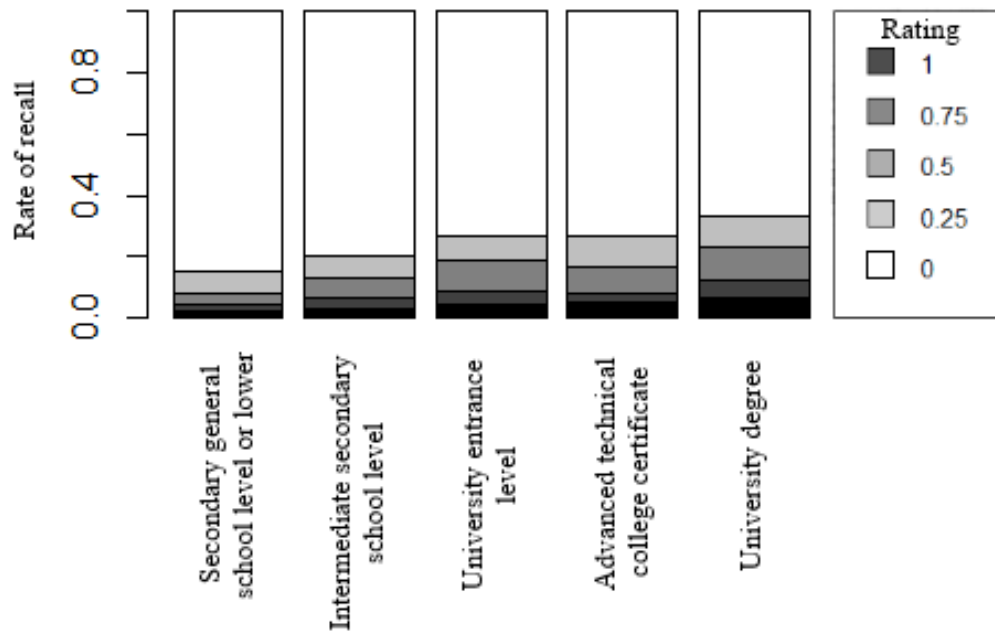
Figure 13: Recall rates of different levels of education, immediate recall - barplot

The barplot illustrates that subjects with a higher level of education have higher rates of recall. Recall rates are thus almost continuously growing from left (secondary general school level ('Hauptschule') or lower) to right (university degree). The only exceptions are subjects with an advanced technical college certificate ('Fachhochschule'), whose total recall rate is the same rather than higher than that of subjects at university entrance level.

The linear mixed model shows the values ß = 0.0126279, p > 0.05 for intermediate secondary school level ('Realschule'), ß = 0.0003714, p > 0.05 for university entrance level ('Abitur'), ß = 0.0189317, p > 0.05 for advanced technical college certificate ('Fachhochschule') level and ß = 0.0276850, p > 0.05 for university degree ('Hochschule') level. The interaction between influencing factors such as wordplay or choice of language and the variable 'education' will be the topic of the next chapter.

4.2.3 Interactions between slogan-related and target group-related factors - wordplay and language:education

Introduction

The previous sections described slogan-related and target-group-related factors independently of each other. As a next step, the interactions between the slogan-related factors 'wordplay' and 'language' and the target-group-related factor 'education' will be illustrated with respect to all six slogan categories. Even with 690 study participants, a representative number of subjects for all possible combinations of age groups and education levels cannot be guaranteed. For this reason inferential statistics calculated with the *predict*-function in *RStudio* have been used in the following figure in order to fill the gaps. (See appendix for all calculated values and additional graphics.) The previous differentiation in 0 to 1 recall points is thus replaced by average recall points, with a maximum average recall score of 0.35.

In accordance with the study, the following figures differentiate between 5 education levels. As fig.12 showed, the university entrance level seems to constitute a dividing line with regard to recall rates, separating lower levels of education (with lower rates of recall) from higher levels of education (with higher rates of recall). Wordplay has a similarly decisive influence on slogan recall (fig. 5 and 6). This will be considered in the following figures, which will be divided into lower and higher levels of education and slogans with and without wordplay.

The 'lower education level' group consists of subjects with no school-leaving qualification or with a general secondary school qualification ('Hauptschule')[15]; 'intermediate school level' refers to subjects with an intermediate secondary school qualification ('Realschule'). These education levels in combination with wordplay and without wordplay are shown in the first figure (14). The second figure (15) then shows the 'higher education level' group, consisting of subjects with a university entrance qualification ('Abitur'), advanced technical college certificate ('Fachhochschule') or university degree ('Allgemeine

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[15] 'No school-leaving qualification' and 'general secondary school level' are not treated separately because subjects of both education levels have received the same basic (English) education and are assumed to have left school at a comparable point of time.

Hochschule'), which is the highest education level referred to in this study. Similarly, the recall rates of these education levels will be shown in combination with wordplay and without wordplay.

The figures below will answer the following questions: how do different levels of education interact with the use of wordplay, and how do they interact with the use of different languages?

Language:education

Lower level of education

The figures reveal two major results concerning the interaction between 'education' and 'language'. The first result pertains to target groups, represented in the following figure, with a level of education lower than university entrance qualification.

Slogans with wordplay

Slogans without wordplay
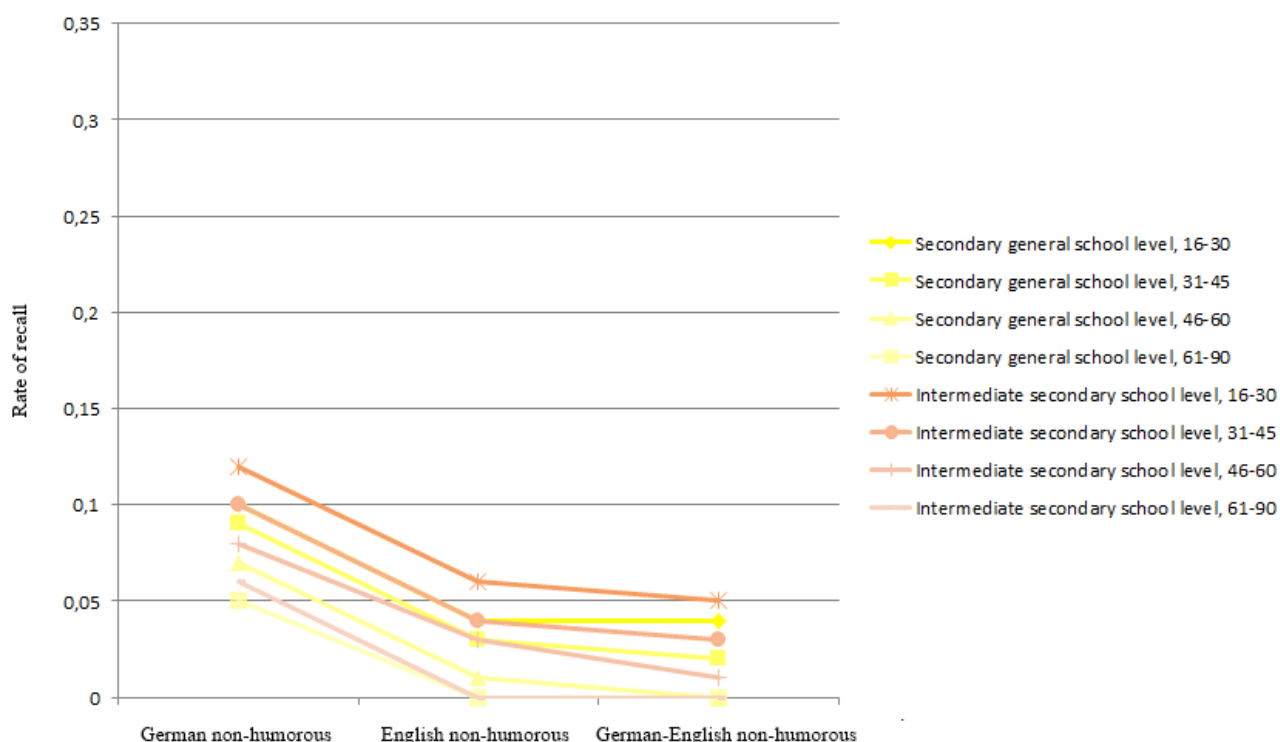
Figure 14: Recall rates of slogans with and without wordplay for subjects with lower levels of education

Regarding slogans with wordplay, German monolingual slogans are recalled best. German-English humorous slogans come second and English humorous ones come third. This tends to be applicable for all age groups[16]. Similarly, regarding slogans without wordplay, German slogans are also recalled best by all age groups. It is difficult to draw general conclusions with respect to English and German-English non-humorous slogans, as recall rates for them are either very similar or non-existent. Older subjects in particular do not recall any slogans with English elements, whether monolingual English or mixed-language German-English. Overall, the recall rate for monolingual English non-humorous slogans tends to be slightly higher. A general recall ranking for all age groups with a level of education lower than a university entrance level is as follows:

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[16] The only slight exception is the group of 61-90 year olds with a secondary general school level or lower: with both 0.01 recall points, German humorous slogans have the same recall rate as German-English humorous ones (and not a higher one as in the other cases).

Intermediate secondary school level, secondary general school level or lower
1. German slogans with wordplay
2. German-English slogans with wordplay
3. English slogans with wordplay
4. German slogans without wordplay
5. English slogans without wordplay
6. German-English slogans without wordplay

The linear mixed model gives the values ß = 0.0044151, p > 0.05 for the interaction 'English':'Intermediate secondary school level' and ß = -0.0036816, p > 0.05 for the interaction 'German-English':'Intermediate secondary school level'.

Higher level of education

The second result concerns target groups which have a university entrance level qualification or even higher qualifications, such as an advanced technical college certificate or a university degree. The recall rates of these groups are shown in the following figure.

Slogans with wordplay
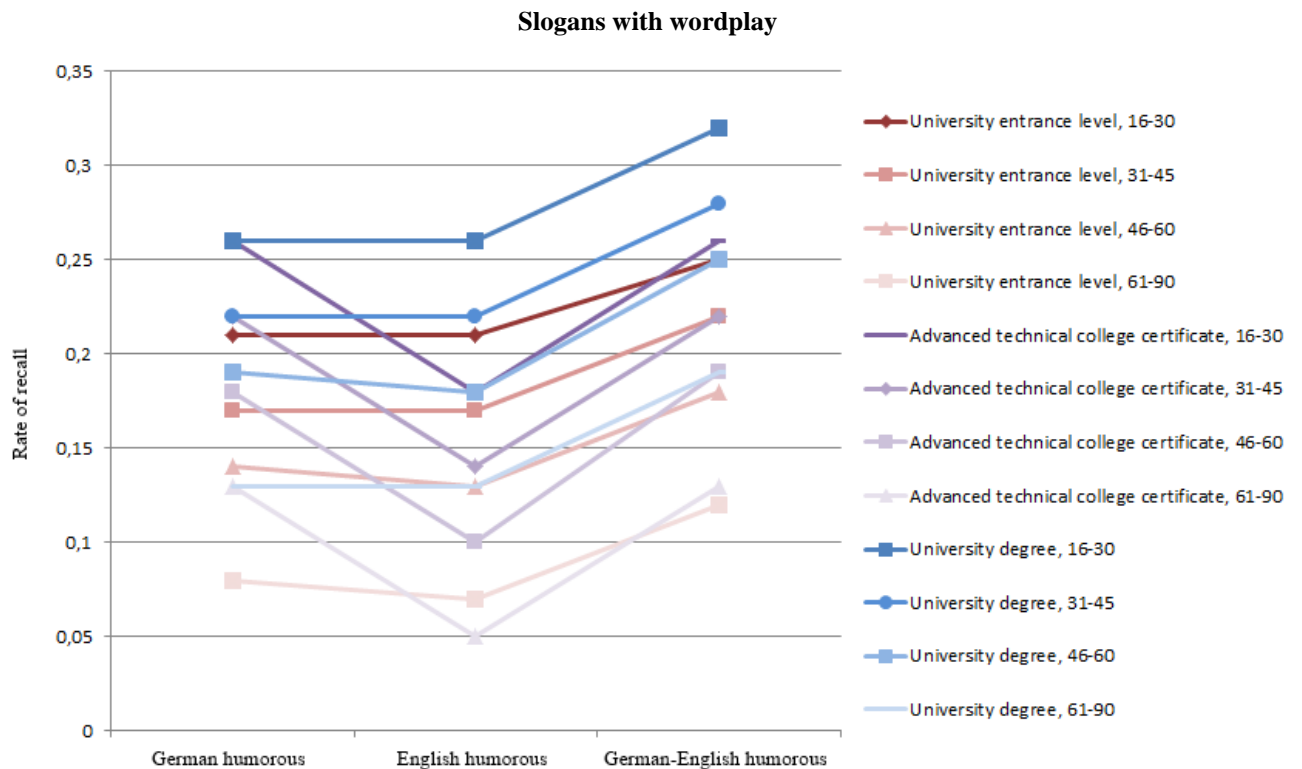
Slogans without wordplay
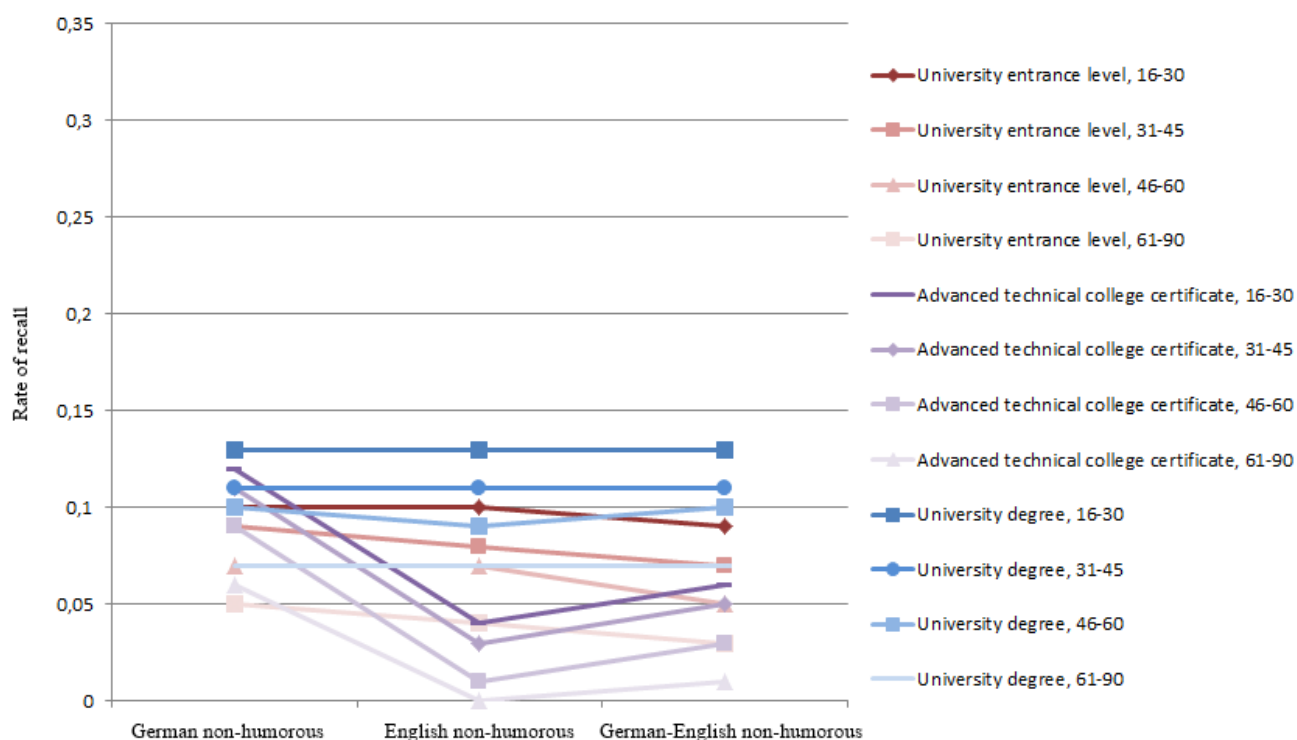
Figure 15: Recall rates of slogans with and without wordplay for subjects with higher levels of education

This group needs a more detailed analysis than the first one, as results are more diverse. The recall rates of subjects with an advanced technical college certificate generally follow patterns that are different from those of subjects at university entrance level or with a university degree.

Regarding slogans with wordplay, German-English slogans are always recalled best. Subjects with a university entrance level and a university degree then have almost equal recall rates for English and German humorous slogans, but the recall rate for German humorous slogans is slightly higher in some cases[17]. By contrast, subjects with an advanced technical college certificate have similar recall rates for German humorous slogans and German-English humorous ones, with a slightly higher recall rate for German-English humorous slogans in the group of

---

[17] University entrance level, 46-60: Slightly better recall rate for German humorous slogans (0.14) than for English humorous slogans (0.13) with a difference of 0.01
University entrance level, 61-90: Slightly better recall rate for German humorous slogans (0.08) than for English humorous slogans (0.07) with a difference of 0.01
University degree, 46-60: Slightly better recall rate for German humorous slogans (0.19) than for English humorous slogans (0.18) with a difference of 0.01

46 to 60 year olds.[18] This group clearly has a lower recall rate for humorous slogans in English only.

Regarding slogans without wordplay, subjects with a university entrance level recall German non-humorous slogans best; this rate is closely followed by that for English non-humorous slogans which is the same as for German ones in two of the age groups (age groups 16-30 and 46-60), but slightly lower in the other two (31-45 and 61-90)[19]. The recall rate for German-English slogans comes last; however, the recall rates for all slogan categories are very close. Subjects with a university degree continue this tendency, with almost equal recall for all three non-humorous slogan categories, with the exception of the group of 46-60 year olds which has slightly less recall for English non-humorous slogans[20]. Subjects with an advanced technical college certificate contradict this tendency with widely diverging recall rates; German non-humorous slogans are clearly recalled best and English ones come second, followed by German-English ones.

It would not be worthwhile at this point to present an overview comparing the results for subjects with a higher level of education with those for subjects with a lower level of education; the specific recall results are so diverse that it is almost impossible to draw general conclusions at this stage. A detailed analysis which will enable valid deductions will follow in chapter 4.3.

Inferential statistics show the following estimates and p-values for the interactions between language and all levels of education:

	Estimate English	p-value English	Estimate Germ.-Engl.	p-value Germ.-Engl.
Intermediate secondary school level	0.0044151	0.806639 *(n.s.)*	-0.0036816	0.837719 *(n.s.)*
University entrance level	0.0556923	0.002576 *(p < 0.01)*	0.0498617	0.006632 *(p < 0.01)*

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[18] 46-60: Slightly better recall rate for German-English humorous slogans (0.19) than for German humorous slogans (0.18) with a difference of 0.01

[19] 31-45: German non-humorous slogans 0.09 recall points, English non-humorous slogans 0.08 recall points

61-90: German non-humorous slogans 0.05 recall points, English non-humorous slogans 0.04 recall points

[20] 46-60: Slightly better recall rate for German and German-English non-humorous slogans (0.1) than for English non-humorous ones (0.09) with a difference of 0.01

Advanced technical college certificate	-0.0189223	0.479554 *(n.s.)*	0.0088435	0.740258 *(n.s.)*
University degree	0.0514041	0.009767 *(p < 0.01)*	0.0665885	0.000822 *(p < 0.001)*

Table 5: P-values and estimates for the interactions language:education

Wordplay:Education

In figure 14 (subjects with lower levels of education) as well as in figure 15 (subjects with higher levels of education), recall rates of the first chart (slogans with wordplay) tend to be higher than those of the second (slogans without wordplay). Thus, regardless of the study subjects' education, slogan recall has a tendency to be higher for humorous slogans and lower for non-humorous ones. Some exceptions can be found in figure 14, which represents lower educational backgrounds and often shows that the rates of recall for German non-humorous slogans are equal to or higher than those for English or German-English humorous ones. Nevertheless, the linear mixed model shows positive estimates for all interactions between levels of education and use of wordplay, which means that recall rates for slogans with wordplay tend to rise with a higher level of education.

	estimate	p-value
	Interaction with wordplay	Interaction with wordplay
Intermediate secondary school level	0.0309023	0.036324 *(p < 0.05)*
University entrance level	0.0636035	3.13e-05 *(p < 0.001)*
Advanced technical college certificate	0.0939014	1.84e-05 *(p < 0.001)*
University degree	0.0879772	7.52e-08 *(p < 0.001)*

Table 6: Estimates and p-values for the interactions wordplay:education

4.2.4 Deviating wordplay

The study design consists of 14 everyday products, each of which has six differently designed slogans. Three of the six slogan designs are humorous and include wordplay. The long list of slogan design criteria in chapter 4.1.3 demonstrates that the slogans were constructed with the utmost care, in order to be extremely homogeneous and thus comparable, although some of the wordplays were designed slightly differently to others in order to achieve the desired humorous effect. Eight of the 42 slogans with wordplay use slightly differing wordplay constructions. Two have compound-wordplays in which only a part of the compound is ambiguous (*Beautiful teeth – world-white* and *Schöne Zähne – unsere neue weiß Sagung*, for *Colgate* toothpaste), rather than one completely ambiguous word. One slogan involves a sound (*Produziert von: Biene MmmJa* for *Marlene* honey), three include a wordplay at the beginning rather than at the end (*Feet: your appetite for velocity* for *Adidas* shoes, *Building: childhood memories* for *Lego* toys and *Genie – in a bottle* for *Monster* energy drink). The *Monster* energy drink slogan has a homographic rather than a homophonic pun and so does the slogan *Unsere Pizzen sind nicht süß, but herbs* for *Pizza Hut*. Finally, with *Shopping, not shocking*, the wordplay of the *InterSpar* grocery chain slogan uses an imperfect rhyme. As a consequence, slogans which belong to the same category (German, English or German-English with wordplay) show an internal variation which needs to be considered separately, as it might confound study results.

Descriptive statistics show a clear difference between the recall rates of these eight slogans and the more homogeneously designed ones.
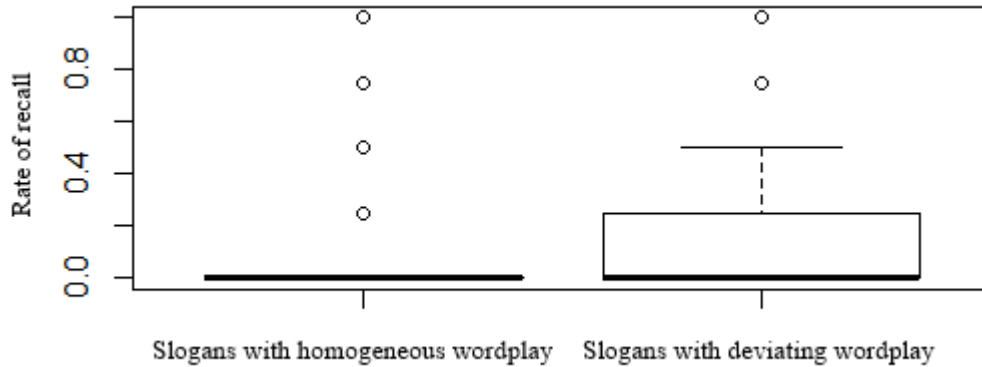
Figure 16: Slogans with homogeneous wordplay vs. slogans with deviating wordplay, immediate recall - boxplot

More details can be shown with a barplot:
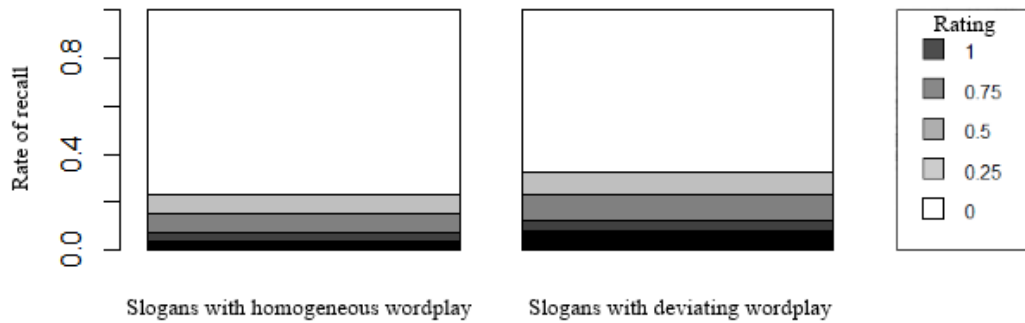
Figure 17: Slogans with homogeneous wordplay vs. slogans with deviating wordplay, immediate recall - barplot

This barplot illustrates that slogan recall, whether partial or complete, is generally higher for slogans with deviating wordplay than for slogans with homogeneous wordplay.

Inferential statistics support the descriptive results: the statistical values of slogans with homogeneous wordplay show a negative estimate (ß = -0.0394521, p < 0.001). Subjects with a basic secondary school qualification had a recall rate for humorous German slogans with homogeneous wordplay that was lower than the recall for humorous German slogans with deviating wordplay by a factor of -0.0394521, given that all other variables remain constant.

Although slogans with deviating wordplay have an influence on recall, they do not interfere with the effects and statistical significance of other variables. A linear mixed model calculated without the data from slogans with deviating

wordplay does not change the overall interpretation of the remaining variables and their interactions; estimates, for example, do not change their negative or positive signs. This is why I shall continue to use the data of slogans with deviating wordplays in the study.

4.2.5 Interim summary

Results so far indicate that some factors influence slogan recall positively. The use of wordplay in slogan design proves to be significant for a high slogan recall. The use of English or German-English instead of just German is advantageous to a certain degree, depending on the groups targeted and on whether a slogan includes wordplay. With regard to the target groups themselves, age and, to some extent, the level of education, need to be taken into consideration, but not gender.

