

## Personality and Social Psychology

### Rhyme as reason in commercial and social advertising

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This study investigated the rhyme-as-reason effect on new artificially created advertising slogans. Rhymes and non-rhymes were in Experiment 1 and 2 compared in a between-subjects design and in Experiment 3 in a within-subjects design. The quality of the form and content of the slogans was always evaluated by separate groups. In Experiment 1, we found a strong preference for rhyming slogans as opposed to their non-rhyming counterparts. Rhymes were rated as more likeable, more original, easier to remember, more suitable for campaigns, more persuasive and more trustworthy. In Experiment 2, social advertising messages were evaluated favorably in both rhyming and non-rhyming versions. However, when participants directly compared rhymes and non-rhymes on the same scale (Experiment 3), the difference between commercial and social advertising disappeared and for all slogans rhymes were clearly preferred to non-rhymes in terms of both form and content. A detailed analysis revealed that the rhymes scoring high on formal aspects were also favored in the questionnaire investigating content aspects.

**Key words:** Advertising, fluency effect, persuasion, rhyme-as-reason effect.

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#### INTRODUCTION

*“A truth that cannot rhyme,” Bjartur said, “is no truth. The rhyme is a truth in itself, if properly constructed.”*  
(Laxness, 2004[1934])

Marketers and advertisers use various sophisticated strategies in order to create interest in the products they promote. They may address our needs to be perceived as attractive, healthy, energetic, fashionable, popular and successful. They can also try to attract attention through an artistic or humorous design of the advertisement. One way of making the advertisement more appealing is the use of rhyme. Rhyming advertisements were especially popular at the beginning of the 20th century<sup>1</sup> (Watkins, 1993[1959]). But also nowadays one can still find advertising slogans which rhyme. McGlone and Tofighbakhsh (1999, 2000) found that rhyming aphorisms are considered to be more accurate than non-rhyming aphorisms and called the finding the “rhyme-as-reason effect.” The purpose of our research is to investigate whether the same effect also applies to advertisements.

Alter and Oppenheimer (2009), Alter, Oppenheimer, Epley and Eyre (2007), Oppenheimer (2008), Reber, Schwarz and Winkielman (2004) and Schwarz (2004) list in their articles McGlone and Tofighbakhsh’s experiments as an example of fluency manipulation.<sup>2</sup> In line with them, in the theoretical part we put rhyming manipulation in the context of fluency research, while only briefly mentioning possible alternative explanations as to why the rhyme-as-reason effect occurs.

#### Fluency research

Research on fluency shows that people do not always decide rationally on the basis of accessible declarative information

(Alter & Oppenheimer, 2006; Schwarz, 2004). Instead, they tend to rely on mental shortcuts, naïve theories or heuristics, which simplify the problem under consideration. If one chooses between several options, the most appealing will often be perceived the one which is most fluent and thus also easiest to process. As a result, people prefer geometric shapes and drawings they have seen before because the ease and speed of processing them elicits a positive affect (Reber, Winkielman & Schwarz, 1998; Zajonc, 2001). People often fail to determine the true source of smooth (and thus also pleasant) cognitive processes, which may lead to biased judgments.

Apart from repeated exposure, fluency can also be manipulated by other means, for instance by font readability. Information provided in an easy-to-read font is typically rated as more familiar and more trustworthy than information provided in a hard-to-read font (Novemsky, Dhar, Schwarz & Simonson, 2007; Reber & Schwarz, 1999; Shah & Oppenheimer, 2007). In addition, tasks described in an easy-to-read font are perceived as easier than tasks described in a hard-to-read font (Alter *et al.*, 2007; Song & Schwarz, 2008b). Words (for instance “a moose”) written in an easy-to-read font are perceived as more typical representatives of their category (mammals) when written in an easy-to-read font than in a hard-to-read font (Oppenheimer & Frank, 2008). However, once the reason for disfluency is made salient, participants typically overcorrect for their bias and the pattern of findings reverses (Oppenheimer & Frank, 2008; Schwarz, 2004).