The following factors need to be considered when choosing an effective advertising slogan:

Wordplay. The use of wordplay in slogans, whether they are in German, English or German-English, always has a positive impact on recall rates and is recommended for the next coming years.

Language. The most efficient use of German, English, or even German and English at the same time, depends largely on the targeted consumer group. The right slogan choice leads to a higher rate of recall by specific target groups. The next chapter will investigate-specific recall rates more closely.

Age. When a product and the corresponding slogan are designed for consumers of all ages, the slogan can be expected to have a lower rate of recall by elderly consumers, regardless of whether it is mixed-language or monolingual, humorous or non-humorous (although slogans with wordplay have a higher initial recall rate). It might be possible to improve older people's slogan recall by advertising more frequently in media for elderly consumers, e.g. in relevant magazines, newspaper supplements etc. in order to bring the slogan back to memory.

Education. Slogans need to be designed in different ways, according to the consumers' level of education and on their specific age, i.e. they have to use different languages in order to achieve the best rate of recall. The discussion in the next chapter will expand on this point.

Gender. This factor does not have to be considered for gender-neutral products and slogans. Of course, once the product is aimed at a specific gender, or the slogan is designed in such a way that only one gender feels addressed, this finding no longer applies.

4.3 Discussion[21]

The previous chapters presented first study results, bringing us a large step closer to understanding the effectiveness of different advertising slogan designs for different target groups. More important than describing patterns, however, is to understand the mechanisms underlying them. This chapter will analyse the present results with the help of different linguistic theories, namely frame theory, relevance theory and humour theory.

Frame theory will be treated first, making it possible to identify frame-violations in mixed-language slogans without wordplay. The next step will be to apply relevance theory in order to examine mixed-language and monolingual slogans without wordplay and their specific relevance to consumers. After an analysis of slogans without wordplay, we will then turn to slogans with wordplay and identify their script oppositions using humour theory, and their specific relevance using relevance theory. Lastly, relevance theory will be applied to all slogans with and without wordplay and to their specific interactions with subjects with lower and higher educational qualification. The discussion of the results for slogans with deviating wordplay and an interim summary will round off this chapter.

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[21] Chapters 4.3.1 and 4.3.3 include revised ideas from my unpublished 'Magisterarbeit' (Fuhrich 2013).

4.3.1 Frame theory and mixed-language slogans without wordplay

Frame theory

The study has shown that the use of mixed-language German-English slogans leads to different rates of recall than the rate for monolingual German or English slogans. Whether this recall is higher or lower largely depends on the examined target groups and whether the mixed-language slogans are combined with wordplay. But before looking at these groups in detail, this section will explain the general cognitive mechanisms involved in the processing of mixed-language slogans. In order to understand these mechanisms, a closer look needs to be taken at scripts and frames.

Originally used by Minsky (1974) as a framework for Artificial Intelligence – and, before Minsky, as a term in psychology (Attardo 1994: 199), the basis of frame theory had already been defined before it was transferred to the field of linguistics:

> Here is the essence of the theory: When one encounters a new situation (or makes a substantial change in one's view of the present problem) one selects from memory a structure called a *frame*. […]

> A *frame* is a data-structure for representing a stereotyped situation, like being in a certain kind of living room, or going to a child's birthday party. Attached to each frame are several kinds of information. Some of this information is about how to use the frame. Some is about what one can expect to happen next. Some is about what to do if these expectations are not confirmed (Minsky 1974).

By programming machines with frames and their contents, machines should consequently be able to act in a similar way to humans. As Minsky's goal was to imitate the way humans think, it did not take long for his frame theory to be transferred into the field of linguistics by Fillmore in 1976 (Bublitz 2001: 156, Ungerer and Schmid 2006: 207) and then taken up by various linguists who came up with different definitions of a frame.

Ungerer and Schmid followed up the various changes taking place concerning the definition of a frame and concluded that the term 'frame' is now a term that belongs in the field of cognitive linguistics, having moved away from the field of artificial intelligence. Defining a frame is thus no longer associated with the aim of making machines act more like humans. A frame now includes the

expectations humans have for certain kinds of situations, and "all these expectations that are based on our experience and stored in our long-term memory are part of the frame-system and influence our ability to produce and understand the language related to it" (Ungerer and Schmid 2006: 213).

Words can therefore be defined with respect to a frame, a "system of categories structured in accordance with some motivating context" (Fillmore 1982: 119) or, as Fauconnier and Sweetser (1996: 5) put it, "structured understandings of the way aspects of the world function. […] General human capacities appear to include the ability (and the need) to set up frames". These frames are motivated by "human experiences, social institutions and cultural practices" (Coulson 2001: 18; cf. Fillmore 1982: 135) and are always set up by words, "regardless of whether those frames apply to actual, representational, or hypothetical referents" (Coulson 2001: 20). Coulson shows this with the term *bachelor*, which is used as a description for an unmarried man. Does this definition make the Pope a bachelor? Most people would say no, as "the definition of a bachelor relies on the existence of a frame, or set of propositions that represent common assumptions about the normal course of a man's life in Western society" (Coulson 2001: 18-19), and as the *bachelor*-frame does not go with the *Pope*-frame (which includes the fact that the Pope does not lead a normal man's life).

Fauconnier and Sweetser (1996: 5) give another frame example: when people talk about a house and somebody mentions *the front door*, no one asks *what front door?* Everyone knows that there probably is a front door, simply from a complex understanding of the kind of object in question - the *house*-frame.

The use of frames also goes beyond semantics. People use frames in cognitive tasks such as "perception, planning, and memory for events" (Coulson and Matlock 2009: 104). They "have been used to explain human ability to make inferences in complex situations, to make default assumptions about unmentioned aspects of situations, and to make predictions about the consequences of actions" (Coulson and Matlock 2009: 104). Inferences and default assumptions are also essential elements of processing advertising slogans. The creation, violation and shifting of frames in mixed-language advertising slogans will now be examined more closely.

Frames applied to slogans without wordplay

As soon as there is a frame-shifting cue (something that does not agree with the hitherto established frame), the frame-shifting process starts. The recipient of the advertising slogan will "search working memory for something that can be reinterpreted" and "begins to evoke a frame to structure the initial space" (Coulson 2001: 57). The space is then expanded and the object changes; a reinterpretation of the information provided takes place (Coulson 2001: 56-57). Frame-shifting thus seems to be "prompted by a violation of slot-filling constraints. Speakers don't fail to interpret these sorts of examples, but respond by creating a new frame in which slot-filling can proceed" (Coulson 2001: 58).

A (non-humorous) mixed-language slogan such as *Mit uns: brilliant shine* for the toothpaste brand *Colgate* might thus first establish a German-language advertising frame which will then be removed once the potential consumer understands the frame-shifting cue that the following words are not German anymore, but English. The analysis of mixed-language slogans with the help of frame-shifting is not as straightforward as it might seem at first, though, as we do not know which frame will be activated next. An English-language advertising frame is one possibility, a mixed-language frame or no frame at all might be other options. These different options have been discussed by Fuhrich and Schmid:

> […] since mixed-language slogans still seem to be rare, it is unlikely that a mixed-language slogan frame is available. This means that the consumer's mind has two options: it can switch to a frame representing English-language slogans derived from experience with the increasing number of slogans of this type, or it can process the rest of the slogan without support by frame-based knowledge. As we do not have any evidence on which of these options is more likely and have to assume that there is considerable individual variation, we will resort to the least far-reaching claim that a *frame-violation* takes place. (Fuhrich and Schmid 2016: 139).

Although the second frame shifted to can only be assumed, a frame-violation certainly takes place. This process already involves a "disappointment of expectations" (Fuhrich and Schmid 2016: 139) and thus leads to a higher cognitive processing effort. This processing effort, in turn, might influence the rate of retention and recall: "Retention is a function of depth, and various factors, such as the amount of attention devoted to a stimulus, its compatibility with the analyzing structures, and the processing time available, will determine the depth to which it is processed" (Craik and Lockhart 1972: 676; cf. Craik and Tulving

1975). Since higher cognitive processing implies more attention and a longer processing time, mixed-language slogans with a frame-violation might have a higher rate of recall than monolingual ones without frame-violation (Fuhrich and Schmid 2016).

In this context, it should also be noted that a frame-violation might also take place in the case of the first monolingual English advertising slogans processed by the subjects, as Fuhrich and Schmid have already stated in their study:

> As participants were instructed in German, and as their native and dominant language is indeed German, it is possible that the required switch from German to English was sufficient for reaching a deeper level of processing. In addition, even though English-language slogans are increasingly used on the German market […], it could be the case that they are still less familiar to many consumers than German-language slogans and therefore not represented by equally strong frame-based knowledge (Fuhrich and Schmid 2016: 151).

However, this is a relatively weak influencing factor after having processed the first monolingual English slogans presented, subjects should be prepared for them (Fuhrich and Schmid 2016: 151).

The descriptive figures 7 and 8 and the negative estimates for the factor 'German-English' (ß = -0.0661218, p < 0.001) prove that the violation or shifting of frames does indeed have an impact on recall. This impact does not trigger recall which is any higher than that for monolingual German slogans. This can be seen from the target-group specific figures 14 and 15 as well as from the corresponding negative estimate rates of the statistical model. Mixed-language slogans without wordplay have either very low or even the lowest recall rates although the higher cognitive charge of a frame-violation in mixed-language slogans might have the potential to induce higher rates of recall than the cognitive charge of monolingual German or English non-humorous slogans. There must be some other cognitive mechanism apart from the processing of frames which has an impact on how well non-humorous slogans are retained in the memory. The missing link is relevance theory, which will be explained in the next chapter.

4.3.2 Relevance theory and mixed-language and monolingual slogans without wordplay

Relevance theory

After a brief explanation of relevance theory, this chapter will apply relevance theory to mixed-language and monolingual slogans without wordplay. The next chapter will then move on to the analysis of slogans with wordplay.

Relevance theory, in short, is a means of utterance interpretation which centres on relevance, a "theoretical term to refer to the cognitive utility of a piece of information in a context, or for an individual at a given time" (Sperber and Wilson 1996: 531), involving the two aspects 'cognitive effect' (the benefit) and processing effort (the cost) (Sperber and Wilson 1995, cf. Fuhrich and Schmid 2016: 152). The cognitive effect allows "fixation or revision of beliefs" (Sperber and Wilson 1996: 531), whereas the processing cost represents a specific amount of brain resources which has to be used in order to process an utterance. Thus, a piece of information is less relevant when the processing costs are high. When the benefit is high, however, a piece of information is more relevant (Sperber and Wilson 1996: 531). This leads Sperber and Wilson to the following summary of relevance:

> *Relevance*
>
> (a) Other things being equal, the greater the contextual effect achieved by the processing of a given piece of information, the greater its relevance for the individual who processes it.
> (b) Other things being equal, the greater the effort involved in the processing of a given piece of information, the smaller its relevance for the individual who processes it.
> (Sperber and Wilson 1992: 67).

What does this mean for human communication? Sperber and Wilson (1992: 67) argue that the desired aim in communication is to have maximal relevance, which is achieved by having minimal processing costs and maximal benefit. Communication can thus be defined based on the 'principle of relevance':

> To communicate is, among other things, to claim someone's attention, and hence to demand some expenditure of effort. People will not pay attention unless they expect to obtain information that is rich enough in contextual effects to be relevant to them. Hence, to communicate is to imply that the stimulus used (for example. the utterance) is worth the audience's attention. Any utterance addressed to someone automatically conveys a presumption of its own relevance. This fact, we call the *principle of relevance* (Sperber and Wilson 1992: 68).

When communicating (and thus also when processing an advertising slogan), we expect the communicated utterances to be of relevance to us, i.e. to involve "adequate effect on the one hand, and a presumption of minimally necessary effort on the other" (Sperber and Wilson 1992: 68). If this is not the case, we will not pay attention to the communicated (advertising slogan) message. Communication thus involves mechanisms in our brain as well as a certain communicative behaviour. The principle of relevance can therefore be split into two subordinate principles: the 'Cognitive Principle of Relevance' ("human cognition tends to be geared to the maximisation of relevance", Sperber and Wilson 1995: 260) and the 'Communicative Principle of Relevance' ("every act of ostensive communication communicates a presumption of its own optimal relevance", Sperber and Wilson 1995: 260).

A visit to the university canteen serves as a good example for relevance theory. You go there with a friend of yours because you want to eat lunch together. As you enter the canteen and study the menu, your friend asks you: "What are they serving today?" You could answer with the following:

(a) *Food*.

(b) *Fish and chips*.

(c) *Fish and chips and children love to blow bubbles*.

The answer with maximal relevance is (b), as (a) does not give us enough effect, that is, not enough benefit from the piece of information. In comparison, answer (c) gives us adequate benefit, but the processing cost – the effort – is too high, as we also have to process the irrelevant piece of information about a children's pastime. Answer (b), however, gives us both adequate benefit and minimally necessary effort.

The relevance of a specific utterance is assumed to influence recall. We will not pay increased attention to the communicated meaning if it is not relevant to us (Sperber and Wilson 1992: 68) and, as a consequence, we might not be able to recall it. Specific parts of an utterance might be retained and recalled either better or differently than others. For example, the utterance *Smith is a better doctor than Jones, Jones is a better doctor than Williams* might simply be stored in memory as *Smith is the best doctor*, as this reduces memory load and requires fewer inferential steps (Sperber and Wilson 2012: 287). Equally, if the answer given in the university canteen example above is (c) *Fish and chips and children*

love to blow bubbles, it is likely that only the first part of the sentence will be stored in the memory, as it is the only relevant part in the situation given. However, it is important to keep in mind throughout the following studies that relevance is a hypothetical construct which is not directly linked to recall. In the case of the present studies, recall rather helps to assume certain degrees of relevance for certain slogan constructions.

Before turning to the studies, however, we will come back to the cognitive processing mechanisms of advertising slogans and examine the form of an utterance (in this case, the languages used in advertising slogans) and its influence on relevance.

Relevance applied to slogans without wordplay

The previous chapter pointed out that the non-humorous mixed-language slogans in this study tend to have lower recall rates than non-humorous monolingual German or English ones. Frame theory alone fails to deliver an explanation for this, as the frame-violation due to two languages is assumed to induce higher cognitive processing and might thus also have the potential to lead to a higher rate of recall. Relevance theory provides the answer. Higher cognitive processing due to frame-violation requires more processing effort and thus a higher cost. By comparison, the side of the cognitive effect, the benefit, has almost nothing to offer to potential consumers. Just like monolingual English and German slogans, the mixed-language slogan gives potentially useful information about the product as a benefit, but the processing effort required to gain this information is greater than that required for monolingual slogans. Mixed-language advertising slogans are thus less effective and require the most effort, which are therefore assumed to have little relevance. The study subjects do not retain the slogan. This interpretation is in line with the statistical model, predicting a negative estimate for the general factor 'German-English' (ß = -0.0661218, p < 0.001). Subjects with a basic secondary school qualification thus recall German-English non-humorous slogans less well than German non-humorous ones by a factor of -

0.0661218, given that all other variables remain constant[22].

In contrast, monolingual German non-humorous slogans seem to be more relevant. They have the same low benefit as German-English ones, since they only inform consumers about potential features of the product. The processing effort, however, is not as high, as consumers only have to process the slogan in their mother tongue. This result can be seen in figures 14 and 15. Of all non-humorous slogan categories, the German slogans are the ones which can still be recalled best by all target groups; the German-English ones generally tend to have the lowest recall.

The recall rates of monolingual English non-humorous slogans fall between those of German and German-English ones. Consumers only need to process one language. However, this language is not their mother tongue, but a foreign – albeit fairly familiar – language. A look at the statistical model shows that this is in line with the negative estimate for the general factor 'English' (ß = -0.0593430, p < 0.001), which illustrates that subjects with a basic secondary school qualification generally recall English non-humorous slogans less well than German non-humorous equivalents by the factor -0.0593430.[23]

The explanation for lower recall rates for English and German-English non-humorous slogans has similarities to a theory from the field of psychology: John Sweller's *Cognitive Load Theory* (1988) shows that a large amount of cognitive processing during problem-solving activities leads to a "heavy cognitive load" (Sweller 1988: 284). This load leads to low recall rates (Fuhrich and Schmid 2016: 152). Also, English and German-English non-humorous slogans might induce a higher cognitive load through the higher cognitive effort involved in the processing of slogans which are written (fully or in part) in English.

In summary, English slogans without wordplay have the same benefit as German and German-English slogans without wordplay, but presumably require more processing effort than their German equivalents and less processing effort than their German-English equivalents. This is reflected in their recall rate, which generally tends to be the second lowest one, with lowest recall rates for German-

[22] P-value and estimate of the general factor 'German-English' are applicable to the values of non-humorous slogans because 'non-humorous' is the reference category to 'humorous' and is included in the intercept of the statistical model.

[23] Again, these values are applicable to the case of a comparison between German, English and German-English non-humorous slogans because 'non-humorous' is the reference category to 'humorous'.

English non-humorous slogans and third lowest rates for German non-humorous slogans.

This and the previous section have examined mixed-language and monolingual advertising slogans which do not include wordplay. Their recall results were analysed using frame theory and relevance theory. When it comes to the discussion of results for slogans with wordplay, a third linguistic theory needs to be considered: humour theory.

4.3.3 Humour and relevance theory and slogans with wordplay

Humour theory

The *General Theory of Verbal Humor* (1991) by Attardo and Raskin is especially helpful in explaining humour in general and the types of wordplay included in this study in particular. Attardo and Raskin define six hierarchically ordered knowledge resources which are of assistance in the analysis of jokes. Raskin's most important finding from his previously formulated *Script-based Semantic Theory of Humor* (1985), briefly discussed in chapter 3, was that the joke requirement 'script oppositions', is at the top of this hierarchy of knowledge resources (Attardo and Rakin 1991: 325). The five subsequent knowledge resources, in order of importance, are: logical mechanisms, situations, target, narrative strategies and language (Attardo and Raskin 1991: 325).

In the particular case of wordplays in advertising slogans, most knowledge resources, apart from script oppositions, can be disregarded. Logical mechanisms, for instance, are the mechanisms underlying a joke and, in this case, always consist of "the most trivial logical mechanism […], the juxtaposition of two different situations determined by the ambiguity or homonymy in a pun" (Attardo and Raskin 1991: 306). Situations define the 'props' of the joke, such as activity, participants, objects and instruments (Attardo and Raskin 1991: 303). Advertising slogans normally do not include participants or activities, but the advertised products could be defined as the objects. A target is an optional knowledge resource (Attardo and Raskin 1991: 302) and provides the target of a joke, i.e. "any individual or group from whom such a behavior [as told in the joke] is

expected" (Attardo and Raskin 1991: 301). The study slogans are all non-targeted, however, in order to correspond with what is generally the case in the world of advertising. Narrative strategies "mean the genre, or rather microgenre as it were, of the joke, in other words, whether the text of the joke is set up as expository, as a riddle, as a question-and-answer sequence, and so on" (Attardo and Raskin 1991: 300). Thus, the narrative strategy of most advertising slogans (and of all study slogans) seems to consist of one or more phrases or a short sentence. Language is the last knowledge resource which needs to be considered.

> The difference in the choice of words, syntactic constructions, and other language options, including the division of the text into sentences, will be referred to as the difference in the language. Each joke can have hundreds and perhaps thousands of paraphrases because every sentence in the text of a joke, just as any sentence of any natural language, may have multiple paraphrases. (Attardo and Raskin 1991: 297)

Since it is always possible to paraphrase utterances, even when they are as short as advertising slogans, this knowledge resource cannot be neglected as easily as the other five. The slogan design is as homogeneous as possible, with slogans consisting of two phrases separated by punctuation marks and ending with a full stop. The choice of slogan language itself (i.e. German, English or mixed-language with the first slogan part in German) is also strictly defined. Cases in which slogans with rather deviating wordplay have been included in the study are mentioned in chapter 4.2.4 and will be discussed further in chapter 4.3.5.

In summary, the humorous advertising slogans in this study are exceptional in that Attardo and Raskin's first knowledge resource, script oppositions, is sufficient to explain the slogan wordplays. But what exactly are script oppositions?

The essence of script oppositions is that

> the text of a joke is always fully or in part compatible with two distinct scripts and that the two scripts are opposed to each other in a special way. In other words, the text of the joke is deliberately ambiguous, at least up to the point, if not to the very end. The punchline triggers the switch from the one script to the other by making the hearer backtrack and realize that a different interpretation was possible from the very beginning. (Attardo and Raskin 1991: 308).

The specific definition that holds here is that a script is a "chunk of structured semantic information" which "can be understood for the purposes of this article as an interpretation of the text of a joke" (Attardo and Raskin 1991).

Scripts – or frames – were treated in detail in chapter 4.3.1 within the context of frame-shifting and frame-violation. Indeed, "Attardo and Raskin's use of the concepts of script and frame relates very closely to the central cognitive linguistic notion of semantic frame as originally postulated by Charles Fillmore" (Onysko 2016: 71). The current chapter first used frame theory in order to explain the processing mechanisms of slogans without wordplay and then used humour theory to explain slogans with wordplay, because

> frame-shifting focuses on what is involved in taking the mind from one frame to another and remains open for explaining all kinds of frame-shifts, including humorous ones, while the general theory of verbal humour highlights the nature of the opposition between the knowledge structures activated and is restricted to humour (Fuhrich and Schmid 2016: 140).

While frame theory is thus capable of explaining frame-shifts in general, humour theory focuses on knowledge structure oppositions and, as the name of the theory already suggests, humour.

These theories use the terms 'script' and 'frame'. The general difference between those terms – if there is one – is not entirely defined. Attardo and Raskin, for example, do not make a distinction between the two terms, as Attardo states in a footnote:

> Raskin leaves aside the terminological issues and chooses 'script' to designate the unmarked term for this type of cognitive structure. The author will follow this usage, noting that it does not imply any value judgment but is meant as a simplification of an otherwise exceedingly complex terminological issue (1994: 199).

Indeed, Raskin gives the following definition: "The script is a large chunk of semantic information surrounding the word or evoked by it. [...] What is labelled here 'script' has been called 'schema', 'frame', 'daemon,' etc." (Raskin 1985: 81).

The names of the theories already demonstrate that scientists examining the *Script-based Semantic Theory of Humor* and the *General Theory of Verbal Humor* almost exclusively refer to scripts, whereas those examining frames and frame-shifting exclusively refer to frames. This thesis examines both humour and frame theories and will therefore use the terms 'frames' and 'scripts' interchangeably.

What do script oppositions in humorous advertising slogans look like? The following section will analyse script oppositions in three slogans with wordplay which are used in the study. These slogans are in German, English and German-English respectively, to show that the mechanisms of script opposition work independently of specific languages.

Humour theory applied to slogans with wordplay

German slogan with wordplay: *Persil* Waschmittel – *Über Nacht: eine weiße Weste.*

Über Nacht: eine weiße Weste ('Overnight: a clean vest') is the monolingual German slogan with wordplay for the washing powder company *Persil*. In German *eine weiße Weste haben* ('having a clean vest') is a proverb meaning 'having clean hands' or 'having a clean slate'. The slogan with its wordplay is thus compatible with two distinct scripts which are opposed to each other: the first interpretation is 'having a clean vest' in the sense of 'having clean clothes' and the second one is 'having a clean slate'. This makes the text deliberately ambiguous. The punchline consists of the two meanings of *eine weiße Weste haben*: both are possible, the recipient of the slogan switches from one script to the other.

English slogan with wordplay: *KRASS Optik – Our glasses: a good sight.*

The monolingual English slogan with wordplay for the optician's chain *KRASS Optik* is *Our glasses: a good sight*. The two distinct scripts which are opposed to each other consist of the punchline *a good sight*, which either means 'to see something better' or 'to look good'. The slogan is thus deliberately ambiguous and switching from one interpretation to the other is possible.

German-English slogan with wordplay: *Colgate toothpaste – Mit schönen Zähnen bringst du es – white.*

In the first study, the toothpaste company *Colgate* is attributed with the mixed-language German-English slogan *Mit schönen Zähnen bringst du es – white* ('With beautiful teeth you bring it – white'), with *white* as a homophone to

German *weit* ('far'). Thus, the slogan either says 'With beautiful teeth you bring it – white' or 'With beautiful teeth you bring it – far', depending on the interpretation of *white* either as an English or a German word.

Relevance theory applied to slogans with wordplay

The three examples show that more cognitive processing is necessary for understanding slogans with wordplay than for understanding slogans without wordplay. While non-humorous slogans do not have two scripts – or two text interpretations – that need to be processed, and thus follow rather simple cognitive processing mechanisms[24], the punchline of the wordplay in the humorous slogan leads potential consumers to do a double take of the slogan and induces a switch from one script, or frame, to the other (Attardo and Raskin 1991: 308).

As shown in the two previous chapters, a higher cognitive processing charge does not automatically lead to a higher rate of recall. This is where relevance theory comes into play. The specific relevance of an advertising slogan (i.e. the combination of processing costs which are as low as possible and processing benefits which are as high as possible) is an important factor for its recall rate (Fuhrich and Schmid 2016: 152f). Humorous slogans offer more benefit to potential consumers than non-humorous slogans, they provide amusement and entertainment. This benefit seems to be sufficient to outweigh the higher processing costs for slogans with wordplay which are induced through script oppositions. The statistical mixed model supports this: humour as a general influencing factor has a positive estimate (ß = 0.0709222, $p < 0.001$). Concerning subjects with a basic secondary school qualification, the recall of humorous German slogans is thus higher than that for non-humorous German slogans, given that all other variables remain constant. The interactions between different levels of education and humorous slogans as well as German-English slogans and

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[24] Apart from the assumed frame-violation in mixed-language slogans which might lead to a shifting of frames. This potential shift, however, has no shift-inducing punchline.

humorous slogans have already been discussed and provided positive estimates for humorous slogans[25].