Text readability can be manipulated by font size, font type, colour, low toner, or blurring of the text (Alter *et al.*, 2007; Diemand-Yauman, Oppenheimer & Vaughan, 2011; Oppenheimer & Frank, 2008; Reber & Schwarz, 1999; Shah & Oppenheimer, 2007; Song & Schwarz, 2008a, 2008b). Oppenheimer and Frank

(2008) mention that in addition to the perceptual fluency described above, for instance conceptual fluency and retrieval fluency can also be distinguished. However, the distinctions between various types of fluency are not always clear-cut across various authors and articles and sometimes appear very subtle. Since all types of fluency produce similar judgemental consequences, we will not delve into terminological nuances and in our research we will refer to fluency as a single construct.

As already mentioned, fluent stimuli are typically perceived to be superior to non-fluent ones in a wide range of respects (e.g., likeability, fame, value, truthfulness) and even the author of fluent messages benefits by being perceived as more intelligent (Oppenheimer, 2006). However, in situations where the information provided is false or deeper processing of the text is desirable, hard-to-read fonts lead to better judgements and performance (Alter *et al.*, 2007; Diemand-Yauman *et al.*, 2011; Song & Schwarz, 2008a).

### *Fluency in marketing and advertising*

Advertisers and marketers typically have no interest in making people think deeply and critically about the information presented. On the contrary, they should strive to make the advertisement as fluent as possible, so that consumers accept the statements automatically and without slow and deep processing. An advertisement should thus be written in an easy-to-read font and not be blurred. An inherent part of advertising is its repetitiveness whose meaning is also supported by findings of fluency research. One can see a particular advertisement often multiple times on TV, in a cinema, or in case of printed media in various newspapers and magazines. In that way, the promoted products should over time become more likeable and the presented information more trustworthy, in line with the results of the repeated-exposure laboratory experiments. High trust in familiar statements, regardless of their actual validity, is called the illusion-of-truth effect. Even fluency which was not achieved via repetition may lead to an inference that the statement is familiar and thus also increase the probability that the message will be judged as true (Novemsky *et al.*, 2007; Reber *et al.*, 2004).

An important factor in promotion is to select a catchy name. Product naming is considered to be a key part of the branding process and companies often spend considerable resources on evaluating product names and in some cases even later adjust them.<sup>3</sup> One aspect of names is their ease of pronunciation, which Alter and Oppenheimer (2006) and Shah and Oppenheimer (2007) used in their research as a proxy for fluency. They found that companies with easy-to-pronounce names are trusted more and perform better on the stock market than companies whose names are difficult to pronounce.

Another strategy to increase the fluency of advertising is to present the product in a predictive context. Sumundi beer was evaluated better when it appeared in the storyboard of a man visiting a bar than in a storyboard of a woman shopping in a supermarket (Lee & Labroo, 2004). Whittlesea (1993) investigated the so-called conceptual fluency in a non-advertising context and found that participants rated words (e.g., a boat) as significantly more pleasant when they were predictable from the context of the whole sentence ("The stormy sea tossed the boat.") than

when they were unexpected ("He saved up his money and bought a boat.").

### *Rhyme as reason*

Fluency created by rhyming can also be perceived as an example of a sentence where the ending provides a pleasurable stimulus due to the fact that people might correctly guess the final word. Self-generation of words experimentally proved to have a positive effect on memorizing the words (Slamecka & Graf, 1978). Alternatively, it is possible that the recipients of a slogan are pleasantly surprised by the rhyming end; in the same way that people appreciate an unexpected funny ending to a joke.

Meyer, Schvaneveldt, and Ruddy (1975) in their experiments found that in a lexical-decision task, the reaction time decreases not only if the presented word is semantically associated with the previous one (e.g., nurse – doctor), but also if it rhymes with the previous word (e.g., nurse – purse). It thus seems that after presentation of a certain word, not only semantically associated words but also rhyming words get automatically activated (Rubin, 1995). Based on this finding we can hypothesize that rhyming words are indeed processed faster and more fluently because participants consciously or unconsciously expect them. According to Rubin, expected rhymes are more efficient than completely novel and original rhyming words due to the fact that they are also easier to remember.

In the context of fluency research, the effect of rhymes was so far investigated only in aphorisms. McGlone and Tofiqbakhsh (1999, 2000) compared original rhyming aphorisms (e.g., "What sobriety conceals, alcohol reveals") with their modified non-rhyming counterparts ("What sobriety conceals, alcohol unmasks"). The participants rated the rhyming aphorisms as significantly more accurate than those which did not rhyme; however, when directly asked to compare the accuracy of rhyming versus non-rhyming aphorisms, they did not acknowledge any difference. Thus, they proved to be unaware that the form affected their attitude towards the content of the statement. McGlone and Tofiqbakhsh (1999, 2000) suppose that it is due to the fluency heuristic that existing (yet little known) rhyming aphorisms were perceived in their study as more truthful than the artificially created non-rhyming counterparts. They argued that also Nietzsche (1986[1882], pp. 139–140) once noted that "we sometimes consider an idea truer simply because it has a metrical form and presents itself with a divine skip and jump."

McGlone and Tofiqbakhsh (1999, 2000) used existing rhyming aphorisms and compared them with their artificially created non-rhyming counterparts; they have never created rhyming equivalents to existing non-rhyming aphorisms.<sup>4</sup> Participants might have preferred the rhyming aphorisms because they subconsciously associated them with the condensed wisdom of the ages, since many famous and widely used aphorisms actually rhyme (e.g., "A friend in need is a friend indeed"; "Birds of a feather flock together").

Howard (1997) found that the inclusion of non-rhyming familiar phrases (e.g., "burying your head in the sand") in commercial messages makes the communication more persuasive compared to the employment of literal phrases with equivalent meaning (e.g., "pretending a problem doesn't exist"). Facilitation of

persuasion was prominent namely in case of low involvement and also under distraction, which are both common conditions when people are exposed to advertisements in real life settings.

In our research, we artificially created all our rhyming as well as non-rhyming slogans and thus participants should not favor any of them due to the “familiarity as credibility” heuristic. Moreover, as opposed to rhyming aphorisms, rhyming advertising slogans should not be associated with truth and common knowledge, but rather with artificiality. It is self-evident that if a rhyme appears in an advertisement, then a marketer wanted it so and thus searched for words which would rhyme the best and not for those which most accurately report information about the product. When asked about the trustworthiness of the information provided, people should thus estimate that rhyming slogans are less trustworthy than non-rhyming ones.

Our rhymes are created by amateurs in rhyming and thus should not be expected to be of a particularly high aesthetic quality. McGlone and Tofiqbakhsh (1999, 2000), on the other hand, presented aphorisms which have survived decades or even centuries, and thus their rhymes were probably of a decent quality. McGlone and Tofiqbakhsh themselves hypothesized that the pleasurable stimulus of the rhymes presented might have contributed to the positive evaluation of the rhymes’ accuracy. Persuasion researchers found that people’s acceptance of the message content is higher if the message is associated with a pleasurable stimulus (snack food, soft lighting, attractive provider of the message; Biggers & Pryor, 1982; Chaiken, 1979; Janis, Kaye & Kirschner, 1965). The English Romantic poet John Keats once asserted that “beauty is truth, truth is beauty” (as cited in McGlone & Tofiqbakhsh, 1999, p. 240). On the basis of this claim, McGlone and Tofiqbakhsh called the tendency to connect the aesthetic qualities of a message with its truthfulness “Keats heuristic.” Presumably our artificial rhymes should not be as pleasurable as those established ones used by McGlone and Tofiqbakhsh. However, we cannot completely rule out the possibility that participants may find our self-created rhymes as interesting and appealing as they would find established rhymes or professionally created rhymes.

### *The present research*

The purpose of our research was to investigate the role of rhyme in commercial and social advertising. Does rhyming make slogans more likeable and memorable? Are rhyming messages more persuasive than their non-rhyming equivalents?