High benefit thus seems to be an important factor influencing slogan retention and recall, but benefit alone is not enough to explain specific retention and recall rates; mechanisms such as frame-violations and script oppositions also play a part. What is more, the cognitive abilities of specific target groups also need to be taken into account.

Following on from chapter 4.3.2, which analyses the relevance of slogans without wordplay, the next section will take a closer look at the general costs and benefits of the three different slogan categories with wordplay. Having completed this general analysis, we will move on to the next chapter which will then give a target-group specific evaluation of the study results.

Humour and relevance theory applied to slogans with wordplay

Slogans with wordplay, whether they are monolingual (German or English) or mixed-language (German-English), have the same benefit: they give information about a product and, unlike non-humorous slogans, they also offer entertainment. The processing costs, however, are different for each humorous slogan category and are thus important for slogan recall. As examined above, a German slogan with wordplay such as *Über Nacht: eine weiße Weste* for a washing powder company has two German scripts which the consumer needs to process. The processing of scripts in the mother tongue is presumably less effort than the processing of two English scripts in an English slogan with wordplay such as *Our glasses: a good sight* for a chain of opticians. With the same benefit as and a lower processing cost than its English equivalent, the German slogan thus seems to be more relevant. The interaction humour:English has a negative estimate ($ß = -0.0089735$, $p > 0.05$), which illustrates that, with regard to subjects with a basic secondary school qualification, the effect of 'humour' decreases in English

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[25] The interaction between English and humorous is the only interaction with humour which has a negative estimate ($ß = -0.0089735$, $p > 0.05$). Nevertheless, the estimate is also conclusive, which will be shown in the next section.

slogans by -0.0089735 in comparison to German ones, given that all other variables remain constant.

This seems to stand in relation to the corresponding recall rates (fig. 14 and 15). Subjects with a lower level of education specifically show better recall rates for German slogans with wordplay than for English ones. Subjects with a higher level of education, such as a university entrance qualification or a university degree, have fewer differences in recall between slogan categories, although differences are visible in certain age groups. Differences in target-group specific recall will be analysed in detail in the next chapter.

Mixed-language slogans with wordplay such as *Mit schönen Zähnen bringst du es – white* for a toothpaste company have a German and an English script which needs to be activated and also involve a frame-violation. In the previous chapter, mixed-language advertising slogans without wordplay were analysed and shown to have inadequate effect, require most effort and, consequently, have the least relevance of all slogans. By contrast, however, mixed-language slogans with wordplay might still require the most effort, but the entertainment effect (also known as the benefit) is considerably higher than in mixed-language slogans without wordplay. Especially when compared to their non-humorous equivalents, which have very low rates of recall, mixed-language humorous slogans are retained surprisingly well, and are rated first or second of all slogan categories. Statistics show a positive estimate for the interaction between humour and German-English (ß = 0.0581591, p < 0.001). The effect of 'humour' on subjects with a basic secondary school qualification thus increases in German-English slogans by 0.0581591 compared to German ones, given that all other variables remain consistent.

In the latter case, the greater cognitive processing effort required due to the use of two languages and wordplay does not prevent a higher recall rate, as in non-humorous mixed-language slogans, but, on the contrary, it seems to enhance it. With a benefit high enough to increase the relevance of humorous mixed-language slogans, the additional processing effort seems to be an important factor for higher slogan recall rates, as predicted by Craik and Lockhart's levels-of-processing model (1972, cf. Craik and Tulving 1975, Fuhrich and Schmid 2016). The "amount of attention devoted to a stimulus" (Craik and Lockhart 1972: 676)

seems to be higher than in non-humorous mixed-language slogans because of the higher benefit. It leads to more processing depth and thus to a higher retention and recall rate.

In summary, the reasons for a higher rate of recall for slogans with wordplay seem to be the benefit from the entertainment, the processing of two scripts instead of one because of the punchline, alongside additional processing time. This is valid for consumers of all ages and levels of education. As Yus puts it, "the eventual amusement and even laughter will make up for the effort involved in processing the joke" (Yus 2016: 51, cf. Fuhrich and Schmid 2016: 153). Tanaka sees it from a similar perspective: "Because a pun takes longer to process, it sustains the addressee's attention over a period of time, and, once comprehended, it is often remembered" (Tanaka 1994: 68).

German, English and German-English slogans with wordplay all have the same benefit, but their different processing costs seem to influence recall rates. However, one single standard cannot be applied to all categories because recall rates for slogan categories also depend on specific target groups. Particularly subjects with an intermediate school qualification, a general secondary school qualification or lower have slogan recall rates different to those of subjects with a university degree, an advanced technical college certificate or a university entrance qualification. Optimal relevance for those target groups seems to be reached with different kinds of advertising slogan constructions:

> An utterance, on a given interpretation, is optimally relevant iff [sic!]:
> (a) It is relevant enough for it to be worth the addressee's effort to process it;
> (b) It is the most relevant one compatible with the communicator's abilities and preferences.
> (Sperber und Wilson 2012: 177)

As could be seen in chapter 4.2.3, consumers with a lower level of education have highest rates of recall for monolingual German advertising slogans with wordplay, while subjects with a higher level of education have highest rates of recall for mixed-language German-English slogans with wordplay. The optimal relevance of a slogan construction is target-group dependent; consumers coming from different educational backgrounds have different abilities and preferences and thus different rates of recall. The target-group specific differences for all

slogans with and without wordplay will be examined in the following.

4.3.4 Target-group specific differences

The previous chapters showed that frame-violation, script opposition and optimal relevance are important factors which influence slogan recall. While some of those factors do not at first appear to be target-group-dependent , a closer look reveals that factors such as the abilities and preferences of specific consumers are decisive, e.g. with regard to optimal relevance. These abilities and preferences become particularly visible when examining the target-group-related factors 'age' and 'level of education'. In contrast, gender has no significant influence on the recall of gender-neutral advertising slogans. The different recall rates triggered by age and education will be examined next.

Age

Fig.11 and chapter 4.2.2 showed that recall rates fall noticeably with increasing age, regardless of the study subjects' level of education and the examined slogan category. This is also shown statistically ($ß = -0.0010894$, $p < 0.05$ for the factor 'age'). This effect is known in the fields of psychology and medicine as age-related memory loss. It explains that "cognitive deficits are commonly found in the aged" (Santos-Galduróz et al. 2009: 988). What is more, attention also declines with age (Salthouse 1988) and, at the same time, inhibitory mechanisms (which ignore irrelevant pieces of information and are essential for selective attention, Bak 2014: 29) become more inefficient with age (Hasher, Lustig and Zacks 2007). While this general memory loss does not necessarily affect all cognitive abilities (Santos-Galduróz et al. 2009: 988), the present study shows that it definitely impairs the recall of advertising slogans.

Education

General influence of education

Chapter 4.2.2 illustrated that subjects with a higher education level have higher recall rates. Santos-Galduróz et al. came to similar conclusions in a 2009 study dealing with free word recall and gave the following explanation: "The more developed the cognitive functions, resulting mainly from formal education, the greater the cognitive reserve" (Santos-Galduróz et al. 2009: 991). Other fields of research point in the same direction; subjects with higher education show more delays in the development of Alzheimer's disease than subjects with lower education (Garibotto et al. 2008: 1342), and a higher level of education helps to "allow cognitive function to be maintained in old age" because of "the intellectual challenges experienced during life" (Staff et al. 2004: 1191). The present study results support this.

The statistical mixed model shows positive estimates for the different levels of education in general, meaning that subjects with a higher level of education have better slogan recall than subjects with a general secondary school qualification or lower (included in the reference category). Insignificant p-values for all levels of education support the result that the recall of German non-humorous slogans (included in the reference category) does not depend on the level of education. The members of the target groups have no difficulties with the cognitive processing of non-humorous slogans in their mother tongue because those slogans require the least cognitive processing effort.

Language:education

The specific interactions between choice of language and level of education are of particular interest. This can be seen in table 5 (already used in chapter 4.2.3) which gives estimates and p-values for the interaction between all levels of education and the use of either English or German-English.

	Estimate English	p-value English	Estimate Germ.-Engl.	p-value Germ.-Engl.
Intermediate secondary school level	0.0044151	0.806639 *(n.s.)*	-0.0036816	0.837719 *(n.s.)*
University entrance level	0.0556923	0.002576 *(p < 0.01)*	0.0498617	0.006632 *(p < 0.01)*
Advanced technical college certificate	-0.0189223	0.479554 *(n.s.)*	0.0088435	0.740258 *(n.s.)*
University degree	0.0514041	0.009767 *(p < 0.01)*	0.0665885	0.000822 *(p < 0.001)*

Table 5: Estimates and p-values for the interactions language:education

The intercept includes the education level 'general secondary school qualification or lower', i.e. the given estimates are to be interpreted with reference to a general secondary school qualification or lower. Study subjects with a university degree recall English slogans better than study subjects with a general secondary school qualification or lower by a factor of 0.0556923, given that all other variables remain constant. Their recall for German-English slogans, in comparison to study subjects with a general secondary school qualification or lower, is higher by a factor of 0.0498617.

As the sizes of the specific estimates in the table grow from row to row, so the recall rates for slogans in English and in German-English rise with the education level. Subjects with an advanced technical college certificate are a clear exception, with a comparatively low, or even negative, estimate. There are two possible explanations for this exception, the first of which raises the suspicion that the English proficiency of advanced technical college graduates might be lower than that of subjects with a university entrance qualification or a university degree. Their English knowledge, and thus their recall rates, might therefore be more comparable to those of subjects with lower education levels. However, the result of the personal assessment of English language skills made by study subjects on page 1 of the study questionnaire shows that, on average, subjects with an advanced technical college certificate judge their English knowledge to be equivalent to a grade of 2.6 (good to satisfactory), while subjects with higher education in general give their English knowledge skills a 2.3 (good). Although this is a subjective rating, it already shows that the gap between the English skills

of subjects with an advanced technical college certificate and those of subjects with other high levels of education does not seem to be very large. What is more, a look at the entry requirements for an advanced technical college reveals that this explanation might be too simple. Advanced technical colleges are not only attended by school leavers from technical secondary schools ('Fachoberschule') and higher vocational schools ('Berufsschule') (the entry requirement for these two types of school is an intermediate secondary school level certificate); advanced technical colleges are also attended by students with university entrance qualifications. Students are required to spend between six months and a year on a vocational internship in order to obtain an advanced technical college certificate, which might reduce their English proficiency if English is not spoken during this time. However, it seems unlikely that this should cause such a significant loss of English proficiency.

The second explanation seems to be more reasonable. Only 47 participants in the present study hold an advanced technical college certificate, thus, the statistical *predict*-function of *RStudio* might have delivered incorrect predictions based on the insufficient number of participants. It is possible that a larger number of study subjects with an advanced technical college certificate might produce results that are in line with the results of subjects with other high levels of education and thus also positive estimates.

Wordplay:education

The interactions between the use of wordplay and all levels of education also have positive estimates with significant to highly significant p-values.

	estimate	p-value
	Interaction with wordplay	Interaction with wordplay
Intermediate secondary school level	0.0309023	0.036324 *(p < 0.05)*
University entrance level	0.0636035	3.13e-05 *(p < 0.001)*
Advanced technical college certificate	0.0939014	1.84e-05 *(p < 0.001)*
University degree	0.0879772	7.52e-08 *(p < 0.001)*

Table 7: P-values and estimates for the interactions wordplay:level of education

As in the interactions between language and level of education, the given estimates are to be interpreted with reference to a general secondary school level or lower. For example, the estimate of the interaction 'humour':'intermediate secondary school level', shows that, compared to subjects with a general secondary school level or lower, subjects with an intermediate secondary school level are better at recalling slogans with wordplay by a factor of 0.0309023, given that all other variables remain constant. The table above thus shows clearly that recall rates for humorous slogans increase with the level of education (once again, study subjects with an advanced technical college certificate have to be treated with caution due to a possible statistical incorrectness).

In summary, recall rates strongly depend on the ages of the study subjects and, in turn, the recall rates of a specific age group depend on the level of education. However, results are not always as clear as in the case of the factors 'age' and 'education'. Although chapter 4.3.3 showed that humorous slogans generally have higher recall rates than non-humorous ones, there are two exceptions to this which will be examined next.

Generally speaking, slogans with wordplay have better recall rates than slogans without wordplay, regardless of the subjects' level of education. There are two exceptions to this which can be found within the target groups with low education levels. These exceptions concern cases in which slogans without wordplay have recall rates which are equal to or higher than slogans with wordplay.

First, subjects with an intermediate secondary school qualification, a general secondary school qualification, or lower, partly recall English or German-English slogans with wordplay less successfully than German slogans without wordplay (fig. 14). The reason for this can be found in the poor English proficiency of German citizens with a low level of education. Pupils in the ninth grade of general secondary schools, (the highest grade of this school type) have less English knowledge than pupils in the ninth grade of intermediate secondary schools and considerably less English knowledge than pupils in the same grade of higher secondary schools ('Gymnasium') (Deutsches Institut für Internationale Pädagogische Forschung 2006: 11-20). While people with a general secondary school certificate leave school after the ninth grade and are thus unlikely to significantly improve their English knowledge after having left school, pupils at intermediate secondary schools have one more year of English lessons and pupils at secondary schools have as much as three to four years more[26]. The English knowledge gap consequently widens in the following intermediate secondary and secondary school years. The result of the personal assessment of English language skills made by study subjects on page 1 of the study questionnaire shows that, on average, subjects with lower education judge their English knowledge to be a school grade 3.4 (satisfactory), while subjects with higher education give their English knowledge skills a 2.3 (good). This is a subjective rating, but already shows a clear tendency. What is more, although there might be individual differences in the English skills of subjects with lower and higher education, inferential statistics even out these potential differences. It can thus be assumed that the English proficiency of German citizens with a low level of education is so

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[26] This depends on the federal state and whether pupils attend the 'G8' or 'G9' school system, i.e. if the secondary school they attend offers eight or nine years of education.

limited that they seem to prefer German slogans to English or German-English ones, even if the German slogans are non-humorous and those with English elements are humorous. This could also stand in relation to their cognitive abilities, which might not be as advanced as those of subjects with higher education. They have to invest more effort into the processing of slogans with English elements because of their lack of English knowledge and their weaker cognitive abilities; humorous German slogans consequently have optimal relevance to them.

Secondly, lack of understanding and decreasing cognitive ability seem to be the reasons why elderly people from lower educational backgrounds[27] have the same recall rates for non-humorous and humorous German slogans. They do not seem to understand the wordplay in the slogan, presumably because of their advanced age. Humorous slogans are for them no different to non-humorous ones and thus have the same recall rates.[28] This can only be observed in target groups with a low level of education and therefore supports the medical claim above that a higher level of education helps to maintain cognitive function in old age.

Another indicator for these two exceptions to the rule is provided by statistics, which, in the case of the second exception, are to be treated with caution, since the values do not refer exclusively to the target group of elderly people. The interaction between humour and an intermediate secondary school level gives a relatively low estimate and low p-value in comparison to other levels of education (ß = 0.0309023, $p < 0.05$). The interaction between English or German-English and an intermediate secondary school level also shows rather low and even negative estimates and insignificant p-values (for English: ß = 0.0044151, $p > 0.05$; for German-English: ß = -0.0036816, $p > 0.05$). In comparison to subjects with a general secondary school level or lower, subjects

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[27] Secondary general school level or lower, 46-60: same amount of recall points for German humorous and non-humorous slogans and for English humorous and non-humorous slogans
Intermediate secondary school level, 61-90: same amount of recall points for German humorous and non-humorous slogans
[28] In one case (61-90 year olds with a secondary general school level or lower), the recall rate for German non-humorous slogans is not only equal to that for humorous ones, but even higher by 0.04 recall points. It is very likely, however, that this is a statistical inaccuracy, as only one person participated in the study who fulfilled the target-group-specific requirement of being 61-90 years old and to having a general secondary school qualification or lower.

with an intermediate secondary school level thus recall humorous slogans only slightly better by the low factor of 0.0309023; they recall English non-humorous slogans only slightly better by the equally very low factor of 0.0044151 and German-English non-humorous slogans are recalled even slightly less by a factor of -0.0036816.

We will now turn to the remaining subjects with different levels of education and their specific recall rates. As a differentiation between lower and higher levels of education and slogans with and without wordplay proved to be useful, the following sections will first examine subjects with lower levels of education and their recall for slogans with wordplay. Subjects with higher levels of education and their recall for slogans with wordplay will then be examined, followed by an analysis of subjects with lower levels of education and their recall for slogans without wordplay. Finally there will be an analysis of subjects with higher levels of education and their recall for slogans without wordplay.

Lower level of education and wordplay

The following figure is an extract from fig. 14 in chapter 4.2.3. It takes a closer look at the recall of slogans with wordplay by subjects with a lower level of education.
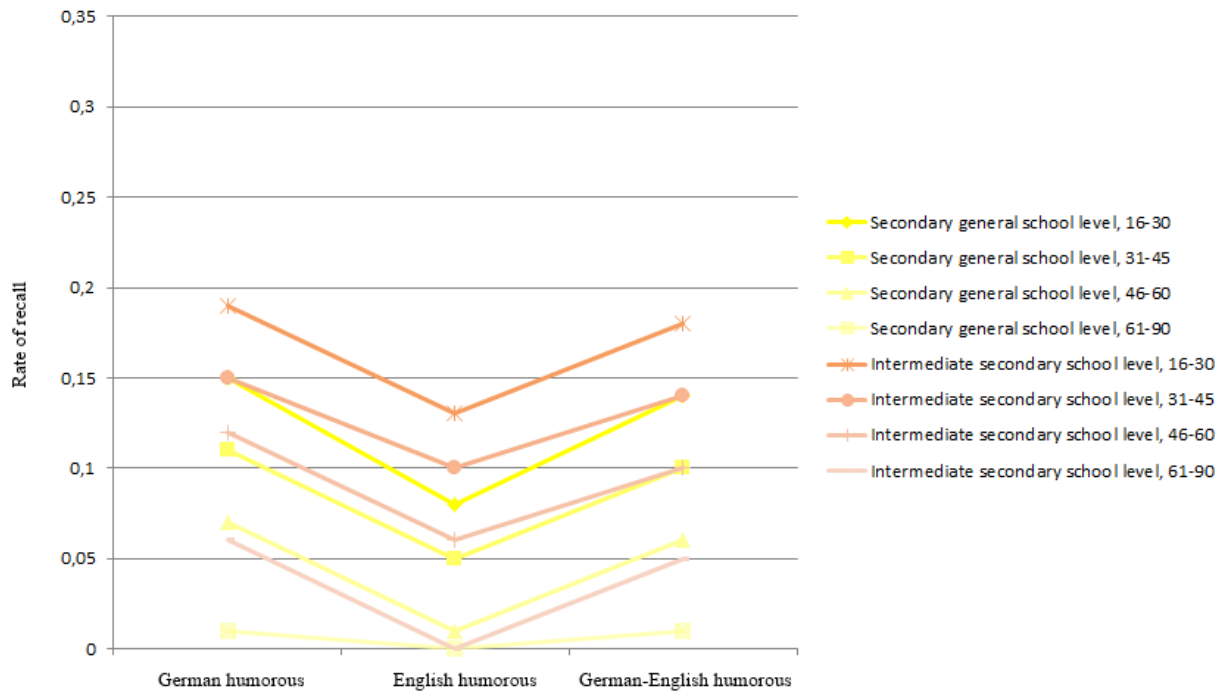
Figure 18: Recall of slogans with wordplay - all age groups, lower education

As shown in chapter 4.2.3, subjects with a lower level of education have the highest rate of recall for German humorous slogans, followed by German-English and then English ones. Taking into account the high effort involved in the potential processing of English elements in the slogan, which might be unusual for subjects with low education, it is no surprise that German humorous slogans seem to have optimal relevance and are recalled best. German-English slogans follow in second place and English slogans in third place.

Subjects with lower education qualifications might not have sufficient English knowledge or cognitive abilities to understand the foreign language in conjunction with the wordplay of the purely English slogan. If cognitive processing is unsuccessful, the slogan remains more or less incomprehensible (Neumann 2013: 59). German-English humorous slogans thus have a higher rate of recall than English ones, despite their potential double cognitive charge through frame-violation (due to language change) and script opposition (due to the use of wordplay). It is uncertain whether the English elements will be entirely processed and understood, therefore frame-violation and script opposition processes might not take place. What will certainly be processed, however, are the familiar German elements in the slogan, which are easier to retain and recall because they

are in the subjects' native language. This leads to a higher rate of recall for German-English humorous slogans than for English humorous slogans.

The costs and benefits as well as the recall rate of subjects with a lower education and their processing of humorous slogans (with different languages) can be visualized in a simplified scheme:

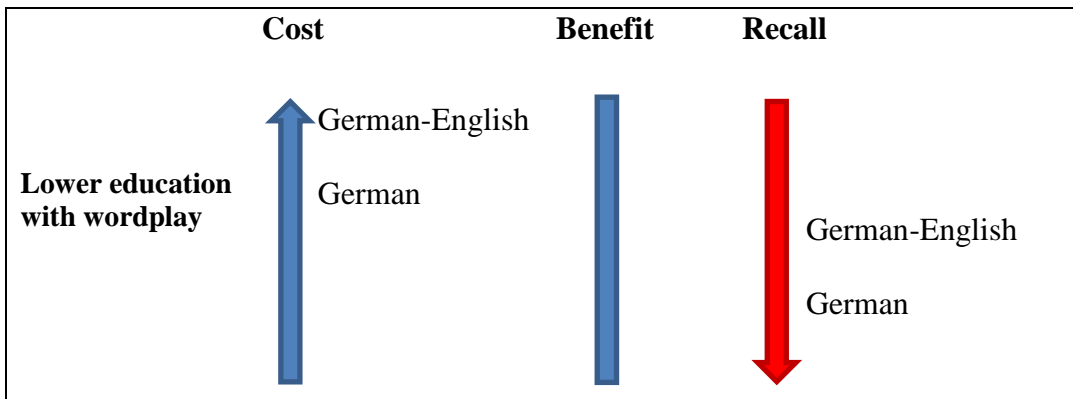|	Cost	Benefit	Recall
Lower education with wordplay	German-English German		German-English German

Table 8: Cost, benefit and recall - low education, with wordplay

While the benefit of processing a slogan with wordplay is equally high for every slogan construction because of the additional entertainment factor, the processing cost varies, depending on the languages involved. Slogans formulated in German have the lowest processing costs, followed by German-English ones. As it is not clear whether the English knowledge and cognitive abilities of subjects with a lower level of education are sufficient to process foreign language and wordplay at the same time, English is not included in the scheme: if there is no cognitive processing, there can be no processing cost either. The recall arrow in red shows that the rate of recall for German slogans is higher than the one for German-English ones. Since subjects with a higher level of education have higher rates of recall, German slogans are not placed at the tip of the arrow (symbolizing maximum recall), but are oriented more towards the middle.

Due to the complexity of three-way interactions, the statistical mixed model used for the study does not go beyond two-way interactions. Significance and estimate rates for the three-way interactions education:wordplay:language are thus not available. The corresponding model would require an excessive amount of three-way interaction parameters, which, in turn, would need a larger sample size. However, general significance rates for the factors humour, language and

level of education and their two-way interactions exist and have already been discussed.

In summary, the recall of slogans with wordplay for the target group of consumers with a lower education seems to be dependent on four different factors: general understanding, benefit, cost, and depth of processing.

Understanding: German slogans with wordplay are understood relatively easily by subjects with lower education, but English slogans are harder to understand because they require sufficient English language skills. The two scripts of the English wordplay are assumed to be particularly hard to understand. German-English slogans, with both German and English elements, require a medium level of understanding; although the English parts might not be understood, the German parts will not pose any additional difficulties.

Benefit: The benefit is equally high for every humorous slogan construction because of the entertainment and amusement that humorous slogans provide.

Cost: German humorous slogans have medium processing costs. Processing the language by itself involves a low processing cost, but processing the wordplay raises costs to a medium level. Because the switch from German to a foreign language and the wordplay both need to be processed in German-English humorous slogans, this slogan category has high costs and thus needs high cognitive abilities, which might not be available. An English humorous slogan would theoretically have slightly lower costs than a German-English one, since it does not involve frame-violation. However, as it is not certain whether an English humorous slogan is sufficiently processed, it is also not clear whether there are any processing costs at all.

Depth of processing: The inclusion of wordplay increases the depth of processing. German humorous slogans are assumed to be processed deeply because it is likely that they are understood by subjects with a lower education. English humorous slogans might not be understood because of their foreign language and their wordplay and would thus be processed less deeply. German-English slogans have a low to medium depth of processing: the English part might not be understood, but the German part might be processed sufficiently.

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Higher level of education and wordplay

Unlike subjects with lower levels of education, subjects of all ages with a university entrance qualification or university degree have the highest rate of recall for German-English humorous slogans. This is shown in the next chart, which is also a modified extract from fig. 15. In contrast to chapter 4.2.3, subjects with an advanced technical college certificate are not included in this chart because of their inconclusive recall results.
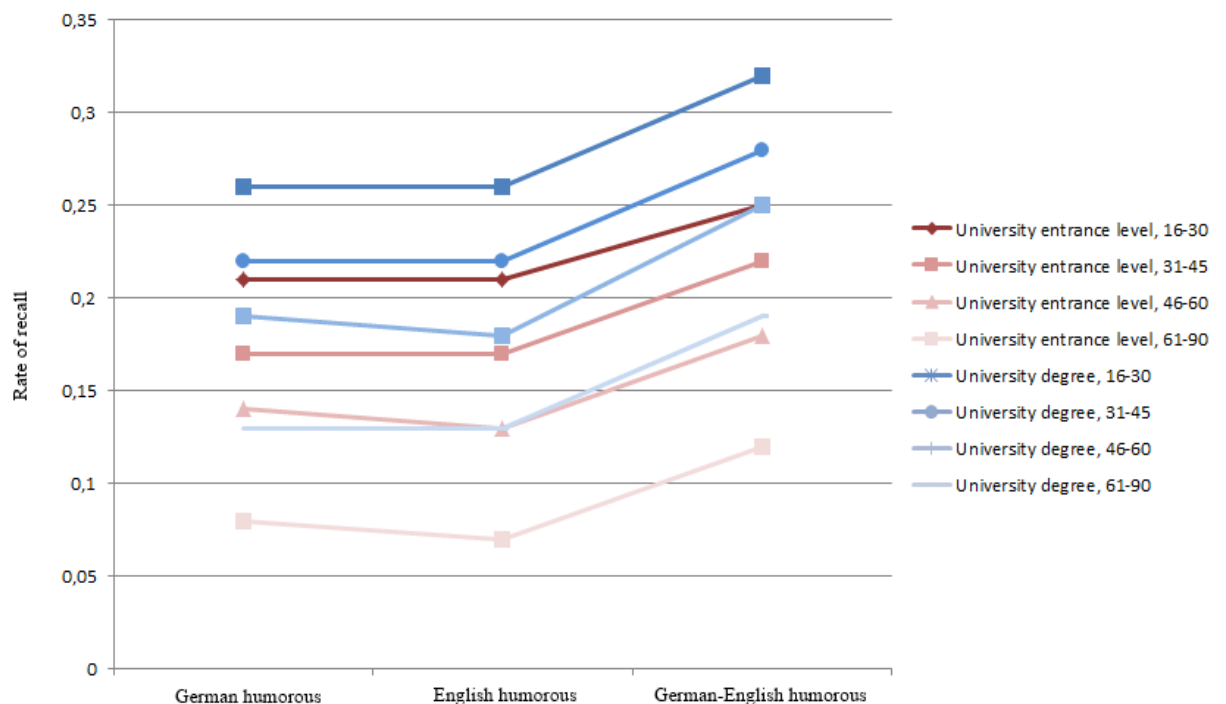
Figure 19: Recall rates of slogans with wordplay - all age groups, higher education (without advanced technical college certificate)

Subjects with a higher level of education tend to have a high level of English proficiency and are used to cognitively challenging tasks (Santos-Galduróz et al. 2009: 991). This is why the costs of understanding German-English humorous slogans might be lower for them than for subjects with a lower level of education: their cognitive abilities should be higher than those of subjects with a lower level of education. In addition, unlike subjects with a lower level of education, subjects with a higher level of education will also understand the English part of the slogan. The shift from one script to another due to the included wordplay and the

additional frame-violation due to the two languages of the slogan cause deeper and longer processing and thus trigger higher rates of recall.

German and English humorous slogans have almost equal recall rates. In three cases, recall for English slogans is lower by 0.01 recall points. These tendencies are shown by 46-60 year olds and 61-90 year olds with a university entrance qualification and 46-60 year olds with a university degree. However, this recall difference is, first, very low and, secondly, the age groups concerned consist of a very limited and therefore presumably unrepresentative group of study participants. Regarding subjects with a university entrance level, 129 tested participants are between 16 and 30 years old and 45 are between 31 and 45 years, while only twelve are 46-60 and none are 61-90 years old. Regarding subjects with a university degree, 83 tested participants are between 16 and 30 and 36 participants are 45-60, while only twelve are 46-60 years old (table 1). The recall difference in these three groups can thus be disregarded because of an insufficient number of study participants.

The very similar to equal recall rates for German and English humorous slogans stand in relation to the good English knowledge of subjects with a higher level of education (Deutsches Institut für Internationale Pädagogische Forschung 2006: 11-20). Familiarity with English elements evens out the differences between the use of German and English in a slogan so that an English slogan then has a processing mechanism which approaches the German one and recall rates also become more similar.

In analogy to the cost-benefit-recall scheme for subjects with a lower level of education, the following table gives a simplified scheme for subjects with a higher level of education and their processing costs and benefits as well as recall rates for humorous slogans:
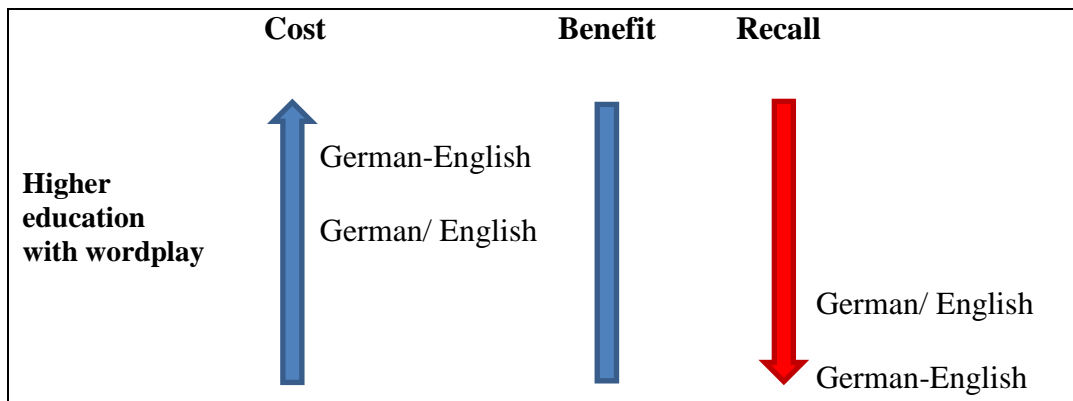
The benefit of humorous slogans is as high as in table 8. The processing costs, however, differ from those in table 8 because of the greater English proficiency of subjects with a higher education. Processing costs for English slogans are now very similar to those for German slogans, whereas the double cognitive charge of German-English slogans still induces the highest processing costs. However, those costs are lower for subjects with a higher education and high English proficiency than for subjects with a lower education and a lower English proficiency. This is why German-English slogans are not positioned at the very tip of the blue arrow, but slightly below it.

The recall rates in table 9 also differ from those in the previous table. Subjects with a higher level of education have higher recall rates for slogans with wordplay than subjects with a lower level of education, therefore humorous German-English slogans are found at the very tip of the red arrow.

The four recall-influencing factors can be summarized in the following way:

Understanding: Understanding of all humorous slogan categories is high, because the English proficiency of subjects with a higher education is assumed to be sufficiently good. Understanding of German-English humorous slogans might be rated medium to high, because a frame-violation due to two languages, in combination with a script opposition due to the included wordplay, might present a cognitive challenge which is too high, especially for older target groups.

Benefit: The benefit of humorous slogans is expected to be high because of their entertainment factor.

<u>Cost</u>: The processing costs are generally assumed to be relatively low because of the English proficiency of subjects with a higher level of education. The additional processing of wordplay, however, raises costs slightly. German-English slogans might have higher processing costs because of the double cognitive charge due to the additional frame-violation triggered by language change.

<u>Depth of processing</u>: The script opposition through wordplay is expected to cause a high depth of processing for German and English slogans. German-English slogans have a medium to high depth of processing because of the double cognitive charge, which might be too difficult.

Lower level of education and no wordplay

When it comes to slogans without wordplay, German slogans are recalled best by all age groups and all levels of education and thus come in fourth place, followed by English slogans (fifth place) and German-English slogans which come last. All levels of education thus recall slogans without wordplay less well than slogans with wordplay. The reasons for these recall rates vary depending on the level of education.

The following chart illustrates recall by all age groups with lower education of slogans without wordplay.
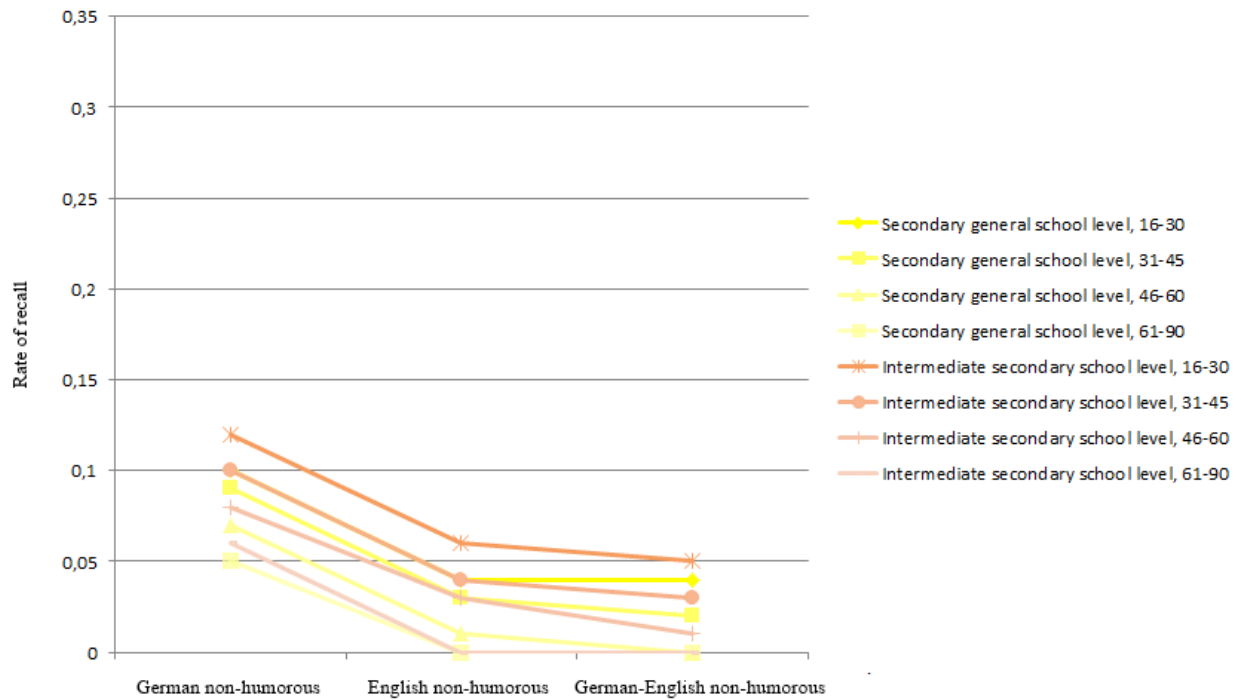
Figure 20: Recall of slogans without wordplay - all age groups, lower level of education

The best recall is achieved for German slogans without wordplay; this is in line with the recall results for German slogans with wordplay. German therefore seems to be the language which can be processed most easily by subjects with a lower level of education whereas German-English slogans or purely English slogans pose problems of understanding. Either the subjects have insufficient English knowledge or, in the particular case of non-humorous slogans, processing English elements takes too much cognitive effort in exchange for a relatively low benefit (potential information about features of the product, but no entertainment as in humorous slogans). This is particularly visible in the recall results of elderly target groups: English elements, whether in German-English slogans or in purely English slogans, are hardly recalled at all.

There is a slight tendency towards better recall for English slogans than for German-English slogans. This seems to be due to the fact that English slogans are comprehensible for subjects with a lower level of education if they do not contain wordplay. It seems that the English knowledge of subjects with lower education is only insufficient for the processing of English-language slogans including wordplay, since this requires an understanding of the two different meanings of an

English word. When English non-humorous slogans are understood as well as German-English ones they have equally low benefit but lower costs than German-English non-humorous slogans. This is because they do not additionally include a frame-violation through a German-English language shift. With respect to subjects with a lower education level, German-English slogans without wordplay thus have a lower recall rate than English ones. This stands in contrast to slogans with wordplay, which have higher recall rates.

In summary, a cost-benefit-recall scheme for subjects with a low education processing slogans without wordplay gives significantly less benefit for all non-humorous slogan categories than the two schemes for humorous slogans. German non-humorous slogans have low processing costs, followed by English slogans and finally German-English ones, which have the highest processing costs. In general, the costs for the processing of non-humorous slogans are lower than those for humorous slogans because no additional script opposition through wordplay needs to be processed. This is why the non-humorous slogan categories are positioned nearer to the bottom of the blue arrow than the humorous slogan categories. Similarly, recall rates for non-humorous slogans are lower than those for humorous ones, so they are positioned further away from the tip of the red arrow.
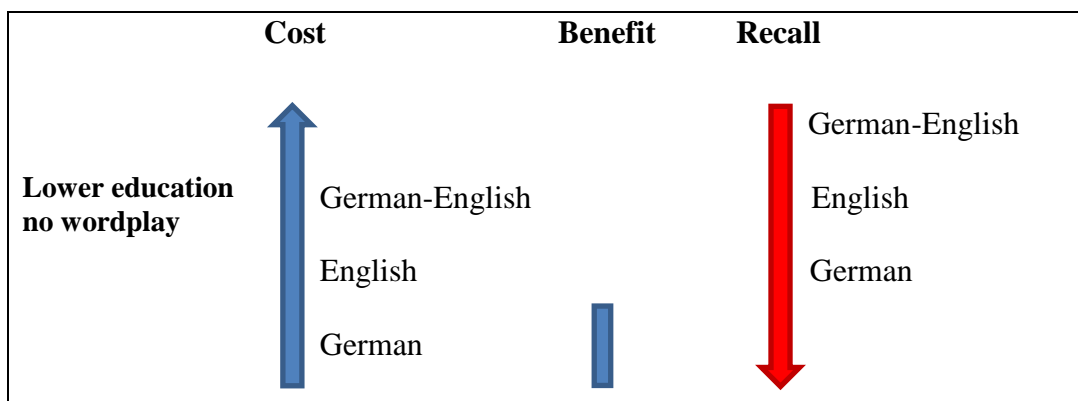
	Cost	Benefit	Recall
Lower education no wordplay	German-English English German		German-English English German

Table 10: Cost, benefit and recall - lower education, no wordplay

The four recall-influencing factors can be described as follows:

<u>Understanding</u>: With no wordplay included, non-humorous German slogans have a high rate of understanding. German-English slogans are assumed to have a medium to high rate of understanding, as English elements might cause problems of understanding but the German elements are understood. A purely English slogan is rather difficult for a subject with insufficient English language skills to understand, but there is no additional wordplay included which would make understanding even more difficult. Thus, a medium understanding is assumed for English non-humorous slogans.

<u>Benefit</u>: The benefit of all non-humorous slogan categories is low, as they only offer potential information about the product, but no entertainment.

<u>Cost</u>: Since German is the study subjects' mother tongue, low processing costs are assumed for German slogans. Medium costs are expected for English slogans, because a foreign language needs to be processed, German-English slogans come with medium to high costs because of the foreign language and the frame-violation involved. These costs, however, are still lower than the ones for slogans with wordplay, as an additional processing of script oppositions does not take place.

<u>Depth of processing</u>: German non-humorous slogans are assumed to be processed very well, but not as deeply as their humorous equivalents because a higher benefit through wordplay is missing. Thus, a medium depth is assumed for these slogans. English non-humorous slogans have a low processing depth because of the use of a foreign language. German-English slogans have a low to medium depth: there are German elements involved, but also potentially unfamiliar English ones, and they also include frame-violation.

Higher level of education and no wordplay

The following figure illustrates the recall by subjects with higher levels of education for slogans without wordplay. The recall by subjects with an advanced technical college certificate is not included in this figure because of the insufficient number of study participants.
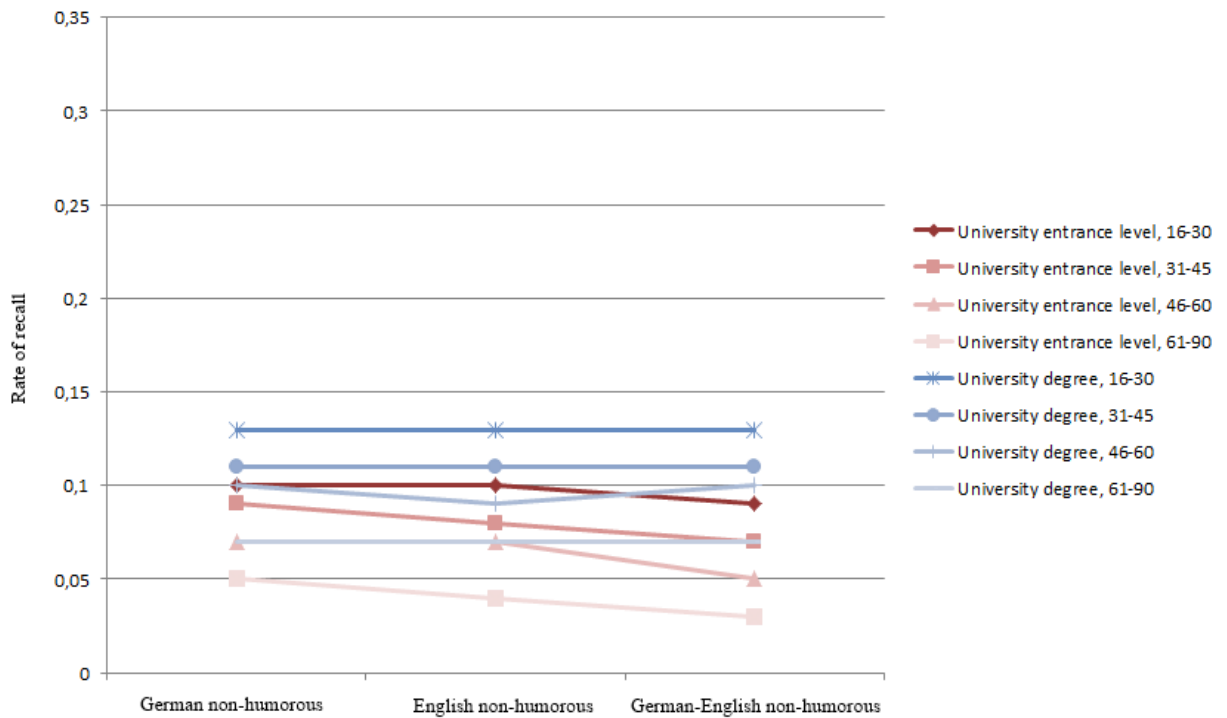
Figure 21: Recall rates of slogans without wordplay - all age groups, higher education without advanced technical college certificate

Study subjects with a university degree tend to have equal rates of recall for all non-humorous slogan categories. The only exception is the group of 46-60 year olds who have equal recall rates for German and German-English non-humorous slogans (0.1 recall points), but a slightly lower rate for English ones (0.09 recall points). As in the previous section, showing higher levels of education and recall rates for slogans with wordplay, it is likely that this might be a statistical error, as only twelve subjects aged between 46 and 60 years and with a university degree participated in the study. This might be an insufficient number of participants to draw conclusions from, especially if this number is compared to other participant numbers, such as the number of 16-30 year old subjects with a university degree, which was 83.

These very similar recall rates for all non-humorous slogan categories are presumably due to the high cognitive capacities of university graduates. With non-humorous slogans and their consistently low benefit, the different slogan constructions, whether mixed-language, English or German, do not seem to cause additional cognitive effort. With a growing number of university degree programmes held in English, processing English is part of the students' everyday life. Thus, benefit and effort rates (and eventually also recall rates) seem to be equal for every non-humorous slogan category.

This tendency is already visible in the recall rates of subjects with a university entrance qualification. Recall rates of German, English and German-English non-humorous slogans differ by 0.02 points at the most, with slightly lower recall rates for English slogans in the case of 31-45 year olds and 61-90 year olds, and generally slightly lower recall rates for German-English slogans in all age groups. Like subjects with a lower level of education, subjects with a higher level of education have the highest recall for non-humorous slogans when they need very little processing effort. Differences in processing effort become smaller with a higher level of education and thus English proficiency.

In comparison, slogans with wordplay not only offer more benefit to subjects with a higher level of education, but they also include an additional punchline and therefore an additional script opposition which needs to be processed. This additional obstacle of understanding requires a higher processing effort even for university graduates with high cognitive capacities. Consequently, recall rates for humorous slogans are not analogous to those of non-humorous ones, but produce different results.

A scheme illustrating the response of subjects with a high education to non-humorous slogans shows costs and recall rates which are very close to each other. German, English and German-English non-humorous slogans are thus put together on one line.
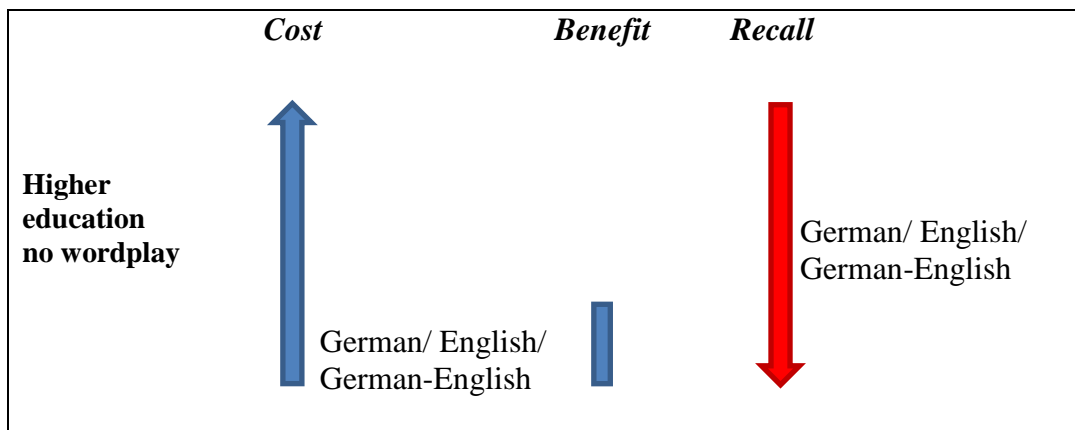
The costs for the processing of slogans without wordplay are low for subjects with a higher level of education, particularly because of the lack of script opposition. The benefit is as low as that shown in table 10 (subjects with lower education, slogans without wordplay), as there is no entertainment factor included in non-humorous slogans. Recall is higher than that of subjects with a lower level of education, but lower than that for slogans with wordplay. The slogan categories are thus positioned in the middle of the red arrow.

The four recall influencing factors are:

Understanding: Understanding is assumed to be high for every non-humorous slogan category.

Benefit: All non-humorous slogan categories have a rather low benefit in comparison to their humorous equivalents because there is no wordplay and, as a consequence, no entertainment factor.

Cost: Costs are expected to be low for every non-humorous slogan category.

Depth of processing: A medium depth of processing is expected for every slogan category. All categories are assumed to be processed very well, but not as deeply as their humorous equivalents because a higher benefit through wordplay is missing.

4.3.5 Deviating wordplay

A further differentiation needs to be made between slogans which use homogeneous wordplay and slogans which use heterogeneous wordplay. The heterogeneous wordplay slogans used in this study include two compound wordplays, one wordplay that involves a sound, three wordplays at the beginning of a slogan, two homographic wordplays and one with an imperfect rhyme. Although one to three similarly constructed deviating slogan wordplays are not enough to draw general conclusions about their recall rates or to calculate conclusive statistical models, some reasons will be given in the following which might explain the recall rates for deviating slogan wordplays.

Compound wordplays

The two compound wordplays used in the study are *Beautiful teeth – world-white* and *Schöne Zähne – unsere neue weiß Sagung*, both for *Colgate* toothpaste. A look at the descriptive barplot reveals that, overall, the recall rates of slogans with homogeneous wordplay do not differ significantly from those of the two slogans with compound wordplay.
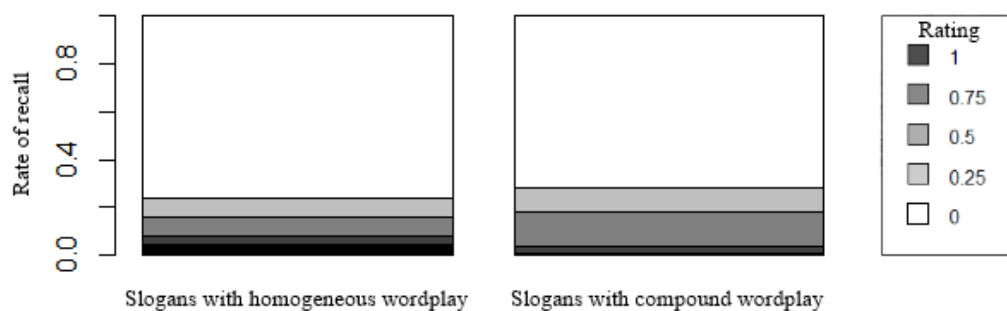

Figure 22: Slogans with homogeneous wordplay vs. slogans with compound wordplay, immediate recall - barplot

What is striking, however, is that complete and almost complete slogan recall seems to be rarer in slogans with compound wordplay than in slogans with homogeneous wordplay. In contrast, higher recall rates are achieved for a correct

recall of slogan keywords (0.25 points) and the overall message/ humour of the slogan (0.5 points). One part of the compound seems to provide recall support for the compound wordplay as a whole. For example, if subjects remember that the English *Colgate* slogan involves a compound wordplay with 'world', recall of the second compound part might be easier, since the combination possibilities with 'world' are limited and 'world-wide' is a strong collocation. Because of the recall support of the first compound part inferring the wordplay 'wide', the word 'white' might then be easier for study subjects to recall. This might be the reason why subjects have a higher recall for slogan keywords or the overall message/ humour in slogans with compound wordplays than for those in slogans with more homogeneous wordplays.