In Experiment 1 we focus on commercial advertising slogans and in a between-Ss design, we compare rhymes and non-rhymes with the same meaning for both their formal and content aspects. In Experiment 2 we use the same approach for investigation of social advertising slogans. Experiment 3 compares rhyming and non-rhyming slogans used in previous experiments in a within-Ss design. As with Experiments 1 and 2, formal and content aspects of the slogans are investigated separately.

## EXPERIMENT 1

In the experiment we studied the perception of rhyming and non-rhyming slogans promoting particular products and brands

(e.g., diet course BetterLife, clothes shop EGO). All rhyming slogans as well as their non-rhyming counterparts were created by the second author of the current paper, who is a native Norwegian speaker. Widely used products (e.g., Coca Cola) were not included in the examples, since we expected that participants might have already well-established attitudes towards them.

### *Methods*

**Participants.** Participants in the experiment were 183<sup>5</sup> psychology students at the Norwegian University of Science and Technology in Trondheim (126 women, 25 men, 32 did not report their gender; mean age = 21.1 years). The participants were randomly allocated to four conditions by receiving different versions of the questionnaire. The experiment was run during a break between lectures.

**Materials and procedure.** All participants received a questionnaire containing nine commercial slogans written in Norwegian, which they were asked to evaluate on seven-point scales. Approximately half of the participants (93 students) received questionnaires containing rhyming slogans; the other half received non-rhyming counterparts of the slogans.<sup>6</sup> For instance, one of the slogans was promoting food supplement Superba Krill with a slogan announcing that the product gives your body what it needs (rhyming version: “Med Superba Krill får kroppen din det som skal til,” non-rhyming version: “Med Superba Krill får kroppen din det den trenger”).

Half of the participants received questionnaires that focused on the formal aspects of the statements presented, the other half received questionnaires investigating the content aspects of the messages. The reason for splitting the questionnaires was that we wanted to prevent participants from automatically marking one end of all the scales (e.g., if they considered rhymes very memorable and very likeable, they might have continued that they were also very persuasive).

The questionnaire focusing on formal aspects of the slogans contained four questions on: 1. Likeability of the slogan (1: very bad, 7: very good); 2. On the basis of its formal qualities, how suitable the slogan is for an advertising campaign<sup>7</sup> (1: not at all suitable, 7: very suitable); 3. Originality/creativity of the slogan (1: not at all original, 7: very original); 4. Memorability of the slogan (1: very difficult to remember, 7: very easy to remember).

In the questionnaire investigating content aspects of the slogans, there were four questions on: 1. Persuasiveness of the slogan (1: not at all persuasive, 7: very persuasive); 2. On the basis of its content qualities, how suitable the slogan is for an advertising campaign<sup>8</sup> (1: not at all suitable, 7: very suitable); 3. Trustworthiness of the slogan (1: not at all trustworthy, 7: very trustworthy); 4. Willingness to try the product (1: not at all willing, 7: very willing).

### *Results*

In the questionnaire focusing on formal aspects of commercial slogans, we found significant differences between rhymes and non-rhymes in all scales (see Table 1). Rhyming slogans were

Table 1. Mean ratings of commercial advertising slogans – formal aspects condition

	Rhymes (N = 54) M (SD)	Non-rhymes (N = 46) M (SD)	<i>p</i>
Likeability	3.57 (0.97)	2.88 (0.98)	0.001
Formal quality	3.79 (0.95)	3.11 (1.05)	0.001
Originality	3.31 (0.99)	2.91 (0.99)	0.047
Memorability	4.43 (0.97)	3.53 (1.01)	<0.001

perceived as more likeable than their non-rhyming counterparts;  $t(98) = 3.51$ ,  $p = 0.001$ . Not surprisingly, rhymes were also considered to be easier to remember than non-rhymes;  $t(98) = 4.57$ ,  $p < 0.001$ . Despite the fact that rhymes in advertisements are nowadays not widespread, on the basis of their formal qualities rhyming slogans were evaluated as more suitable for advertising campaigns than their non-rhyming counterparts;  $t(98) = 3.43$ ,  $p = 0.001$ . Perhaps in connection with their scarce use in the context of contemporary advertising, rhymes were also perceived as more original than non-rhymes;  $t(98) = 2.01$ ,  $p = 0.047$ .