Sounds

The only slogan that involves a combination of proper name and sound is *Produziert von: Biene MmmJa* for *Marlene* honey. The barplot for slogans with a sound as wordplay clearly shows higher recall rates for this deviating slogan.
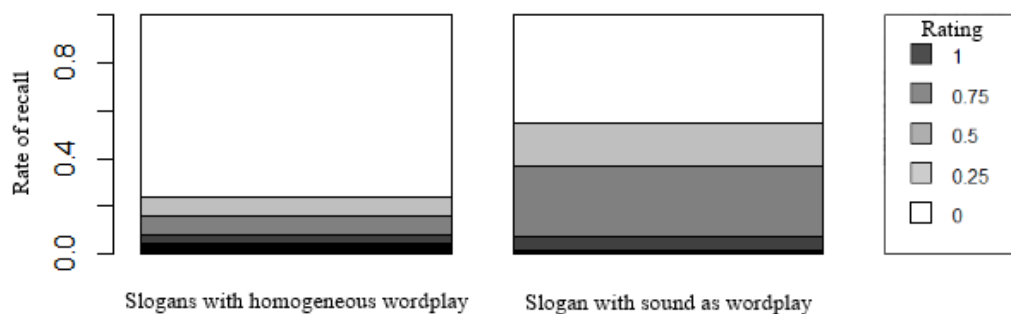
Figure 23: Slogans with homogeneous wordplay vs. slogans with sound as wordplay, immediate recall - barplot

Once again, slogan keywords in particular and the overall message/ humour of the slogan have a high recall rate, which suggests that the same explanation holds for slogans using sound as wordplay as for slogans with compound wordplay. The reason for the higher recall might be a strong collocation. In this case, it is the collocation between honey and 'Biene Maja' which might be very strong. As soon

as study subjects freely associate words with 'honey', they might come up with the collocation 'bee', which could then be the recall support needed to make the subject think about the children's series 'Biene Maja' and the corresponding wordplay with the 'Mmmja' sound. Thus 'honey' and 'bee', as well as 'bee' and 'Biene Maja', possibly provide two strong collocations facilitating recall, which could explain why partial slogan recall rates for this slogan are even higher than the ones for compound wordplays with only one strong collocation.

Wordplays at the beginning of the slogan

Three slogans include wordplay at the beginning rather than at the end: *Feet: your appetite for velocity* for *Adidas* shoes, *Building: childhood memories* for *Lego* toys and *Genie – in a bottle* for *Monster* energy drink. The *Monster* slogan, however, also includes a homographic rather than a homophonic pun. Therefore, the following barplot does not include this slogan because the influence of the wordplay at the beginning of the slogan cannot be separated from the influence of the homographic aspect of the wordplay.
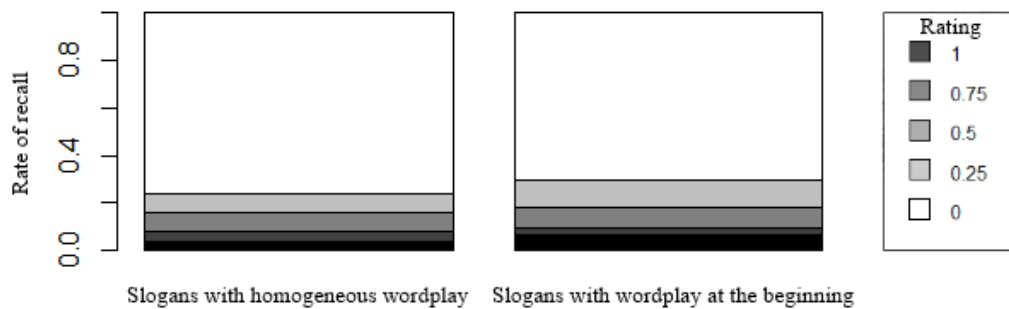
Figure 24: Slogans with homogeneous wordplay vs. slogans with wordplay at the beginning, immediate recall - barplot

In this case, neither the overall recall rate of slogans with wordplay at the beginning of the slogan nor the specific recall rates, e.g. slogan keywords, show clear differences in comparison to the recall rates of slogans with homogeneous wordplay. This might be due to the fact that the slogans do not contain strong

collocations. The recall effect of the position of the wordplay in a slogan seems to be negligible, but more data and research would be needed for a general analysis.

Homographic wordplays

Two study slogans involve homographic wordplay: *Genie – in a bottle* for *Monster* energy drink and *Unsere Pizzen sind nicht süß, but herbs* for *Pizza Hut*. As argued above, the recall influence of homographic wordplay on the *Monster* slogan cannot be separated from the influence of the wordplay position, thus the following barplot will only use data from the *Pizza Hut* slogan.

Figure 25: Slogans with homogeneous wordplay vs. slogans with homographic wordplay, immediate recall - barplot

This barplot is similar to the section above which dealt with wordplays at the beginning of a slogan. Compared to slogans with homogeneous wordplay, neither the overall recall rate of slogans with homographic wordplay nor the specific recall rates, e.g. for slogan keywords, show clear differences[29]. This might be due to the weak to non-existent collocation between 'pizza' and 'herbs'.

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[29] Although this recall result is not clearly different from those of more homogeneous slogans, it is nevertheless reported here so that it can be compared to the recall result from the study on recall one week after slogan exposure in chapter 5.

Wordplays with imperfect rhymes

One study slogan uses wordplay with an imperfect rhyme: *Shopping, not shocking* for the *InterSpar* grocery chain. The following barplot illustrates its recall rates in comparison to slogans with more homogeneous wordplays.
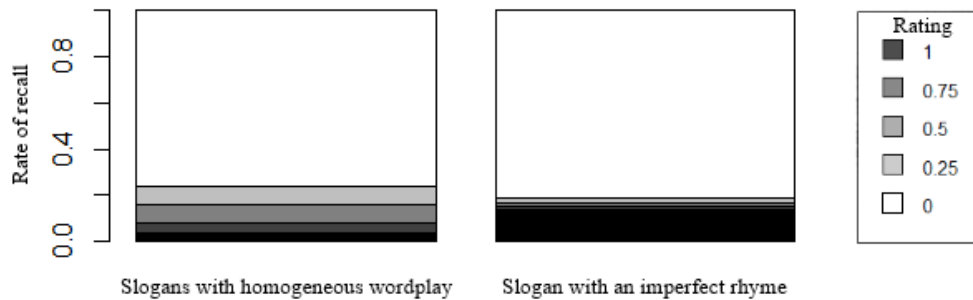
Figure 26: Slogans with homogeneous wordplay vs. slogans with an imperfect rhyme, immediate recall - barplot

The recall rates for the slogan with an imperfect rhyme are particularly interesting when compared to the rates for slogans with other deviating wordplays such as compound wordplays or sounds. While these slogans seem to produce higher recall rates for slogan keywords (0.25 recall points) or the overall message/ humour of the slogan (0.5 recall points) through strong collocations, the slogan with an imperfect rhyme has almost no partial slogan recall, but a very high complete recall rate. Collocations could play a decisive role in this case, too – mentioning the *InterSpar* grocery chain could trigger word associations for 'shopping'. If the subject still remembers that the *InterSpar* slogan included a rhyme, the (imperfect) rhyme word 'shocking' should quickly come to mind. By adding a connecting 'not' in between those two words, the slogan is complete. Thus, recall for this slogan with an imperfect rhyme is either complete, or if subjects cannot recall the support word 'shopping', non-existent. The potential of rhymes to raise recall rates has been well-researched. A study by Bower and Bolton (1969) about rhymes and recall, for example, investigates the recall of perfectly rhyming word pairs and reaches a conclusion that might also explain the recall rates of slogans with imperfect rhymes: "the rhyming relation restricts the range of response alternatives to the stimulus, practically converting recall into a recognition test" (Bower and Bolton 1969: 453). What is more, rhymes are rated

by potential consumers as "more likeable, more original, easier to remember, more suitable for campaigns, more persuasive and more trustworthy" than non-rhyming slogans (Filkukova and Klempe 2013: 423).

The overall recall rate for the slogan with an imperfect rhyme is slightly lower than the one for slogans with homogeneous wordplay, but this does not necessarily constitute a general recall tendency with regard to slogans with imperfect rhymes. As in all other deviating wordplay cases, clear statements about the overall recall rate would require more slogans with imperfect rhymes and thus more data.

4.3.6 Interim summary

The discussion of study results brought several new insights.

First, mixed-language non-humorous slogans were discussed. They (as well as their humorous equivalents) trigger a cognitive mechanism called 'frame-violation' caused by the switch from German to English and thus lead to higher processing costs. This has an impact on recall which can be positive or negative (depending on the target group).

As a second step, a more general look at all categories of non-humorous slogans was taken. The non-humorous slogan category that reaches optimal relevance is German, as it is the subjects' mother tongue and thus requires relatively low processing costs (with the same low benefit as the other slogan categories). English slogans come in second place, as they are formulated in a foreign language, and German-English ones – which require the processing of a frame-violation – come last.

The third step examined all humorous slogan categories. The application of humour theory showed that every slogan category with wordplay includes script oppositions, which means that the processing costs of humorous slogans are higher than those of non-humorous ones. Nevertheless, their recall rates are generally higher than those of their non-humorous counterparts. This is due to the

higher benefit of humorous slogans because they offer an additional entertainment factor.

As a fourth step, the recall results for both humorous and non-humorous slogan categories were discussed with regard to target-group-specific differences. The general factors 'age' and 'education' proved to be decisive for slogan recall. A very general rule regarding age, education and slogan recall could be: the older the target group, the lower the slogan recall; the higher the level of education, the higher the slogan recall. Particular attention needs to be paid to consumers with low education levels and to older consumers with low education levels. All age groups with low education tend to recall German slogans better than German-English and English ones, even if the German ones are without wordplay. This is presumably due to those groups' lack of English knowledge and their lower cognitive abilities. What is more, older consumers with low education do not seem to differentiate between non-humorous and humorous German slogans, possibly because they do not understand the wordplay included in the slogan.

Consumers of all ages with a lower level of education and consumers of all ages with a higher level of education were then examined in detail concerning their recall of slogans with and without wordplay. Recall results were explained with the previously introduced term 'frame-violation', as well as humour theory and relevance theory. The following chart sums up the general results.

	Cost	Benefit	Recall
Lower education with wordplay	German-English German		German-English German
Higher education with wordplay	German-English German/ English		German/ English German-English
Lower education no wordplay	German-English English German		German-English English German
Higher education no wordplay	German/ English/ German-English		German/ English/ German-English

Table 12: Summary of cost, benefit and recall

Subjects with a lower education thus have highest recall for German humorous slogans, as these slogans offer the highest benefit combined with the lowest processing effort. Likewise, in the category of slogans without wordplay, they recall German slogans best because of the low processing effort. Subjects with a higher education level have the highest recall for German-English slogans with wordplay. These slogans have a high benefit and undergo deeper cognitive

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processing through frame-violation and script opposition. Unlike subjects with a lower education, they seem to have the cognitive abilities to process such slogans sufficiently well despite their double cognitive charge. With regard to slogans without wordplay, German, English and German-English non-humorous slogans have equal recall rates for subjects with a higher education because of their consistently low processing costs.

As a last step, slogans with deviating wordplay were examined more closely. Although they did not confound the statistical model, their recall rates nevertheless differ from those of homogeneous wordplay slogans. Because they include strong collocations, compound wordplays and wordplays which involve sounds seem to produce higher partial slogan recall. In contrast, wordplays with imperfect rhymes might have the potential to raise complete slogan recall rates. Homographic wordplays and the position of wordplays in the slogan do not seem to have a major influence on recall, but more data on deviating wordplay slogans is needed in order to draw general conclusions.

The results of this study differ from those of a previous study by Fuhrich and Schmid (2016, cf. chapter 3.4). While the previous study showed the highest rates of recall for English humorous slogans, in this study, mixed-language German-English humorous slogans are recalled best by the same target group. Since this study considers and eliminates all limitations addressed in the previous work, uses more advanced statistical models and has a higher number of study participants, it can be assumed that it gives clearer and more valid results. Nevertheless, the previous finding that wordplay and choice of language have an influence on slogan recall can be confirmed.

5. Study on retention and recall after one week

The first study gave significant new insights into the recall rates of differently constructed slogans, particularly with regard to various target groups in advertising. It also provided explanations for specific recall patterns. However, recall was tested, on average, 5 to 8 minutes after the consumers' first exposure to the slogans. The study therefore cannot predict recall rates after a longer period of time. Do the same mechanisms of slogan retention and recall apply after one week, or are there significant differences? The second study examines these questions and provides linguistic explanations for its results. The design of the second study is similar to that of the first, but differs in the number and choice of study participants, choice of slogans and time span. The test group and test setting, study design and choice of slogans and brand names will be described next, followed by the results and a discussion of this second study.

5.1 Design

5.1.1 Test group and setting

This study focuses on the specific target group of 16-30 year olds with a university entrance qualification. The decision for this choice of target group is based on the fact that it was extremely difficult to find new test persons who were not familiar with the study design and who could be persuaded to be available for participation in a second survey one week later. Study subjects willing to do so were found within an academic setting. Former and current students of English were sent online links to the specific questionnaires by lecturers of the English department at LMU Munich.

91 students of English, all between 18 and 29 years old, participated in the full study. As in the previous study, study participants were sent a link to an online questionnaire, made available through the provider *surveymonkey*. The settings of the online questionnaire are identical to those of the first study.

5.1.2 Study design

The first part of the study, presented to study participants in the first of two study weeks, is identical to the previous study in its design, and consists of a list of slogans with a processing task, a distractor task and a recall task. The gradual rating system applied to the answers given is also identical. The second part of the study, presented to study participants in the second of two study weeks, lists brand names and asks participants to enter the corresponding slogans. The following figure shows a sample questionnaire.

Figure 27: Study on recall after one week, sample of recall task

Afterwards, subjects were asked if they had talked about one or more of the slogans since participating in the first part of the study the previous week and, if

so, about which one. This might have had an influence on slogan recall, but the question was negated by every study participant.

5.1.3 Choice of slogans and brand names

Due to the comparatively low number of study participants, only two out of the six available questionnaires from the previous study, namely questionnaires 1 and 6, were randomly chosen for the second study. The slogans and brand names used in these questionnaires are the same as those of the first study.

5.2 Results

In the following, the influences of humour and language on slogan recall one week after slogan exposition will be analysed in both a descriptive and an inferential way. For this study, a new linear mixed model with a normal distribution (Fahrmeir et al. 2013) was calculated with version 0.99.893 of *RStudio* (R Core Team 2014), using the *gam*-function and its package *mgcv* (Wood 2006). The new data consists of recall rates collected immediately after slogan exposure (week 1) and recall rates collected one week after slogan exposure (week 2). Both are taken into account for the new model.

Following on from the initial descriptive and inferential analyses, linguistic theories will provide an explanation for the study results. The next step will be to examine the recall difference that one week makes before describing the influencing factors humour, language, interactions between humour and language and deviating wordplay.

5.2.1 Time

The following boxplot illustrates immediate recall rates in week 1 compared to recall rates one week after slogan exposure in week 2.

Clearly, the factor 'time' has a negative influence on slogan recall. From week 1 to week 2, recall rates decrease significantly. Details can be seen in a barplot:
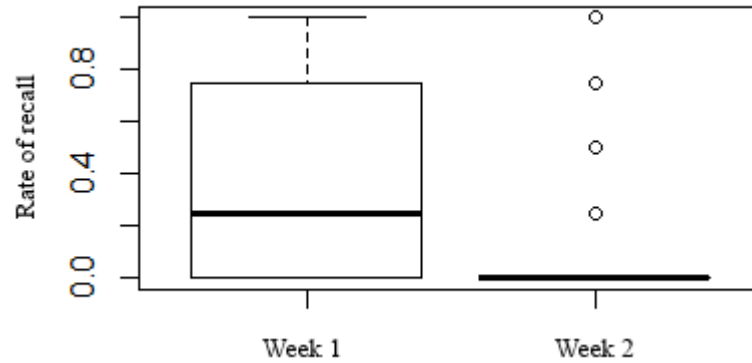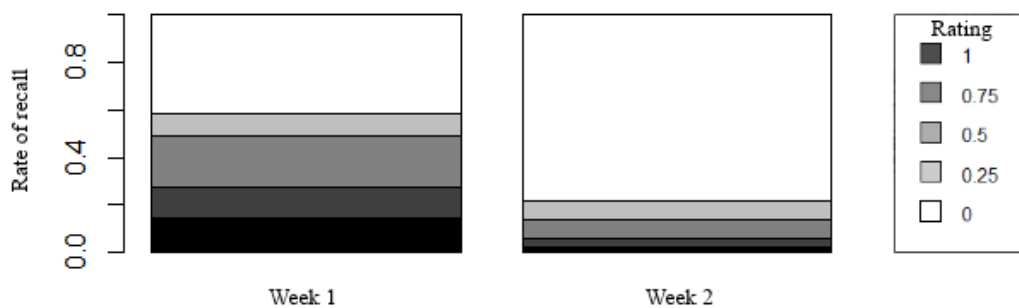
Figure 29: Recall rates of week 1 vs. week 2 - barplot

According to this plot, fewer recall points are awarded in week 2 in every recall rate category, whether it is 1 point for complete slogan recall or 0.25 points for partial slogan recall. Inferential statistics support the boxplot and barplot with a negative estimate for week 2 (ß = -0.29105, p < 0.001). The factor 'time' thus certainly has an influence on slogan recall.

As a next step, in analogy to chapter 4, the factors 'humour' and 'language' as well as their interactions will be examined with regard to their influence on recall one week after slogan exposition.

5.2.2 Humour

Results from the first study showed that immediate slogan recall rates are higher for slogans with wordplay than for slogans without wordplay. Descriptive statistics indicate that this tendency also continues one week after slogan exposure. The following boxplot for recall results after one week illustrates this.
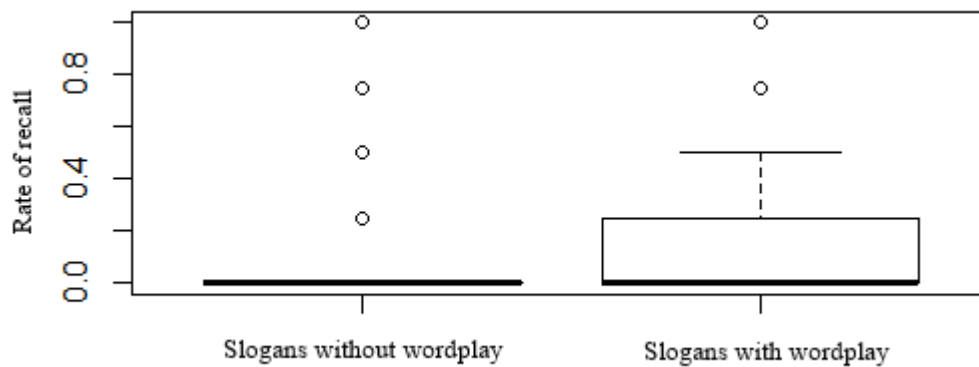
Figure 30: Recall rates of non-humorous vs. humorous slogans, recall after one week - boxplot

Slogans with wordplay (on the right hand side of the boxplot) are thus better recalled than slogans without wordplay (on the left hand side).

A barplot gives more details.
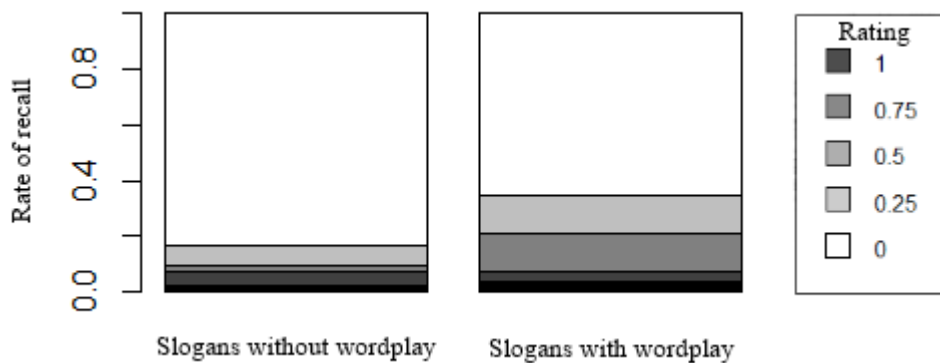
Figure 31: Recall rates of non-humorous vs. humorous slogans, recall after one week - barplot

According to this figure, single keywords in particular (rated with 0.25 points) and the overall message of the slogan (rated with 0.5 points) have a higher rate of recall when the slogan involves wordplay. Correct slogan recall (rated with 1 point) is also slightly higher. Recall results for slogans without wordplay vs. slogans with wordplay after one week are thus similar to the results of recall immediately after slogan exposure. Only almost correct slogan recall (rated with 0.75 points) is slightly higher for slogans without wordplay than it is for slogans with wordplay. The interaction between 'humour' and 'week 2' gives the statistical values ß = -0.07509 and p > 0.05.

It appears obvious that wordplay thus has a positive impact on slogan recall. However, as in the first study, other factors, such as the use of English elements, also need to be considered for a complete result analysis. The influence of English and German-English slogans on recall will be examined next.

5.2.3 Mixed-language and English

The influence of a mixed-language or English slogan on recall one week after slogan exposure is not as straightforward as the influence of a slogan using wordplay. The corresponding boxplot is inconclusive, but the following barplot gives detailed descriptive results of the second study.
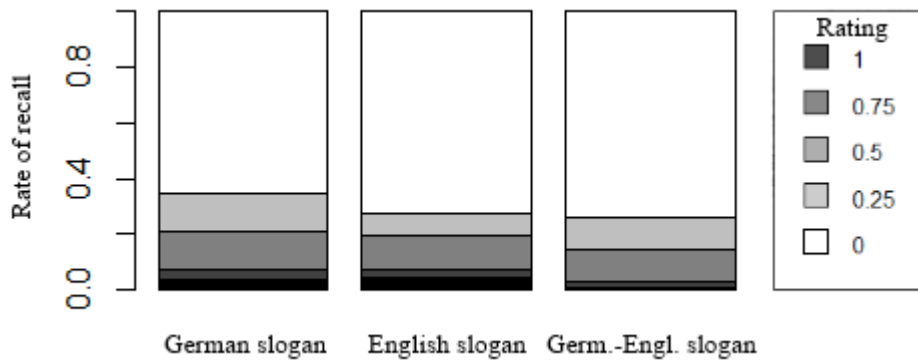
This barplot does not differentiate between humorous and non-humorous slogans, but it clearly shows the differences between German, English and German-English slogan recall of the examined target group. German slogans have the highest rate of recall, closely followed by English and German-English slogans. German slogan recall seems to be particularly high for specific keywords (0.25 points) and the overall message of the slogan (0.5 points). Correct (1 point) and almost correct (0.75 points) recall is rare in all three language categories, with German-English slogans having almost no correct recall occurrence at all. Thus, one week after slogan exposure, a clear difference can be seen in the recall of German, English and German-English slogans. The interaction between 'week 2' and 'English' shows the statistical values ß = -0.092064 and p > 0.05; the interaction between 'week 2' and 'German-English' shows ß = -0.056006 and p > 0.05.

In the last section and the previous one, the general factors 'humour' and 'language' were examined separately. In the following section, a closer look will be taken at the combination of these two factors.

5.2.4 Interactions between humour and language

Descriptive vs. inferential values

The factors 'humour' and 'language' both need to be considered in order to make predictions about slogan recall. Which effects do these factors have in combination with each other? The following mosaic plot will illustrate this.
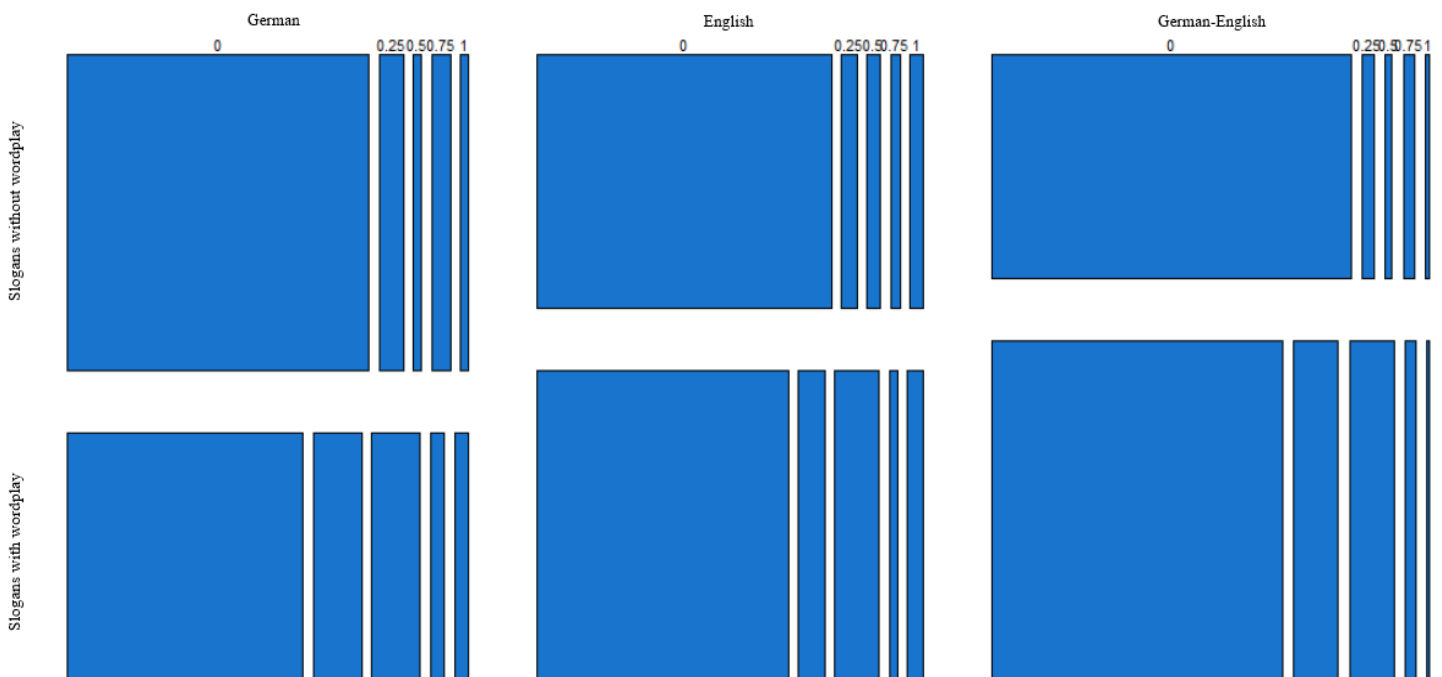
Figure 33: Recall rates of slogans with a feature combination, recall after one week

The numbers above the different bars represent the rates of recall for German (first column), English (second column) and German-English (third column) slogans in combination with (second row) or without (first row) wordplay. It is immediately noticeable that the specific boxes are not equally wide in every row. This stands in contrast to fig. 9, the mosaic plot which gives immediate recall rates, in which the box widths are equal. This does not affect the validity of the mosaic plots. It is only due to the fact that all slogan categories are represented in equal amounts in fig. 9 and that the study setup in this chapter uses only 2 out of the 6 available study questionnaires.