The questionnaire investigating content aspects of slogans revealed further differences in the evaluation of rhymes and non-rhymes (see Table 2). The information provided by rhyming slogans was perceived as more trustworthy than the very same information conveyed by non-rhyming slogans;  $t(80) = 3.35$ ,  $p = 0.001$ . This is a surprising finding because according to common knowledge, the goal of creating a statement which rhymes limits the range of words which one can utilize, and thus may also affect the accuracy of the intended message. In line with their higher perceived trustworthiness, rhymes were rated as more persuasive than non-rhymes;  $t(80) = 3.07$ ,  $p = 0.003$ . Participants also evaluated rhyming slogans on the basis of their content as being more suitable for advertising campaigns than non-rhyming slogans, despite the fact that the meaning of both slogans was the same;  $t(80) = 3.07$ ,  $p = 0.002$ . There was no significant difference in participants' willingness to try products promoted by rhyming versus non-rhyming slogans, although the direction of the effect was consistent with the previous findings.

We further investigated whether the formal quality of the rhymes could have had an impact on evaluation of the rhymes in the questionnaire focused on content aspects, while acknowledging that the current research design does not allow us to draw conclusions about causality. We were interested whether the

Table 2. Mean ratings of commercial advertising slogans – content aspects condition

	Rhymes (N = 39) M (SD)	Non-rhymes (N = 43) M (SD)	<i>p</i>
Persuasiveness	3.57 (0.91)	2.96 (0.89)	0.003
Content quality	3.98 (1.01)	3.25 (1.05)	0.002
Trustworthiness	3.54 (0.82)	2.91 (0.88)	0.001
Willingness to try <sup>a</sup>	3.45 (0.91)	3.13 (0.88)	0.117

Note: <sup>a</sup>This scale was missing in a slogan promoting a product for treating tobacco dependence, because trying that product was relevant only for smokers.

Table 3. Mean ratings of content aspects of formally better vs. worse rhymes (N = 39)

	Better rhymes M (SD)	Worse rhymes M (SD)	<i>p</i>
Persuasiveness	4.00 (1.03)	3.22 (0.98)	<0.001
Content quality	4.63 (1.12)	3.46 (1.11)	<0.001
Trustworthiness	4.02 (0.93)	3.16 (0.86)	<0.001
Willingness to try	4.44 (1.11)	2.84 (1.00)	<0.001

aesthetic pleasure derived from a rhyme is related to the rhyme's persuasiveness and trustworthiness or whether rhyming slogans of different qualities are equally persuasive. For each rhyming slogan, we computed a mean score of all the scales in the questionnaire investigating formal aspects of the rhyming slogans (i.e., likeability, formal quality, originality, memorability). Subsequently we created a quality rank for the rhymes. The four rhymes which reached the highest aggregated mean were labeled as "better rhymes," whereas the five remaining rhymes with lower mean evaluation on the scales were categorized as "worse rhymes."

In the questionnaire investigating content aspects of the slogans, we computed the mean score for all better rhymes and the mean score for all worse rhymes for each of the scales. The paired sample *t*-test revealed that better rhymes were evaluated as significantly more trustworthy ( $t(38) = 7.70$ ,  $p < 0.001$ ) and more persuasive ( $t(38) = 5.68$ ,  $p < 0.001$ ) than worse rhymes (see Table 3). Participants also considered their content to be more suitable for an advertising campaign ( $t(38) = 7.79$ ,  $p < 0.001$ ) and moreover, they were also more willing to try products promoted by rhyming slogans of higher aesthetic quality ( $t(38) = 9.55$ ,  $p < 0.001$ ). These findings suggest that not only were rhymes more persuasive than non-rhymes, but that in addition the formal quality of particular rhyming slogans could further affect their persuasiveness. We can hypothesize that rhymes which were perceived to be of higher formal quality were also more fluent.