It is also immediately visible that slogans with wordplay have higher recall rates than slogans without wordplay. A closer look shows that humorous slogans in all languages have the best recall for keywords (0.25 points) and the overall message (0.5 points), but complete slogan recall is rare. Non-humorous slogans have very low recall rates for all recall points. German and German-English non-humorous slogans show a very slight tendency towards higher recall rates for keywords (0.25 points) and complete slogans with only one word missing (0.75 points) than for complete slogan recall (1 point) or for a recall of the overall message with more than one word missing (0.5 points).

However, these are just the results from descriptive statistics. Some results have to be interpreted differently with the help of inferential statistics.

These statistics give positive estimates for the three-way interaction humour:English:week2 ($ß = 0.09635$, $p > 0.05$) and for the three-way interaction humour:German-English:week2 ($ß = 0.11605$, $p > 0.05$). The interaction effects with humour are thus higher than in week 1. Due to the complexity of manual calculations for the estimates of these three-way interactions, a *predict*-function was run through the data in order to be able to work with exact values. Unlike in chapter 4, this function does not have the task of filling gaps regarding specific target groups or predicting new data, its task is to calculate the correct values of interactions.

The following table shows the calculated recall rates for each slogan category one week after slogan exposition.

Wordplay	Language	Expected Recall Rate
Without wordplay	German	0.06
Without wordplay	English	0.03
Without wordplay	German-English	0.00[30]
With wordplay	German	0.15
With wordplay	English	0.2
With wordplay	German-English	0.17

Table 13: Calculated recall rates for each slogan category, recall after one week

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[30] The actual value of the model is -0.01, but is set to 0.00 for reasons of understanding.

The following figure shows a visualization of these results.
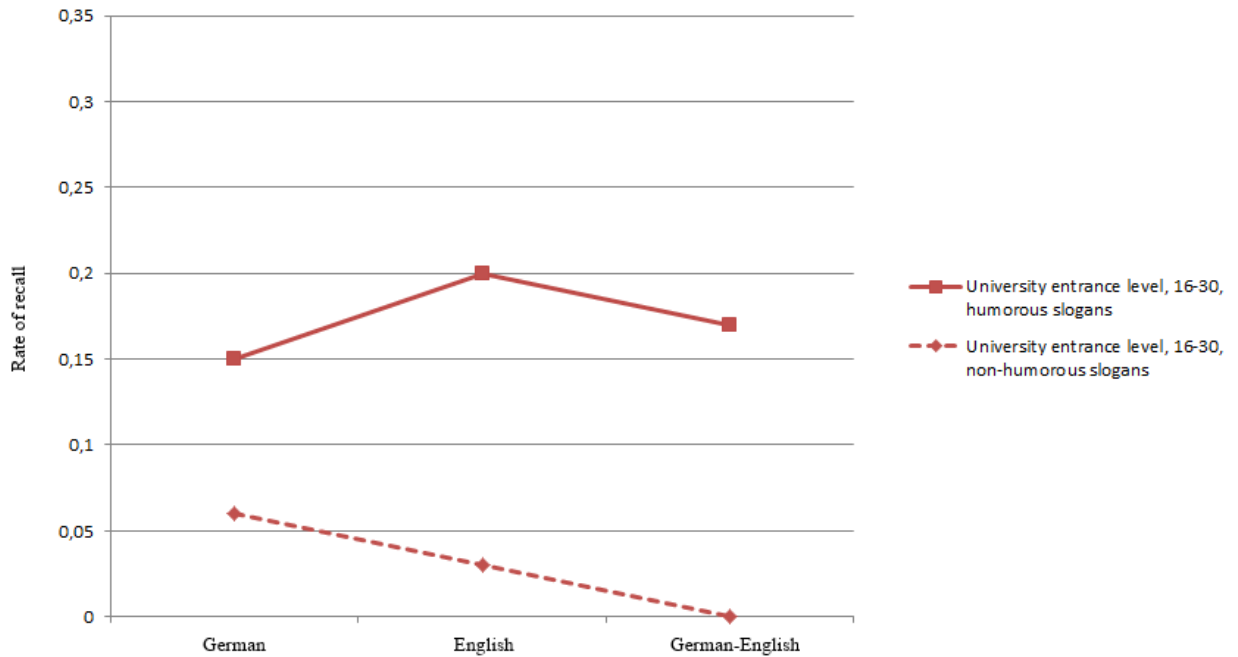
Figure 34: Recall rates of subjects with a university entrance level one week after slogan exposition

The dotted line with lower rates of recall represents slogan recall for slogans without wordplay, while the continuous line shows recall for slogans with wordplay. While it is unsurprising that slogans with wordplay show a higher rate of recall, it is remarkable that the recall rates for humorous slogans do not follow those of non-humorous slogans in their general recall tendency. When it comes to non-humorous slogans, German ones have the highest rate of recall, followed by English and then German-English slogans. In the case of humorous slogans, it is not German slogans that can be recalled best, but English ones, followed by German-English and then German ones.

Furthermore, seemingly contrary to the results of the descriptive mosaic plot, English humorous slogans have the highest recall, followed by German-English humorous slogans and then, in third place, German humorous ones. Moreover, the expected recall rates for non-humorous slogans are different to the descriptive ones: German non-humorous slogans come in fourth place, followed by English ones in fifth and German-English ones in sixth place.

Chapter 4 showed that subjects aged between 16 and 30 years and with a higher level of education have the highest rate of immediate recall for German-English humorous slogans (followed in second place by German humorous slogans and English humorous slogans with equal recall results). This chapter, in contrast, shows that the same target group has the highest rate of slogan recall for English humorous slogans (followed by German-English and then German ones) one week after slogan exposition. When it comes to non-humorous slogans, German non-humorous slogans now have the highest recall rate, followed by English and then German-English ones. In week 1, German and English non-humorous slogans had equal recall rates and German-English ones came last.

Before turning to the discussion of these results in chapter 5.3, the following section will take a closer look at the seemingly contradictory recall results of descriptive versus inferential statistics. The recall rates of German vs. English humorous slogans will be examined first before turning to those of German-English humorous slogans[31].

Descriptive vs. inferential: English and German humorous slogans

Contrary to the assumption, there is no clash between the descriptive and inferential recall results for English and German humorous slogans. The predict function of *RStudio* gives higher recall rates for English humorous slogans than for German humorous slogans, and this is also confirmed by the descriptive mosaic plot : German humorous slogans have less recall rates of 0 recall points, but English humorous ones have a higher proportion of complete slogan recall (rated with 1 recall point). This pulls the general recall rate upwards and is the reason why both in descriptive and inferential statistics, English humorous slogans are expected to produce higher recall rates than German humorous ones.

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[31] I would like to thank Alexander Bauer from the statistics laboratory at LMU ('StabLab') for his explanations and advice concerning this topic.

A basic issue needs to be addressed concerning German-English humorous slogans. A mosaic plot only offers a marginal description of data unlike a regression model which eliminates the effects of other influencing variables. Descriptive and thus marginal considerations are therefore always to be treated with caution. In the case of this mosaic plot, no further influencing variables exist apart from the examined ones, but the regression model uses random intercepts which are not considered in the descriptive plot. These intercepts carry out corrections of the individual recall capabilities of study participants and of the different products mentioned in the study, as some of them might appear more interesting to specific subjects and are thus more noticeable than others. The product parameters (estimated per person) differ between -0.2 and +0.2 recall points, meaning that products differ clearly in their general recall rates. The differences in the results of descriptive versus inferential statistics might thus be due to the fact that not every combination of language, humour and product was examined equally because only two out of six questionnaires were used. The recall of German-English humorous slogans might thus have been requested for products which were recalled less, or those slogans might have been requested from study subjects with lower recall capabilities than others. Therefore, a marginal mosaic plot shows German-English humorous slogans to have the lowest recall rate of all humorous slogans, but, after eliminating the effect of specific products and persons in the inferential predict-model, recall results for German-English humorous slogans are higher.

In summary, the informative value of regression models is, in this case, greater than that of marginal descriptive plots, as plots do not eliminate the effects of other influencing factors. This is why the further interpretation of study results will be based on inferential models and not on descriptive plots. As a next step, deviating wordplay slogans will be examined before coming to an interim summary.

5.2.5 Deviating wordplay

As in the first study, the study on recall one week after slogan exposure includes slogans with deviating wordplay. As questionnaires 1 and 6 from the study on immediate recall were used for this follow-up study, the slogans with deviating wordplay consist of one compound-wordplay (*Beautiful teeth – world-white* for *Colgate* toothpaste), one sound (*Produziert von: Biene MmmJa* for *Marlene* honey) and one homographic wordplay (*Unsere Pizzen sind nicht süß, but herbs* for *Pizza Hut*). The following barplot shows that one week after slogan exposition, these three deviating slogans still make a difference in recall compared to more homogeneously constructed slogan wordplays.
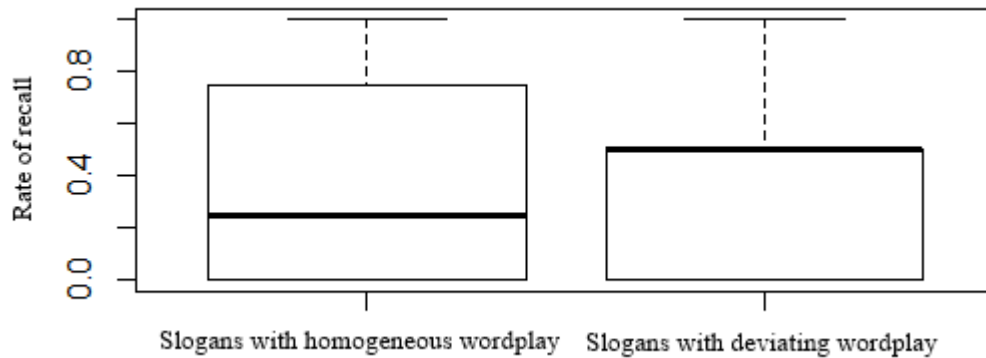
Figure 35: Slogans with homogeneous wordplay vs. slogans with deviating wordplay, recall after one week - boxplot

The median of slogans with deviating wordplay is clearly higher than that of slogans with homogeneous wordplay. A barplot reveals more details.
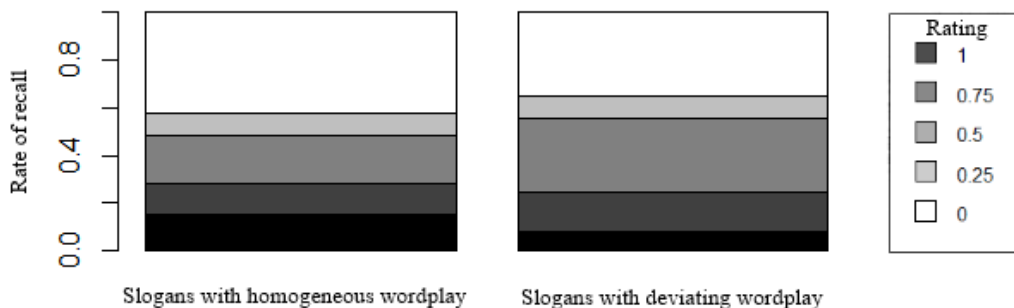
Figure 36: Slogans with homogeneous wordplay vs. slogans with deviating wordplay, recall after one week - barplot

According to this barplot, slogans with homogeneous wordplay have a larger amount of complete slogan recall (rated with 1 recall point), whereas slogans with deviating wordplay have a particularly high recall rate for the exact message and/or wordplay of the slogan (0.5 recall points). Inferential statistics for the interaction wordplay:week2 show ß = 0.08023 and p > 0.05, proving that deviating wordplay still influences recall in week 2.

Potential confounds thus also exist in week 2, but a comparison between significance models with and without deviating wordplay data sets (see appendix) shows that they do not affect the general meaning of the statistical values of week 2 such as the positive or negative signs of estimates. This is why I shall continue to use the data relating to slogans with deviating wordplays in the study.

5.2.6 Interim summary

Since the tested subjects all belong to one homogeneous target group, this chapter does not include a target-group-specific description of individual features such as age or level of education. The resulting description of the second study was thus kept relatively short.

One week after slogan exposure, humour and language continue to be factors influencing slogan recall. Humour increases slogan recall rates for every slogan, whether they are in German, English or German-English. As far as language is concerned, inferential statistics reveal that, one week after slogan exposure, English humorous slogans have the highest rates of recall, followed by German-English and then German slogans. This is particularly striking because German humorous and – in the case of subjects with a higher level of education – German-English humorous slogans can be recalled best immediately after slogan exposure. Three slogans with deviating wordplay were identified as potential confounds, but did not particularly change the overall interpretation of the remaining variables and their interactions.

5.3 Discussion

Having discussed recall results one week after slogan exposure in the previous chapter, it is now possible to analyse those results. The recall results of slogans without wordplay will be discussed first using frame theory and relevance theory. Humour theory will then be used to help in analysing slogans with wordplay. Because of the new recall results for slogans with wordplay one week after slogan exposure, a new theory will be introduced: the predictive coding theory. The results of deviating wordplay slogans will then be discussed before coming to an interim summary.

5.3.1 Time

Time influences slogan recall in week 2. This statement is supported by statistical results. The variable 'week 2' has a negative estimate (ß = -0.29105, p < 0.001), meaning that, compared to immediate recall for non-humorous German slogans in week 1 by subjects with a university entrance qualification (subjects and slogan category are included in the reference category), recall by the same target group for the same slogan category after one week decreases by the factor -0.29105, given that all other variables remain constant.

In 1885, the German psychologist Hermann Ebbinghaus showed that time is a recall-influencing factor. He shaped the term 'forgetting curve' which describes that information can be forgotten over time:

> […] initial information is often lost very quickly after it is initially learned, and factors such as the way in which the information is learned and how frequently the information is reviewed play important roles in the rate at which these memories are lost (Hu et al.: 1).

Since then, this has been confirmed regularly by a variety of studies. In advertising and opinion dynamics, for example, the Ebbinghaus forgetting curve is used to explain that opinion affected by advertising declines over time (Luo et al. 2014: 254); the concept of forgetting curves also explains why "information read in a narrative can be organized in a manner similar to memories from one's own life" (Copeland, Radvansky and Goodwin 2009: 334).

Time as a recall-influencing factor has also been examined outside the concept of a forgetting curve. For example, it influences the recall of patients for their general practitioners' advice (Selic et al. 2011: 1), or the memory of conversations with others (Stafford et al. 1987: 203). The present study shows that recall of advertising slogans is no exception to these general recall tendencies and that, in the case of advertising slogans, time influences recall negatively.

5.3.2 Frame-violation and relevance theory applied to mixed-language slogans without wordplay

Chapter 4 has already shown that mixed-language slogans without wordplay include a frame-violation, which leads to significantly lower recall rates than those for monolingual slogans without wordplay. They require greater processing effort because of the frame-violation and, at the same time, their benefit is as low as the other non-humorous slogan categories. This does not change in week 2: low recall of mixed-language non-humorous slogans immediately after slogan exposure does not turn into high recall after one week. Furthermore, the factor 'time' causes a loss of recall capability during the one week that passes before subjects are tested again. Recall rates for German-English non-humorous slogans are thus the lowest. The linear mixed model supports this analysis by giving an insignificant p-value (ß = -0.05601, p < 0.05) for the interaction between 'week 2' and 'German-English'. The p-value describes the difference between the effects in week 1 and week 2. Since the value is insignificant, German-English as slogan language also has an effect in week 2. The negative estimate shows that there still is a difference between non-humorous German-English and non-humorous German slogans in week 2, but that it is lower by a factor of -0.056006 compared to week 1, given that all other variables remain constant.

5.3.3 Relevance theory applied to monolingual slogans without wordplay

In comparison to mixed-language slogans without wordplay, monolingual (German and English) slogans without wordplay do not include two languages and therefore do not involve a frame-violation[32]. In terms of relevance theory, this means that they have the same low benefit as German-English slogans, but require less processing effort. English non-humorous slogans still require slightly more processing effort than German non-humorous ones because of the foreign language. This is demonstrated by the inferential recall results, which show lower predicted recall for English than for German non-humorous slogans. The statistical model shows insignificant p-values and a negative estimate (ß = -0.09206, $p < 0.05$) for the interaction between English and week 2. As mentioned above, the p-value describes the difference between the effects in week 1 and week 2. An insignificant p-value thus means that English as slogan language has an effect in week 2. The negative estimate expresses that, with respect to subjects with a university entrance qualification, the difference between non-humorous English and non-humorous German slogans in week 2 is lower by a factor of -0.092064 compared to week 1, given that all other variables remain constant. In week 1, the tendency towards lower recall for English non-humorous slogans than for German non-humorous slogans is not yet evident: these two slogan categories have equal immediate recall results for the target group of 16-30 year olds with a university entrance qualification. It seems that the influencing factor 'time' underlines the differences in slogan constructions, with slogans that require more cognitive processing being more difficult to keep in mind for an extended period of time. The slogans with the lowest cognitive processing effort – German non-humorous ones – thus have the highest rate of recall after one week, followed by English non-humorous slogans, which need comparatively low processing effort, but nevertheless require study subjects to process a foreign language. The language switch from German to English in mixed-language non-humorous slogans requires the highest processing effort in the category of non-humorous

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[32] As mentioned before, a slight frame violation might also take place in the case of the first monolingual English advertising slogans processed by German native speakers in a German environment. However, this is a relatively weak influencing factor (Fuhrich and Schmid 2016: 151).

slogans and thus seems to be the most difficult non-humorous slogan to retain for a one-week period.

5.3.4 Humour theory and relevance theory applied to slogan wordplays

One week after slogan exposure, slogans with wordplay have higher recall rates than slogans without wordplay. The use of humour thus continues to be one of the highest recall-influencing factors, even one week after exposure to a humorous slogan. The reasons for the higher recall of humorous slogans were mentioned in chapter 4.3.3.In short, they provide more benefit than non-humorous slogans because their wordplays have an entertaining effect. This benefit apparently outweighs the higher processing effort caused by the script opposition.

The interaction humour:week2 shows the statistical values $ß = -0.07509$ and $p < 0.05$. The negative estimate demonstrates the fact that, with regard to subjects with a university entrance qualification, recall of humorous German slogans decreases by -0.07509 in week 2 compared to recall of humorous German slogans in week 1, given that all other variables remain constant. As the p-value describes the difference between the effect of humour in week 1 and week 2, an insignificant value shows that humour also has an effect in week 2. The three-way interactions humour:English:week2 ($ß = 0.09635$, $p > 0.05$) and humour:German-English:week2 ($ß = 0.11605$, $p > 0.05$) show that interaction effects due to humour are higher in week 2 than they are in week 1. The interaction humour:English increases by a factor of 0.09635 and the interaction humour:German-English increases by a factor of 0.11605, given that all other variables remain constant.

It is striking that, one week after slogan exposure, the recall results for slogans without wordplay are identical to those after immediate recall, but that the recall results for slogans with wordplay in week 2 differ from those of week 1. The inferential values above, in particular, make it clear that wordplays have a stronger influence on English and German-English slogans than they did in the study on immediate recall. This finding will be explained with the help of predictive coding theory in the next section.

5.3.5 Predictive coding theory

Theory

Predictive coding theory is "a highly influential theory for cognitive function and behavior, and one of the plausible theoretical frameworks that may explain the signal processing architecture of the cortex" (Kogo and Trengove 2015: 4). As "a multilevel account of some of the deepest natural principles underlying learning and inference" (Clark 2013: 1), it is not only capable of providing an explanation for particular learning and inferencing mechanisms (Hohwy 2013: 162), but the collaborations and exchanges between different scientific areas such as neuroscience or philosophy "promise to be among the major intellectual events of the early twenty-first century" (Clark 2013: 1).

According to predictive coding theory, the brain is to be seen as a prediction machine (Clark 2013: 1). Neural networks "learn the statistical regularities inherent in the natural world and reduce redundancy by removing the predictable components of the input, transmitting only what is not predictable" (Huang and Rao 2011: 580). This means that only those pieces of information are transmitted that differ from the predicted information, which is a very economical way of processing information (Huang and Rao 2011). The visual cortex can be seen as a hierarchy, "with higher level units attempting to predict the responses of units in the next lower level via feedback connections" (Huang and Rao 2011: 587) in a top-down process. As long as this predictive model is correct, the cognitive process stops here, but if there is an error, lower level units send back the difference between prediction and actual fact and the higher level estimations are adjusted (Huang and Rao 2011; Clark 2013). "The reciprocal exchange of bottom-up prediction errors and top-down predictions proceeds until prediction error is minimized at all levels and conditional expectations are optimized" (Friston 2010: 130). This exchange and the correction of prediction errors presumably lead to a greater processing depth.

The basic process of adjusting predictions is already familiar to us. Chapter 4.3.1 introduced frame-shifting, which also treats the reinterpretation of situations. Frame-shifting starts when the frame established does not match the expectation. A frame-shifting cue then triggers a frame-shifting process which

creates a new, better-fitting frame for the present situation. While the mechanism is generally the same, predictive coding offers more details about cognitive processes, for example when differentiating between higher and lower level units and the bottom-up and top-down processes connected with them. The focus of predictive coding theory on unpredicted elements, which are seen as prediction errors and are reported by lower level units to higher level units in a bottom-up way, is especially helpful for analyzing the study results of this chapter.

Predictive coding theory can be seen in relation to the free-energy principle, which "tries to provide a unified account of action, perception and learning" (Friston 2010: 127). Free energy is to be understood as an "upper bound on surprise" (Friston 2010: 128), and "any self-organizing system that is at equilibrium with its environment must minimize its free energy" (Friston 2010: 127). In terms of predictive coding, the surprise that needs to be minimized comes with wrong predictions, which need to be limited. Optimization thus seems to be a key theme in both the free-energy principle and the predictive coding theory. "Furthermore, if we look closely at what is optimized, the same quantity keeps emerging, namely value (expected reward, expected utility) or its complement, surprise (prediction error, expected cost)" (Friston 2010: 127). Reward (or benefit) and cost are strikingly familiar terms which are also used in relevance theory. While it is not possible to link recall rates directly to the relevance of an utterance, predictive coding theory (as essentially a theory of learning) is capable of explaining learning mechanisms. It thus closes the gap between the construction of a specific utterance and its recall.

Application

The two studies showed the result that the tested target group has the highest rates of immediate slogan recall for German-English humorous slogans, followed by German and English humorous slogans with equal recall results, and that slogan recall rates one week after slogan exposition are highest for English humorous slogans, followed by German-English and then German ones. This section will explain this result with predictive coding theory.

In the case of non-humorous and humorous advertising slogans designed in German, English or German-English, predictive coding theory is applicable under the likely assumption that, in their German-speaking environment and with respect to advertising slogans in particular, German subjects, even those with high education, encounter mainly German utterances. This assumption is even more likely because the study was conducted in a German language setting and study instructions were given in German. Higher level units thus predict encounters with slogans in the German language, and, if the slogans are indeed in German, no correction needs to be made. A German-English or English slogan, however, causes a prediction error. The difference between prediction and actual fact is sent back by lower level units and an adjustment of the predictive model will be carried out by higher level units. Besides German slogans, German-English and English ones will also be expected in the same setting in future.

The 'future' referred to does not occur immediately. A certain period of time needs to pass for memory consolidation, e.g. through sleep (Payne and Nadel 2004; Stickgold and Walker 2007; Rasch and Born 2013). This period of time has not yet passed when subjects are asked for slogan recall immediately after slogan exposure. German humorous slogans (in the case of subjects with lower education) or German-English humorous slogans (in the case of subjects with higher education) then have the highest rate of slogan recall because of the reasons mentioned in chapter 4.3.4. However, one week after slogan exposure, memory consolidation through the adjustment of the predictive model has taken place and the structures that required adjustment and thus underwent higher cognitive processing, i.e. humorous English advertising slogans, are recalled best.

Non-humorous slogan categories in all languages do not seem to undergo a predictive model adjustment. Regarding both immediate recall in week 1 and recall one week after slogan exposure in week 2, study subjects with a university entrance qualification have the highest recall for German non-humorous slogans, followed by English non-humorous slogans and then German-English non-humorous slogans. Thus, it appears that slogans of all languages without wordplay are already part of the predictive model. Only German-English and English slogans with wordplay fall outside the regular model and need to be adjusted, which then leads to recall rates differing from those of week 1.

This does not automatically apply to all target groups. A wrong prediction leads to surprise, and "what is surprising for one agent […] might not be surprising for another" (Friston 2010: 127). Subjects between 16 and 30 years with a high level of education already seem to be used to non-humorous advertising slogans with English elements and only need to revise their predictive model when encountering English and German-English slogans with wordplay. However, subjects in the same age group with a low level of education might have other predictive models that are most likely to be oriented towards slogans in German: understanding English elements in advertising slogans already seemed to be problematic in the study testing immediate recall. Of course, the predictive process requires a basic understanding of the English language and thus of the English elements in the slogans. If this is not given, an adjustment of the predictive model will not take place and, unlike subjects with higher education, subjects with lower education will not recall humorous slogans with English elements better than they did in week 1.

In analogy to the recall results of the first study, a general decline in the recall rates of subjects older than 30 years is expected: the older the subjects, the lower the recall rates. At the same time, it is very likely that older subjects with a lower level of education will also have a poor understanding of the English language and thus continue to show highest recall for humorous slogans with German elements. By contrast, older subjects with a higher level of education might have similar predictive models to 16-30 year olds with a higher education and might thus show increased recall for humorous slogans with English elements.

5.3.6 Deviating wordplay

Introduction

As questionnaires 1 and 6 from the study on immediate recall were used for this follow-up study, the slogans with deviating wordplay consist of one compound-wordplay (*Beautiful teeth – world-white* for *Colgate* toothpaste), one sound wordplay (*Produziert von: Biene MmmJa* for *Marlene* honey) and one

homographic wordplay (*Unsere Pizzen sind nicht süß, but herbs* for *Pizza Hut*). The descriptive statistics in chapter 5.2.5 indicated clear differences between the recall rates for deviating slogan wordplays and their more homogeneously constructed counterparts. Inferential statistics show an insignificant p-value for the interaction deviating wordplay:week2 (ß = 0.08023, p > 0.05), proving that deviating wordplay still influences recall in week 2. The positive estimate expresses that, concerning subjects with a university entrance qualification, the difference between slogans with homogeneous wordplay and slogans with deviating wordplay in week 2 is higher by 0.08023 than in week 1, given that all other variables remain constant.

The following section gives explanations for these results, although they need to be treated with caution, as the data for deviating wordplays were already shown in chapter 4 to be insufficient for drawing general conclusions or creating a statistical model. In this chapter's study on recall after one week, there is even less available data because of the limited target group and the limited number of study slogans that were examined. Nevertheless, possible reasons for the recall rates for deviating slogan wordplays in week 2 will be given in the following.

Compound wordplay and sounds

In chapter 4, *Beautiful teeth – world-white* for *Colgate* toothpaste, together with another slogan with compound wordplay, achieved a higher rate of immediate recall than the one for homogeneous slogan wordplays concerning partial slogan recall (rated with 0.25 and 0.5 recall points), presumably because of the included word collocations. The same observation was made regarding the slogan *Produziert von: Biene MmmJa* for *Marlene* honey, which also has strong collocations between 'honey' and 'bee' as well as 'bee' and 'Biene Maja'. The following barplot illustrates the recall rates for humorous slogans with strong word collocations in week 2, using the example of the *Marlene* slogan; the *Colgate* slogan produces very similar results.
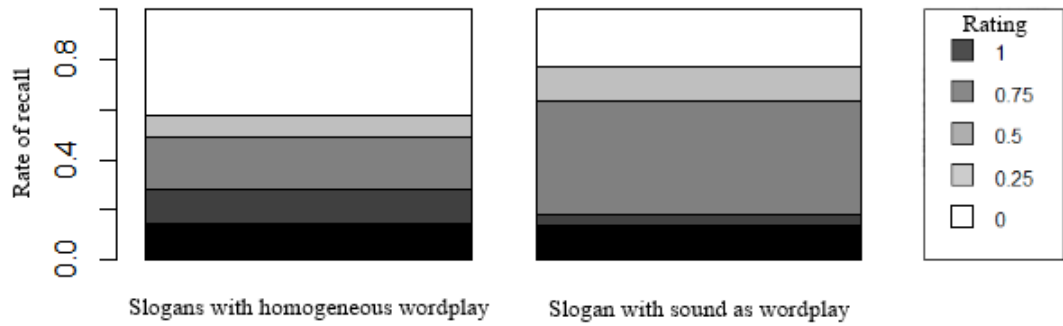
Figure 37: Slogans with homogeneous wordplay vs. slogan with strong collocations, recall after one week - barplot

The strong collocations seem to remain an influencing factor one week after slogan exposure. Again, it is particularly striking that partial slogan recall exceeds that of slogans with homogeneous wordplay, which supports the hypothesis that collocations facilitate recall for wordplay-carrying keywords.

Homographic wordplay

The *Pizza Hut* slogan *Unsere Pizzen sind nicht süß, but herbs* did not have significantly more recall than slogans with more homogeneous wordplay in week 1, presumably because of the weak to non-existent collocations between 'pizza' and 'herbs'. Recall in week 2 is illustrated in the following barplot.
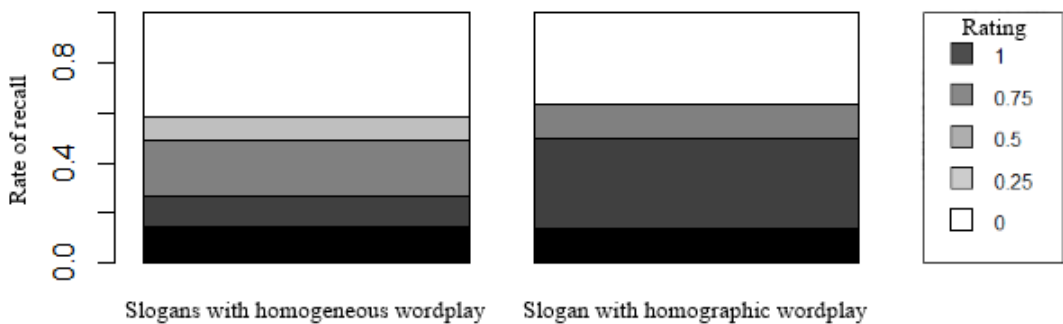
Figure 38: Slogans with homogeneous wordplay vs. slogan with homographic wordplay, recall after one week - barplot

One week after slogan exposure, recall rates for homographic wordplays look different to the rates in week 1. Almost-correct slogan recall in particular (0.75

recall points) is more frequent than the almost-correct recall for slogans with homogeneous wordplay, while the recall of specific keywords (rated with 0.25 points) does not seem to occur at all. As collocations-supported recall appears to have the tendency to increase recall rates for partial slogan recall (rated with 0.25 and 0.5 points), but not almost-correct slogan recall, a collocation does not seem to be the reason for this recall rate. The expectation was that, similarly to week 1, recall rates in every specific recall category would not be significantly higher than those for slogans with homogeneous wordplay. As the recall rates of no other deviating wordplay slogan have a similar barplot, it is assumed that this plot shows an unrepresentative part of the bigger picture of recall for homographic wordplays. This is due to the limited number of study participants and their homogeneous characteristics.

5.3.7 Interim summary

This analysing chapter began by analysing the factor 'time' and showed that time weakens recall for all slogan constructions after one week. Next, mixed-language slogans without wordplay were examined. Corresponding with the findings of the study on immediate recall, the two languages within one slogan cause a frame-violation and thus a higher cognitive processing effort than monolingual non-humorous slogans, but with the same low benefit.

Monolingual non-humorous slogans do not involve a frame-violation. One week after slogan exposition, their benefit is as low as that of mixed-language slogans, but their processing costs are lower and thus lead to a higher recall rate. At the same time, non-humorous slogans constructed in the foreign language – English – have a slightly higher processing cost than those in the native German language. German-English slogans thus have the lowest recall rate for slogans without wordplay, followed by English slogans and then German slogans, which have the highest rate of recall.

In week 2 also, it is the humorous slogans that have the highest rates of recall because their wordplays bring a higher processing benefit. However, the highest recall within this humorous slogan category is achieved for different

languages to those in week 1. Whereas in week 1 immediate recall by subjects with a university entrance qualification was highest for German-English humorous slogans, followed by German and English humorous ones with equal recall rates, in week 2 English humorous slogans are recalled best, followed by German-English slogans and then German ones. Thus, slogans with German elements seem to be recalled best in immediate recall tasks, but one week later, slogans with English elements are the ones with the highest recall. This can be explained with predictive coding theory: only the unexpected and therefore unpredicted elements of an advertising slogan undergo deeper cognitive processing in order to adjust the predictions for those slogans. In the case of the tested target group, these unpredicted elements are to be found in English humorous slogans and German-English humorous slogans. After one week and sufficient sleep consolidation, the necessary adjustment of predictions has taken place and English elements in slogans have a higher recall rate through deeper cognitive processing than German ones (which were already included in the first prediction).

The subjects comprised a homogeneous group of 16-30 year olds with university entrance qualifications. The expectations are that subjects belonging to higher age groups with the same or a higher level of education would have the same recall tendencies as the examined target group, whereas subjects with a lower level of education would not have a higher recall for English slogan elements in week 2 due to their limited English knowledge. Regardless of the factor 'education', it is assumed that recall after one week will generally be worse in the group of older participants. This was already demonstrated in the study on immediate recall.

The last step was to examine deviating wordplays. The three deviating wordplays included in the second study still seem to have an influence on recall one week after slogan exposition. This is due to the strong collocations involved in compound wordplay and wordplays with sounds. Surprisingly, homographic wordplays seem to have a higher rate of recall than in week 1. However, it is very likely that this result is unrepresentative due to the very limited amount of available data.

6. Implications for advertising agencies and companies

Advertising agencies, copywriters or companies are frequently in need for new slogans, either for the entire company or for a specific product or service. They are either at the very beginning of the process of inventing a slogan up from scratch, or they have already come up with some slogans and now need to choose the most promising one. It is either way important to not just decide for or against a slogan because of a vague gut feeling, but to apply objective criteria in order to find the most suitable advertising slogan. Which criteria should thus be applied for a reasonable decision-making? The results of the studies in this thesis indicate the following implications for advertisers or companies looking for the most efficient[33] slogan which might include wordplay or two languages, structured in the following four major points: know the effects of humour and language, know your company, know your target group and know your slogan.

6.1 Know the effects of humour and language

First of all, one should be aware of the fact that wordplays and English elements cannot simply be used without making further implicit statements. These potential slogan elements always come with associations or implications which should be known in order to use them for own purposes. As chapter 3.2.5 shows, the use of humour – or, more specifically, wordplays – conveys two meanings at the same time, strengthens relationships between consumers and advertisers, attracts more attention and is retained longer in memory, increases the attractiveness of the brand and/ or product and makes consumers feel entertained and belonging to a special and elite group. According to chapter 3.3, the use of English elements is associated with internationalism, modernity and hedonism. They stand for youthfulness, cosmopolitanism and hipness. Like slogans with wordplays, they are capable of attracting attention and, by assuming that the consumers understand the two languages involved in the slogan, the consumer feels like being part of an elite consumer group.

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[33] 'Efficient' in terms of highest rates of recall

The studies of this doctoral thesis show that the use of wordplays in slogans generally leads to a higher rate of recall (with the exception of humorous slogans with English elements processed by target groups with a lower level of education). The use of English elements requires a more target-group-specific analysis in terms of recall rates. Nevertheless, wordplay should not be used universally just because it leads to a higher rate of recall: a humorous slogan also has to match with the image and reputation of the corresponding company. The next major point to take into consideration for an effective advertising slogan is thus: know your company.

6.2 Know your company

Do humorous advertising slogans seem misplaced in the larger context of the company and its reputation? If so, it is recommended to choose a non-humorous slogan and pick the language combination (German, English or German-English) that brings the highest recall results for the targeted consumer groups. This does not mean that companies with rather serious occupations, e.g. companies which work with primal fears of humankind such as death like a funeral company, do completely have to reject humorous slogans. Also in these cases, the use of wordplay has the potential to increase likeability (Pepels 2005: 113) and attention rates (Bak 2014: 103) and might also reduce fears of contact. The most important point in using humorous slogans is that customers should still feel taken seriously and thus treated in a professional manner. Consequently, a humorous slogan that insults customers or plays down the achievements and performances of the company are not to be recommended, but selling products or services with a subtle wink is ideal, since it tells the customers that the company is not only competent, but also humorous and will treat the customers in a human and compassionate way. In the end, it is the responsibility of every company to decide if a slogan is appropriate and likeable or not – and this depends on the specific slogan and the sort and topic of wordplay used.

A more restrictive criterion is the following: is the company strongly incorporated in Germany and will generally not be linked to internationality or

progress? If so, a company should not be portrayed in a more international way than it actually is. This was attempted by the former drugstore chain *Schlecker* and did not work out fine (cf. chapter 1). A company with a strong base in Germany should stick to German slogans and consider the use of wordplay.

For companies with a relatively neutral reputation which can be associated with both progress and internationality, the use of wordplay and generally also two languages (German-English) is recommended. In this case, a decision for the perfect slogan in terms of potential recall strongly depends on the specific target group. The next major point is thus: know your target group.

6.3 Know your target group

Concerning gender-neutral products, gender as an influencing factor for slogan recall does not play a role[34]. However, age and level of education do. The right choice of the most efficient slogan is thus only possible if it is clear whom the slogan is intended for and who is supposed to buy the product or service later on. A clear profile of the respective target group makes the gives more value to the advertising space (Zurstiege 2015: 128), as this tells more about the individual preferences of potential consumers. The factors 'age' and 'level of education' and their influence on the right slogan choice will be discussed next.

6.3.1 Age

As a general tendency, rates of recall sink with increasing age. This has been observed in various other fields of research such as psychology and medicine already and also applies to advertising slogans (cf. chapter 4.3.4). This is independent from other target-group-specific influencing factors such as level of education or slogan-specific factors such as wordplay and language. It is thus recommended that a slogan is placed with higher frequency in media and forms of

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[34] This is the result of the study on immediate recall; similar results are assumed for the study on recall one week after slogan exposure.

publishing that are consumed by the specific target-group when this target-group consists of older people: the older the target group, the higher the frequency of advertising. The advertising slogan will then be called to mind more often and potentially has a high rate of recall through repetition.

6.3.2 Level of education

The level of education of the tested study subjects ranges from secondary general school level or lower to a university degree. It proved to be useful to divide these potential consumers into two groups: target groups with lower levels of education (who have a school level ranging up to an intermediate secondary school level) and target groups with higher levels of education (who have a university entrance level or higher). The two recall influencing slogan-specific factors 'wordplay' and 'language' will, in the following, be examined in combination with these two groups.

In general, slogans with wordplay are recommended, since they show a clearly higher rate of recall than slogans without wordplay. The reason for this is that they need more processing effort, but have a higher processing benefit through their additional entertainment factor and are thus more relevant. If the use of wordplay in a slogan is not possible because of the rather serious image of the company or the product, a non-humorous slogan should always be in German, regardless of the target group. The second best choice in terms of recall rates are English slogans, the most unfortunate choice is German-English. The reasons for this vary from target group to target group.

Concerning target groups with a lower level of education, purely German slogans should be chosen because English elements might lead to problems of comprehension or an extensive amount of processing costs. The message of the

slogan consequently might not come across when the slogan is in English or German-English.[35]

Concerning target groups with a higher level of education, German non-humorous slogans should also be preferably chosen when it is not possible to use wordplay. Although the first study on immediate recall shows that German and English non-humorous slogans have equally high recall rates and German-English non-humorous ones have only slightly lower ones, since this target group has enough English knowledge to understand every language part of the slogans, a memory consolidation of one week leads to different results in week 2. Highest recall is then achieved for German non-humorous slogans. After some time, the higher cognitive processing effort necessary for the processing of English elements thus also seems to influence the recall rates of subjects with a higher level of education.

All in all, if a company chooses a non-humorous slogan, the choice of language is relatively easy: all target groups, both with a lower and a higher level of education, will recall German non-humorous slogans best, although this is due to different reasons. Concerning non-humorous slogans, German slogans are thus recommended, followed by English and then German-English ones.

If slogans with wordplay area possible option for the respective company, these are recommended more than non-humorous slogans. This applies to both target groups with lower levels of education and target groups with higher levels of education. Concerning the combination of wordplay and humour, clear differences in recall rates are observed for the two target groups.

Concerning target groups with a lower level of education, German humorous slogans take the lead, followed by German-English and then English slogans with wordplay. The processing of the wordplay necessitates additional cognitive efforts. The cognitive charge of German humorous slogans is the lowest one, since German is the mother tongue of the subjects. German-English slogans come in second place, since they include a German part which is presumably

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[35] These are the results of the study on immediate recall, but similar results are expected for slogan recall one week after slogan exposition, as the English knowledge of consumers with a lower level of education will not improve in week 2 and consequently, German slogans will still show a higher rate of recall.

understood better than the English part, and English humorous slogans come last because of the lack of English proficiency and thus because of the comprehension problems of consumers with a lower level of education.[36]

Concerning target groups with a higher level of education, English slogans with wordplay are recommended, followed by German-English and then German ones. English language in combination with wordplay still seems to be so rare in the German advertising world that it tends to be surprising for subjects to encounter such a slogan. They revise their cognitive predictions, which leads to higher recall rates for slogans with English elements. This predictive coding effect prevails as long as slogans which include wordplay and English elements are relatively rare in advertising. The effect will disappear, however, as soon as these elements are so common that they are part of the predictive model of most of the target groups: the cognitive predictions for advertising slogans then do not need to be revised anymore and there will be no higher cognitive processing of these slogans. Consequently, there is a possibility that, in a few years' time, recall rates of target groups with a higher level of education for slogans with wordplay might become similar to those of immediate slogan recall, since subjects with a higher level of education get used to humorous slogans with English elements. German-English humorous slogans will then be recalled best, followed by English and German slogans with almost equal rates of recall. Thus, companies definitely make a good choice in choosing English or German-English slogans with wordplay as long as they match with the company image: German-English and English slogans will consistently show high rates of recall. This is currently due to a revision of the predictive model, but will in future be explainable with the higher cognitive charge through frame violation and script opposition.

If the prospective humorous slogan is aimed for both target groups with lower levels of education and target groups with higher levels of education, it is advisable to take the target group with lower levels of education as a measure of orientation and use a German humorous slogan. This slogan will be understood by both target groups and, in contrast to a slogan with English elements, it will not

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[36] These results of the study on immediate recall are assumed to be equally applicable to slogan recall after one week, since the lack of English knowledge of subjects with lower levels of education will still prevail one week after slogan exposition.

leave target groups with lower levels of education feeling frustrated because they lack a certain knowledge of English. Since target groups with higher levels of education generally have higher rates of recall than target groups with lower levels of education, they equally have acceptable rates of recall for German humorous slogans.

6.4 Know your slogan

The slogans examined in the two studies all tend to be relatively homogeneous. Although it is assumed that they are the ones which are used most frequently in advertising, there are, of course, also slogan wordplays deviating from those in the studies. Rhymes, for example, seem to have a higher rate of complete recall than the wordplays which were used, which generally consist of one single ambiguous expression. Compound or sound wordplays, in contrast, seem to have a higher rate of recall in total. However, this has not been examined sufficiently so far. It must be kept in mind that particularly rhymes, but possibly also differently constructed wordplays such as sounds might be associated and connected to other values and features than the wordplays examined in this thesis. Further research is thus required for differently constructed wordplays in slogans.

Regarding the right choice of a slogan, two effects from the field of the psychology of advertising are additionally important: the 'vampire effect' and the 'wear-out effect'.

When a company decides in favour of a humorous slogan, the slogan might be perceived as funny and entertaining by the potential consumers, but the humour might overlay the rest of the slogan. The consumer might recall the humorous part of the slogan, but not the actual advertising message. This is known as 'vampire effect' (Bak 2014: 104).

Regarding the 'wear out effect', a slogan with a wordplay or joke is perceived as relatively worn out after a short time. The entertaining and humorous effect disappears and might be replaced by a negative and annoyed feeling of the consumers towards the slogan (Bak 2014:104). The danger of a 'wear out effect'

is particularly high when advertising occurs very frequently and when the slogan is thus processed too often. Preventing this effect requires a good balance between frequent and little advertising, aggravated through the fact that older target groups tend to require frequent advertising in order to remember the slogan. At the end of the day, the frequency of advertising is target group dependent: the older the target group, the higher the frequency of advertising.

The four major points discussed – 'know the effects of humour and language', 'know your company', 'know your target group' and 'know your slogan' – are universal aids in order to make qualified decisions concerning advertising in general. The studies of this thesis have, however, focussed specifically on recall rates. These study results might nevertheless be applicable, particularly concerning the use of humour and specific languages, as it brought the insight that the right slogan choice largely depends on the target group aimed for. Nevertheless, purchase decisions of customers depend on more factors that are very hard, if not impossible, to control: individual experiences, associations and positive or negative observations regarding a specific product, service or company might play a decisive role, for example. Sometimes a specific colour, smell or even the form or touch of a sheet of paper might be enough to provoke a customer's dislike. Nevertheless, there is no doubt that being able to achieve a high slogan recall rate is an essential step towards the success of a company's advertisement campaign.

7. General discussion and conclusion

This thesis provides theoretically and empirically founded results which give new insights into the recall of different target-groups when exposed to advertising slogans in German, English or German-English, with or without wordplay. For this purpose, two studies were conducted, the first of which tested the recall of subjects immediately after they have read and processed advertising slogans and the second which tested recall after one week. The testing of recall rates one week after slogan exposition has more similarities to the situation of advertising in

Germany than the study on immediate recall, as, ideally, slogans should be recalled for as long as possible. However, the testing of immediate recall rates is equally important because the way in which recall rates change over time, and the cognitive learning processes that are likely to take place, can only be demonstrated by making a comparison between the recall rates recorded in the two studies.

An extensive list of criteria was applied to the design of the study slogans in order to guarantee the best possible slogan homogeneity and comparability. The study required six differently constructed slogans for each brand name which had to meet the requirements of the criteria list. Because of the difficulty of inventing such slogans for a total of 14 different brand names, a small number of humorous slogans used slightly deviating wordplay constructions such as sounds or compounds. The data from them was admitted in both studies since they did not statistically confound the study results. Nevertheless, the recall rates of deviating slogan wordplays show interesting tendencies and thus leave room for future research. While strong collocations such as compound wordplays seem to enforce partial slogan recall, improper rhymes seem to produce higher rates for complete recall. This tendency generally continues one week after slogan exposure. Due to the limited number of deviating wordplay slogans used in the two studies, it is too early to make general statements about the recall rates for strong collocations or (improper) rhymes compared to those for slogans with 'regular' one-word wordplays. However, there seems to be a difference in recall, which could be examined further by using more deviating wordplay material and, for the measurement of recall one week after slogan exposition, more diverse target groups. In this context, it could be useful to examine other wordplay constructions that were not included in the present studies, such as different levels of wordplay (e.g. phrasal vs. morphemic wordplay).

The results of the two studies were analysed using frame theory, humour theory, relevance theory and predictive coding theory, all of which complement and support each other. Frame-shifting is a cognitive mechanism which is also present in humour theory. It influences relevance theory as well, as it leads to higher processing effort. The relationship between high relevance and high recall

can be explained with predictive coding theory, which, in turn, has connecting points with frame theory.

The study results can be subdivided into target-group-specific and slogan-specific results. Target-group-specific results show that age and education have an influence on slogan recall; recall rates generally rise with a higher level of education and decrease with age. The factor 'gender' does not make a significant difference. When it comes to slogan-specific results, the factors 'wordplay' and 'language', as well as combinations of the two, have an effect on slogan recall. Wordplay generally raises recall rates. The influence of German, English or German-English slogans on recall is target-group dependent.

Target groups with higher levels of education (university entrance level or higher) have the highest rate of immediate recall for German-English slogans with wordplay, followed by German and English humorous slogans with equal recall rates. They are used to English elements as well as cognitive challenges and thus understand English and German-English puns, although the latter have a double cognitive charge due to frame-violation and script opposition. This double charge presumably leads to deeper cognitive processing and thus higher recall.

As this target group is proficient in English, the processing of non-humorous slogans does not seem to require high cognitive effort, whether the slogan is German, English or German-English non-humorous. Immediate recall for these slogan categories is thus equal in the case of subjects with a university degree and almost equal (with slightly lower recall rates for German-English slogans requiring a frame-violation) for subjects with a university entrance qualification.

However, the same target group – more specifically 16-30 year old subjects with a university entrance level – shows the highest rate of recall for English slogans with wordplay one week after slogan exposition, followed by the rate for German-English humorous slogans and then for German humorous slogans. English elements are thus dominant in slogan recall after one week. They seem to constitute elements that have not yet been part of the subjects' predictive model for advertising slogans. Through the adjustment of predictions, these English elements undergo deeper cognitive processing than the elements of

German humorous slogans and thus have a higher rate of recall after sufficient time for memory consolidation. Similar tendencies are assumed for older subjects with a high level of education and for 16-30 year old subjects with an education higher than university entrance level.

The recall rate for non-humorous slogans after one week was highest for German slogans, followed by the rate for English slogans and then that for German-English ones. Non-humorous slogan recall after one week seems to be slightly less in cases of English slogans, which require more cognitive processing effort through the processing of a foreign language, and even less in German-English slogans, which require the processing of a frame-violation. This recall tendency is not evident in immediate recall rates, indicating that recall of slogans with foreign language elements seems to become more difficult after a longer period of time.