## EXPERIMENT 2

In Experiment 2 we investigated whether rhyming (which we used as a proxy for fluency) also affects evaluation of social advertising slogans. By social advertising we mean messages that promote a community's health and well-being (learn about social issues, diseases, recycling, energy conservation, public services etc.).<sup>9</sup> We hypothesized that participants could already have some opinions about these issues and thus their attitudes might not be so easily manipulated as in Experiment 1, where little-known or unknown products and brands were promoted.

### Methods

**Participants.** Participants were 204 psychology students attending courses at the Norwegian University of Science and Technology in Trondheim; mean age of the participants was 21.0 years. During a break between lectures, students randomly received one out of four versions of the questionnaire. Questionnaires were completed by 125 women and 47 men (32 did not report their gender).

**Materials and procedure.** The experiment followed the same procedure as Experiment 1. Participants randomly received questionnaires investigating either formal or content aspects of slogans. The slogans in the questionnaires were either all rhyming or all non-rhyming (with equivalent meaning). Participants were supposed to evaluate on scales the seven social advertising slogans presented. For instance one of the slogans advised taking breaks to avoid making mistakes at work (rhyming version: “Unngå flauser – ta godt med pauser,” non-rhyming version: “Unngå flauser – ta godt med avbrekk”). Other slogans promoted protection of the natural environment, polite behaviour on public transport, paying taxes etc.

### Results

Tables 4 and 5 show that the fluency effect of rhyming diminished once we presented slogans regarding topics towards which people may have some prior attitudes (in contrast with unknown products and brands used in Experiment 1). Although all differences in means between rhymes and non-rhymes were in the expected direction, most of them were not significant.

We found that rhyming social-advertising slogans were perceived as easier to remember than non-rhyming ones;  $t(105) = 3.63$ ,  $p < 0.001$ . On the basis of their formal qualities, rhymes were also considered to be more suitable for use in campaigns than non-rhymes;  $t(105) = 3.67$ ,  $p < 0.001$ .

The questionnaire that focused on the content aspects of the social advertising slogans did not show significant differences in perceived trustworthiness or persuasiveness of rhymes versus non-rhymes.<sup>10</sup> On this basis it is quite surprising that the participants were more willing to follow the advice of the rhyming slogans than the equivalent advice presented in a non-rhyming form;  $t(95) = 2.43$ ,  $p = 0.017$ . As opposed to other scales, the scale on willingness to follow the advice accompanied only two of the slogans: the slogan promoting taking breaks in order to avoid mistakes at work and the slogan promoting protection of the natural environment. In other slogans this scale was omitted because we found it awkward and possibly offensive to ask participants whether they themselves would be willing to follow the slogan's advice and behave politely on public transport or pay taxes. However, this difference cannot explain why participants were more eager to follow the advice of the two rhyming slogans than of the two equivalent non-rhyming ones. The two slogans where we asked about willingness to follow the advice did not significantly differ from the other five slogans, so the ratings on the common scales were pooled.

Table 4. Mean ratings of social advertising slogans – formal aspects condition

	Rhymes (N = 55) M (SD)	Non-rhymes (N = 52) M (SD)	<i>p</i>
Likeability	3.98 (0.97)	3.66 (0.89)	0.076
Formal quality	4.07 (0.95)	3.42 (0.89)	<0.001
Originality	3.70 (0.88)	3.42 (0.88)	0.097
Memorability	4.62 (0.93)	3.93 (1.02)	<0.001

Table 5. Mean ratings of social advertising slogans – content aspects condition

	Rhymes (N = 52) M (SD)	Non-rhymes (N = 45) M (SD)	<i>p</i>
Persuasiveness	3.71 (0.90)	3.60 (0.84)	0.536
Content quality	4.03 (0.91)	3.74 (1.01)	0.138
Trustworthiness	3.86 (0.91)	3.75 (0.91)	0.584
Willingness to follow advice <sup>a</sup>	4.14 (1.27)	3.51 (1.26)	0.017

Note: <sup>a</sup>Ratings for two slogans only.