Target groups with lower levels of education (intermediate secondary school level or lower) have different rates of recall. Immediate slogan recall is highest for German slogans with wordplay, followed by German-English humorous slogans and then English humorous ones. Subjects with lower education receive less English education at school than subjects with higher education, resulting generally in a more limited knowledge of English. They might not understand German-English or English puns: such puns might require a very high cognitive effort, and so they might prefer German elements and recall them best.

The same reasons do not hold for the recall of slogans without wordplay. In this category, German non-humorous slogans have the highest recall rates; English ones come second and German-English ones third. English elements seem to be understood by subjects with a lower level of education as long as they are not combined with wordplay. It is the wordplay – the two different meanings of a word that need to be understood – that seems to make understanding difficult when slogans use English language elements. In the case of non-humorous slogans, English slogans require a lower processing effort than German-English ones because they do not involve frame-violation and so they have higher rates of recall.

The assumed lack of understanding of English elements in German-English slogans offers another possibility for future research. The recall of homogeneously-constructed German-English slogans by subjects with a lower level of education could be examined more closely – both for immediate recall and for recall one week after slogan exposure – to confirm that English elements cause problems in understanding slogans. If this proves to be the case, slogan recall will be limited mainly to the German parts of the slogan.

The second study on recall one week after slogan exposition focused on study subjects with a higher level of education due to the fact that no study subjects with other characteristics were available for two weeks in a row. However, it is assumed that study subjects with a lower education achieve similar recall rates one week after slogan exposure to those in the first week. Due to their limited English proficiency, they are unlikely to process English or German-English humorous slogans adequately. Thus, German humorous slogans will also be recalled best in the second week. In the non-humorous category, German slogans are again assumed to have highest recall, followed by English and then German-English ones, as in week 1. Moreover, just like subjects with higher education, subjects with lower education are expected to show decreasing rates of recall with increasing age. The empirical proof for these hypotheses is another topic to be followed up in future research.

The term 'frame-violation' was introduced by Fuhrich and Schmid in 2016 and has been taken up in this thesis to describe the cognitive processing of two languages within one slogan. It is unclear whether the language switch from German to English generally causes a shifting of frames similar to that observed in humour-processing. Although the cognitive mechanism of processing a language switch might depend to a large extent on the individual consumer, a frame-violation with a "disappointment of expectations" (Fuhrich and Schmid 2016: 139) is likely to take place. This is assumed to require greater cognitive processing effort than that required for a monolingual German slogan. In a predominantly German study environment, a monolingual English slogan might at first lead to a frame-violation too, because expectations could be directed towards German advertising slogans and English ones might come as a surprise. Expectations are assumed to then be adjusted so that they also take monolingual

English slogans into consideration. Research on frame-violation could be intensified by a follow-up study examining the relationship between the presentation of English advertising slogans in a German-speaking environment and the level of their subsequent recall rates. If the first homogeneously constructed English advertising slogans presented in a randomized order generally have a higher recall rate than ones presented later on, this would confirm the assumption that there is such a mechanism as frame-violation. Predictive coding theory would also be influenced by such a result, as the assumed necessity for the correction of prediction errors presumably leads to a higher processing depth.

The 2016 study by Fuhrich and Schmid can be regarded as a pilot study for this thesis. It examined the ability of 18 to 29 year old subjects with a high level of education to recall English and German-English humorous and non-humorous slogans. It showed that humour and language have an impact on recall rates and thus paved the way for this thesis. While the 2016 study cautiously suggested that English humorous slogans might have higher rates of immediate recall than German-English humorous ones, the present study results for the same target group show that German-English humorous slogans have the highest immediate recall rates, followed by equal recall rates for English and German slogans. This study took all limitations of the previous one into account, such as heterogeneously constructed wordplays, and eliminated them. It can therefore be assumed that the current thesis delivers results that are clearer and more exact. The previous study's finding – that language and wordplay have an impact on slogan recall – can, however, be confirmed.

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Appendix

A. Detailed list of statistical values of chapter 4

Statistical values including heterogeneous wordplays

```
Family: gaussian
Link function: identity

Formula:
rate of recall ~ humorous + mixed-language + age + education +
constr_homogeneous + education:mixed-language + education:humorou
s + humorous:mixed-language + age:humorous + s(person, bs = "re")
+ s(product, bs = "re")

Parametric coefficients:
```

	Estimate	Std. Error	t value	Pr(>|t|)	
(Intercept)	0.1670438	0.0277229	6.025	1.75e-09	***
humorous	0.0709222	0.0211760	3.349	0.000814	***
English	−0.0593430	0.0157904	−3.758	0.000172	***
German-English	−0.0661218	0.0156914	−4.214	2.53e-05	***
age	−0.0010894	0.0005049	−2.158	0.030991	*
'Realschule'	0.0126279	0.0187116	0.675	0.499776	
'Abitur'	0.0003714	0.0192268	0.019	0.984590	
'Fachhochschule'	0.0189317	0.0277378	0.683	0.494925	
'Universität'	0.0276850	0.0203366	1.361	0.173439	
constr_homogeneous	−0.0394521	0.0096585	−4.085	4.45e-05	***
English: 'Realschule'	0.0044151	0.0180375	0.245	0.806639	
German-English: 'Realschule'	−0.0036816	0.0179751	−0.205	0.837719	
English: 'Abitur'	0.0556923	0.0184712	3.015	0.002576	**
German-English: 'Abitur'	0.0498617	0.0183626	2.715	0.006632	**
English: 'Fachhochschule'	−0.0189223	0.0267623	−0.707	0.479554	
German-English: 'Fachhochschule'	0.0088435	0.0266754	0.332	0.740258	
English: 'Universität'	0.0514041	0.0198892	2.585	0.009767	**
German-English: 'Universität'	0.0665885	0.0198990	3.346	0.000822	***
humorous: 'Realschule'	0.0309023	0.0147604	2.094	0.036324	*
humorous: 'Abitur'	0.0636035	0.0152681	4.166	3.13e-05	***
humorous: 'Fachhochschule'	0.0939014	0.0219076	4.286	1.84e-05	***
humorous: 'Universität'	0.0879772	0.0163445	5.383	7.52e-08	***

```
humorous:          -0.0089735   0.0118441   -0.758   0.448689
'English'
humorous:           0.0581591   0.0117419    4.953   7.43e-07 ***
'German-English'
humorous:          -0.0013871   0.0004798   -2.891   0.003852 **
age


---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Approximate significance of smooth terms:
              edf Ref.df      F p-value
s(person)  485.76    684  2.472  <2e-16 ***
s(product)  12.52     13 25.575  <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

R-sq.(adj) =  0.234   Deviance explained = 27.6%
-REML = 186.24  Scale est. = 0.054499  n = 9660
```

Statistical values excluding heterogeneous wordplays

```
Family: gaussian
Link function: identity

Formula:
rate of recall ~ humorous + mixed-language + age + education +
education:mixed-language + education:humorous + humorous:mixed-la
nguage + age:humorous + s(person, bs = "re") + s(product, bs = "r
e")

Parametric coefficients:
```

	Estimate	Std. Error	t value	Pr(>|t|)	
(Intercept)	0.1246372	0.0256344	4.862	1.18e-06	***
humorous	0.0816584	0.0216709	3.768	0.000166	***
English	-0.0578276	0.0160370	-3.606	0.000313	***
German-English	-0.0617910	0.0156611	-3.945	8.03e-05	***
age	-0.0010520	0.0004889	-2.152	0.031436	*
'Realschule'	0.0142017	0.0184272	0.771	0.440912	
'Abitur'	0.0003269	0.0189223	0.017	0.986217	
'Fachhochschule'	0.0197370	0.0273352	0.722	0.470291	
'Universität'	0.0275713	0.0200306	1.376	0.168717	
English: 'Realschule'	-0.0008342	0.0186059	-0.045	0.964238	
German-English: 'Realschule'	-0.0044539	0.0181554	-0.245	0.806213	
English: 'Abitur'	0.0564379	0.0190930	2.956	0.003126	**
German-English:	0.0475826	0.0185097	2.571	0.010167	*

```
‘Abitur’
English:            -0.0159293   0.0277786   -0.573    0.566364
‘Fachhochschule’
German-English:      0.0026637   0.0269533    0.099    0.921279
‘Fachhochschule’
English:             0.0543756   0.0208445    2.609    0.009107 **
‘Universität’
German-English:      0.0610036   0.0199126    3.064    0.002194 **
‘Universität’
humorous:            0.0313311   0.0151528    2.068    0.038702 *
‘Realschule’
humorous:            0.0630826   0.0157204    4.013    6.05e-05 ***
‘Abitur’
humorous:            0.1028681   0.0226581    4.540    5.71e-06 ***
‘Fachhochschule’
humorous:            0.0986358   0.0170746    5.777    7.89e-09 ***
‘Universität’
humorous:           -0.0057010   0.0125763   -0.453    0.650338
‘English’
humorous:            0.0350749   0.0120951    2.900    0.003743 **
‘German-English’
humorous:           -0.0015290   0.0004915   -3.111    0.001873 **
age
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Approximate significance of smooth terms:
           edf Ref.df      F p-value
s(person) 467.51    684  2.184  <2e-16 ***
s(product) 12.51     13 27.634  <2e-16 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
R-sq.(adj) =  0.235   Deviance explained =   28%
-REML = -57.434  Scale est. = 0.051513  n = 8687
```

B. Detailed list of statistical values of chapter 5

Statistical values including heterogeneous wordplays

```
Family: gaussian
Link function: identity

Formula:
rate of recall ~ humorous + mixed-language +
humorous:mixed-language:week + week + Week:humorous +
week:mixed-language + constr_homogeneous + week:constr_homogeneou
s + s(person, bs = "re") + s(product, bs = "re")

Parametric coefficients:
```

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	0.38252	0.06783	5.640	2.06e-08 ***
humorous	0.14220	0.05201	2.734	0.00633 **
English	0.04701	0.04139	1.136	0.25629
German-English	-0.04170	0.04843	-0.861	0.38941
week 2	-0.29105	0.06067	-4.798	1.78e-06 ***
constr_homogene ous	-0.09988	0.04501	-2.219	0.02666 *
humorous:week 2	-0.07509	0.05049	-1.487	0.13716
English:week 2	-0.09206	0.04932	-1.867	0.06214
German-English: week 2	-0.05601	0.04932	-1.136	0.25629
week 2:constr_h omogeneous	0.08023	0.05116	1.568	0.11709
humorous:Englis h:week 2	0.09635	0.07025	1.372	0.17043
humorous:German -English:week 2	0.11605	0.06875	1.688	0.09165

```
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Approximate significance of smooth terms:
           edf Ref.df      F p-value
s(person) 43.30     51  5.646  <2e-16 ***
s(product) 12.14    13 17.098  <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

R-sq.(adj) =  0.382   Deviance explained = 41.1%
-REML = 240.73  Scale est. = 0.071203   n = 1456
> gam.vcomp(model_1_int)

Standard deviations and 0.95 confidence intervals:

          std.dev      lower      upper
s(person)  0.1199192 0.09537379 0.1507816
s(product) 0.1248830 0.08197834 0.1902426
scale      0.2668384 0.25705526 0.2769938

Rank: 3/3
```

Statistial values excluding heterogeneous wordplays

```
Family: gaussian
Link function: identity

Formula:
rate of recall ~ humorous + mixed-language + humorous:mixed-langu
age:week + week + week:humorous + week:mixed-language + s(person,
bs = "re") + s(product, bs = "re")

Parametric coefficients:

                   Estimate    Std. Error   t value   Pr(>|t|)

(Intercept)        0.274765    0.045683     6.015     2.30e-09 ***

humorous           0.182571    0.047741     3.824     0.000137 ***

English            0.057555    0.040957     1.405     0.160173

German-English    -0.021127    0.046806    -0.451     0.651783

week 2            -0.210821    0.032658    -6.455     1.49e-10 ***

humorous:week 2   -0.092064    0.049405    -1.863     0.062607

English:week 2    -0.092064    0.049405    -1.863     0.062607

German-English:   -0.056006    0.049405    -1.134     0.257149
week 2
humorous:Englis    0.099313    0.070351     1.412     0.158270
h:week 2
humorous:German    0.121711    0.068784     1.769     0.077034
-English:week 2

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Approximate significance of smooth terms:
            edf Ref.df      F p-value
s(person)  43.16     51  5.505  <2e-16 ***
s(product) 12.13     13 16.376  <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

R-sq.(adj) =   0.38   Deviance explained = 40.8%
-REML =  238.8  Scale est. = 0.07146   n = 1456
> gam.vcomp(model_1_int)

Standard deviations and 0.95 confidence intervals:

            std.dev       lower      upper
s(person)  0.1185415 0.09423672 0.1491147
s(product) 0.1198285 0.07889861 0.1819915
scale      0.2673204 0.25752936 0.2774837

Rank: 3/3
```

C. Detailed results of the predict-function applied in chapter 4

List of values

Explanatory notes

<u>Slogan</u>: Slogan numbers range from 1 to 6, showing the way the study slogans were constructed. Study slogans 1 to 3 use no wordplay and different language combinations, for example.

<u>Use of wordplay</u>: This category includes slogans without wordplay (0) and slogans with wordplay (1).

<u>Use of language</u>: This category includes German slogans (0), English slogans (1) and German-English slogans (2).

<u>Education</u>: This category includes the levels of education 'Hauptschule' (1), 'Realschule' (2), 'Gymnasium' (3), 'Fachhochschule' (4) and 'Universität' (5).

<u>Expected rate of recall</u>: The expected rate of recall was calculated with the predict-function in *RStudio*.

slogan	use of wordplay	use of language	age	education	expected rate of recall
1	0	0	16-30	1	0,1
2	0	1	16-30	1	0,04
3	0	2	16-30	1	0,04
4	1	0	16-30	1	0,15
5	1	1	16-30	1	0,08
6	1	2	16-30	1	0,14
1	0	0	16-30	2	0,12
2	0	1	16-30	2	0,06
3	0	2	16-30	2	0,05
4	1	0	16-30	2	0,19
5	1	1	16-30	2	0,13
6	1	2	16-30	2	0,18
1	0	0	16-30	3	0,1
2	0	1	16-30	3	0,1
3	0	2	16-30	3	0,09
4	1	0	16-30	3	0,21
5	1	1	16-30	3	0,21
6	1	2	16-30	3	0,25
1	0	0	16-30	4	0,12
2	0	1	16-30	4	0,04
3	0	2	16-30	4	0,06

4	1	0	16-30	4		0,26
5	1	1	16-30	4		0,18
6	1	2	16-30	4		0,26
1	0	0	16-30	5		0,13
2	0	1	16-30	5		0,13
3	0	2	16-30	5		0,13
4	1	0	16-30	5		0,26
5	1	1	16-30	5		0,26
6	1	2	16-30	5		0,32
1	0	0	31-45	1		0,09
2	0	1	31-45	1		0,03
3	0	2	31-45	1		0,02
4	1	0	31-45	1		0,11
5	1	1	31-45	1		0,05
6	1	2	31-45	1		0,1
1	0	0	31-45	2		0,1
2	0	1	31-45	2		0,04
3	0	2	31-45	2		0,03
4	1	0	31-45	2		0,15
5	1	1	31-45	2		0,1
6	1	2	31-45	2		0,14
1	0	0	31-45	3		0,09
2	0	1	31-45	3		0,08
3	0	2	31-45	3		0,07
4	1	0	31-45	3		0,17
5	1	1	31-45	3		0,17
6	1	2	31-45	3		0,22
1	0	0	31-45	4		0,11
2	0	1	31-45	4		0,03
3	0	2	31-45	4		0,05
4	1	0	31-45	4		0,22
5	1	1	31-45	4		0,14
6	1	2	31-45	4		0,22
1	0	0	31-45	5		0,11
2	0	1	31-45	5		0,11
3	0	2	31-45	5		0,11
4	1	0	31-45	5		0,22
5	1	1	31-45	5		0,22
6	1	2	31-45	5		0,28
1	0	0	46-60	1		0,07
2	0	1	46-60	1		0,01
3	0	2	46-60	1		0
4	1	0	46-60	1		0,07
5	1	1	46-60	1		0,01
6	1	2	46-60	1		0,06
1	0	0	46-60	2		0,08
2	0	1	46-60	2		0,03
3	0	2	46-60	2		0,01
4	1	0	46-60	2		0,12
5	1	1	46-60	2		0,06

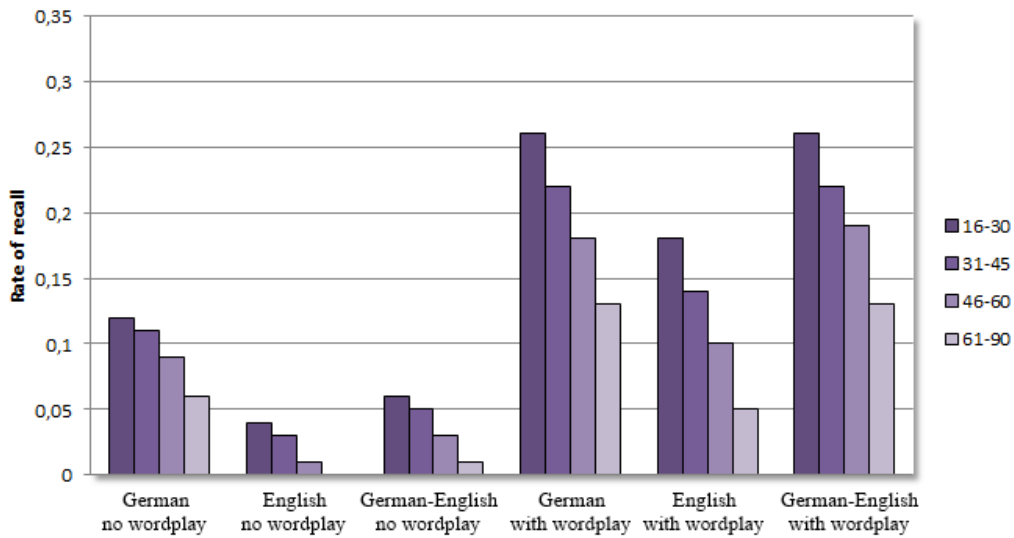|					
6	1	2	46-60	2	0,1
1	0	0	46-60	3	0,07
2	0	1	46-60	3	0,07
3	0	2	46-60	3	0,05
4	1	0	46-60	3	0,14
5	1	1	46-60	3	0,13
6	1	2	46-60	3	0,18
1	0	0	46-60	4	0,09
2	0	1	46-60	4	0,01
3	0	2	46-60	4	0,03
4	1	0	46-60	4	0,18
5	1	1	46-60	4	0,1
6	1	2	46-60	4	0,19
1	0	0	46-60	5	0,1
2	0	1	46-60	5	0,09
3	0	2	46-60	5	0,1
4	1	0	46-60	5	0,19
5	1	1	46-60	5	0,18
6	1	2	46-60	5	0,25
1	0	0	61-90	1	0,05
2	0	1	61-90	1	0
3	0	2	61-90	1	0
4	1	0	61-90	1	0,01
5	1	1	61-90	1	0
6	1	2	61-90	1	0,01
1	0	0	61-90	2	0,06
2	0	1	61-90	2	0
3	0	2	61-90	2	0
4	1	0	61-90	2	0,06
5	1	1	61-90	2	0
6	1	2	61-90	2	0,05
1	0	0	61-90	3	0,05
2	0	1	61-90	3	0,04
3	0	2	61-90	3	0,03
4	1	0	61-90	3	0,08
5	1	1	61-90	3	0,07
6	1	2	61-90	3	0,12
1	0	0	61-90	4	0,06
2	0	1	61-90	4	0
3	0	2	61-90	4	0,01
4	1	0	61-90	4	0,13
5	1	1	61-90	4	0,05
6	1	2	61-90	4	0,13
1	0	0	61-90	5	0,07
2	0	1	61-90	5	0,07
3	0	2	61-90	5	0,07
4	1	0	61-90	5	0,13
5	1	1	61-90	5	0,13
6	1	2	61-90	5	0,19

Graphical representation of the predict-function
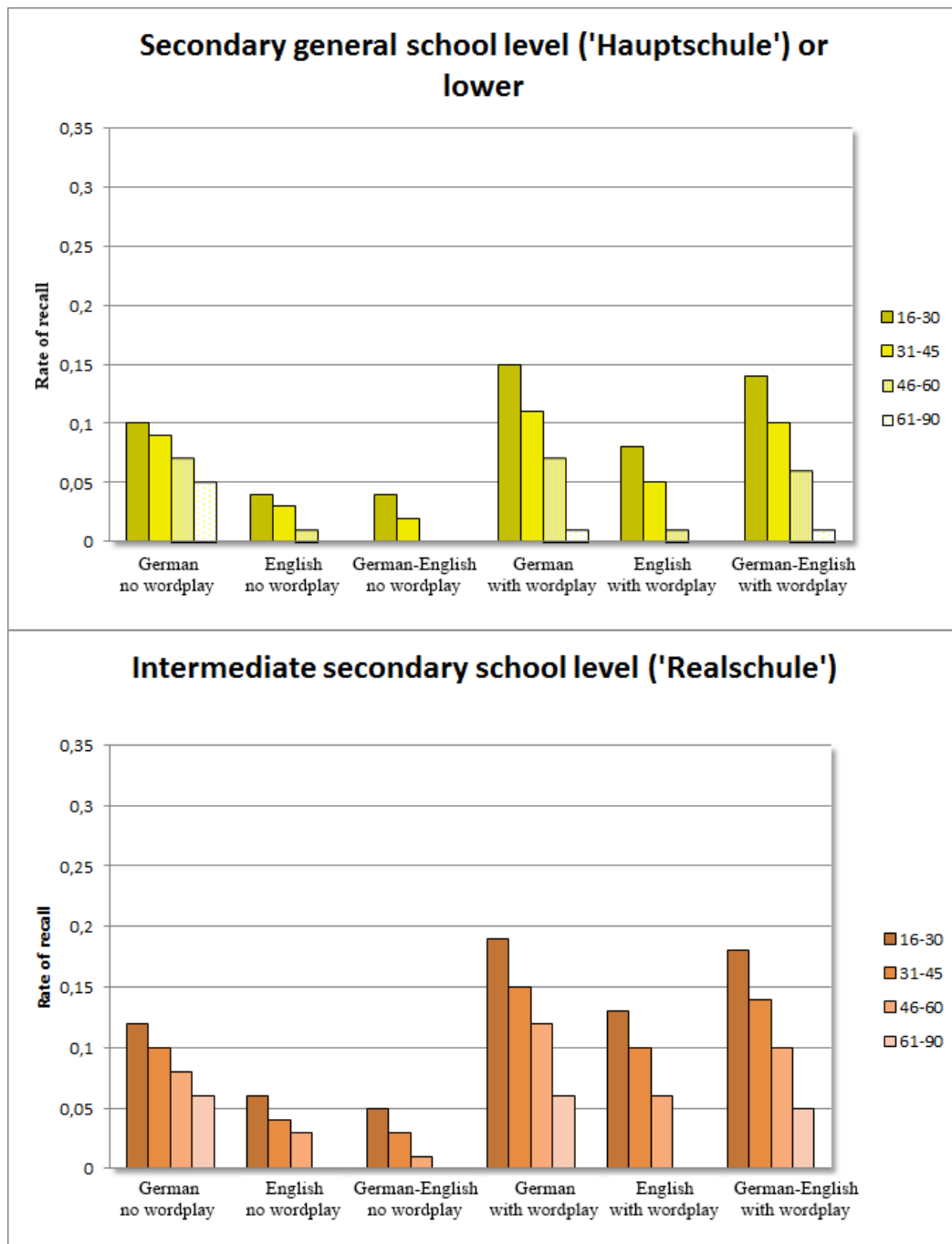
University entrance level ('Abitur')
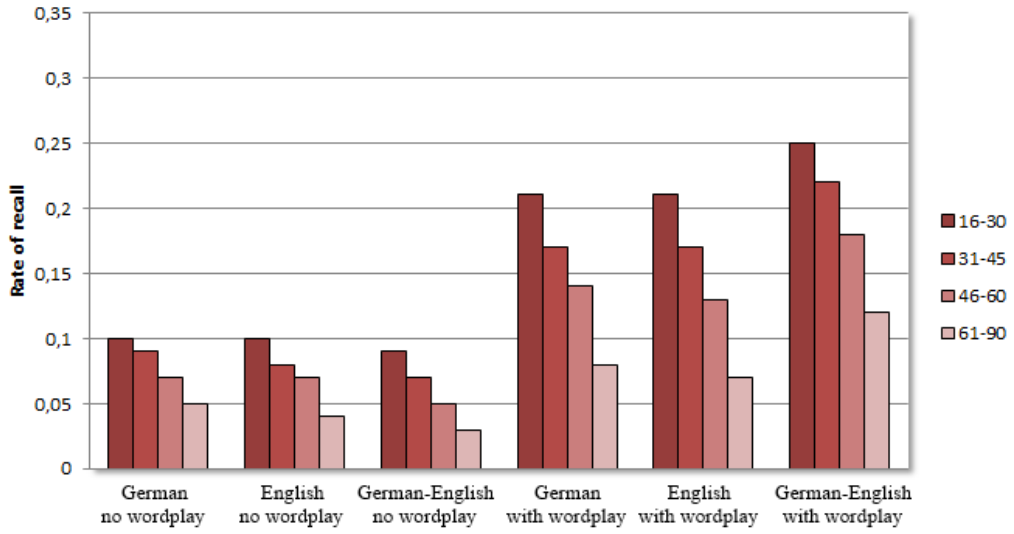
Advanced technical college certificate ('Fachhochschule')

University degree