As with Experiment 1, we again investigated whether slogans which scored higher on formal attributes (“better rhymes”) also achieved higher mean scores in the questionnaire that focused on the content aspects of the slogans. However, the differences did not reach significance level.

Overall, it seems that when it comes to areas where people have some prior opinions, the effect of fluency (rhyming) is attenuated. One can still trace the fluency effect in the evaluation of formal aspects of the social advertising messages, but the manipulation had very little impact on the perception of the slogans' content. While evaluating particular social advertising slogans, participants were probably more affected by their original attitude towards the content of the slogan than by the form of the message (rhyme versus non-rhyme, better rhyme versus worse rhyme).

We can also observe that social advertising messages achieved higher mean scores than commercial advertising slogans (Experiment 1) and that applied for both types of questionnaires (form-focused, content-focused). This finding further supports the idea that participants' prior attitudes towards the presented stimuli might have affected their ratings of the slogans.

### EXPERIMENT 3

This experiment was designed to investigate whether participants change their evaluation of the slogans once they are exposed to both the rhyming and the non-rhyming version simultaneously. Hansen, Dechêne, and Wänke (2008) found that a statement written in a dark color (which was easy to read and hence fluent) was judged as more probably true when preceded by a statement in a difficult-to-read light color than when it appeared in a sequence of statements printed in dark colors. In another study by Dechêne, Stahl, Hansen, and Wänke (2009), fluent and disfluent stimuli were evaluated differently only in a within-Ss design and the effect vanished when separate groups of participants evaluated only fluent stimuli or only disfluent stimuli. In line with these findings, we can predict that the joint presentation of rhyming slogans and their non-rhyming equivalents will accentuate the difference in evaluation in favor of rhymes.

On the other hand, Kelley and Rhodes (2002) concluded on the basis of a review that if sources of fluency are realized by participants, the fluency experience is rendered as uninformative and hence the fluency effect is often eliminated. Oppenheimer and Frank (2008) claim that when participants realize the source of (dis)fluency, they tend to even overcompensate for their bias and hence evaluate disfluent stimuli more favorably.

Experiment 3 investigates whether joint presentation of rhyming slogans and their non-rhyming equivalents will accordingly lead to more positive evaluations of disfluent stimuli than they achieved when they were presented separately. Alternatively, the joint presentation may highlight the contrast between rhyming and non-rhyming slogans and further increase already existing differences, with the result that rhymes will be even more strongly preferred above non-rhymes.

### Methods

**Participants.** The questionnaires were distributed to 83 students attending an introductory psychology course at the University of Oslo (52 women, 15 men, 16 unreported; mean age = 22.2 years). The students randomly received one out of four versions of the basic questionnaire and filled them in during a break between lectures.

**Materials and procedure.** The questionnaires contained 16 pairs of advertising slogans, which were presented jointly in their rhyming and non-rhyming versions. Nine of them were commercial advertising slogans from Experiment 1 and seven were social advertising slogans from Experiment 2. For each pair of slogans, participants were asked to compare on seven-point scales the rhyming and the non-rhyming version.

We had again two types of questionnaires – one focused on formal aspects and one on content aspects of the advertising messages. However, we introduced some changes since it was impossible to preserve all the questions from Experiments 1 and 2. It was, for instance, not meaningful to ask about participants' willingness to follow the advice of rhyming versus non-rhyming slogans, because when presented jointly, it was obvious that the advice is the very same.

The questionnaire investigating formal aspects of advertising slogans contained three scales: 1. Likeability (1: Slogan A is much better, 7: Slogan B is much better), 2. Originality/creativity (1: Slogan A is much more original, 7: Slogan B is much more original), 3. Memorability (1: Slogan A is much easier to remember, 7: Slogan B is much easier to remember).

In the questionnaire focusing on the content aspect of the slogans, participants were asked to compare the slogans in three other dimensions: 1. Persuasiveness (1: Slogan A seems much more persuasive, 2: Slogan B seems much more persuasive), 2. Trustworthiness (1: Slogan A seems much more trustworthy, 7: Slogan B seems much more trustworthy), 3. Suitability for an advertising campaign (1: Slogan A is most suitable, 7: Slogan B is most suitable).

The order of the rhyming and non-rhyming slogans was counterbalanced across both types of questionnaires and thus for half of the participants, Slogan A was always rhyming, whereas for the other half, Slogan A was always non-rhyming. There were no significant differences between the two types of orders, so the results were pooled. In the subsequent analysis, Slogan A is always the rhyming slogan.

### Results

Paired sample *t*-tests in this experiment revealed no differences between the ratings of two sets of slogans (commercial versus

social advertising) in any of the scales, so in the subsequent analyses, ratings of all advertising slogans were pooled. We hypothesize that in Experiment 2, participants gave relatively high evaluation scores to both rhymes and non-rhymes, because they had a generally positive attitude towards the message conveyed by social advertising slogans (promoting protection of the natural environment etc.). The scales presented in Experiment 3 forced the participants to prefer one of slogans; they could no longer give high ratings to rhymes as well as non-rhymes. Choosing the middle value on the scales might not have felt that they liked both of the slogans equally, but rather that in fact they did not particularly fancy either of them.

Tables 6 and 7 show that for all scales in both types of the questionnaires (focused on formal aspects versus on content aspects), the means fall consistently below the scale midpoint. Given that the data were re-coded in such a way that answer 7 always meant a strong preference for non-rhymes, we can observe that a preference-reversal did not manifest itself. On the contrary, the overall positive evaluation of rhyming slogans was rather strengthened in a within-Ss design. Using a one-sample *t*-test we investigated whether the mean ratings are significantly different from the expected mean of 4 which would occur if neither of the two poles of the scales was perceived as superior.

The questionnaire investigating formal aspects of the advertising messages revealed that rhymes were perceived as significantly more likeable ( $t(47) = -16.91$ ,  $p < 0.001$ ), easier to remember ( $t(47) = -30.00$ ,  $p < 0.001$ ) and also more original ( $t(47) = -3.19$ ,  $p = 0.003$ ) than non-rhymes.

The group which was asked about content aspects of advertising slogans found rhyming messages to be more persuasive ( $t(34) = -10.81$ ,  $p < 0.001$ ), more trustworthy ( $t(34) = -6.59$ ,  $p < 0.001$ ) and also more suitable for use in advertising campaigns ( $t(34) = -19.14$ ,  $p < 0.001$ ) than non-rhyming messages with equivalent meaning.

We further investigated whether rhymes which were evaluated as comparatively better (= obtaining lower scores) in the questionnaire focusing on formal aspects of advertising were also perceived as superior to other rhymes in the questionnaire investigating content aspects (as we previously found in Experiment 1). In the

Table 6. Mean preferences for rhymes vs. non-rhymes – formal aspects condition ( $N = 48$ )

	Mean	Standard deviation	<i>p</i>
Likeability	2.06	0.80	<0.001
Originality	3.43	1.24	0.003
Memorability	1.65	0.54	<0.001

Note: Low ratings = preference for rhymes.

Table 7. Mean preferences for rhymes vs. non-rhymes – content aspects condition ( $N = 35$ )

	Mean	Standard deviation	<i>p</i>
Persuasiveness	2.57	0.78	<0.001
Trustworthiness	2.97	0.92	<0.001
Campaign suitability	1.69	0.71	<0.001

Note: Low ratings = preference for rhymes.

Table 8. Mean ratings of content aspects of formally better vs. worse rhymes ( $N = 35$ )

	Better rhymes M (SD)	Worse rhymes M (SD)	$p$
Persuasiveness	2.28 (0.81)	2.86 (0.91)	<0.001
Trustworthiness	2.61 (0.93)	3.32 (1.08)	<0.001
Campaign suitability	1.44 (0.61)	1.94 (0.91)	<0.001

data focusing on formal aspects of advertising, we computed an aggregated mean of all scales per rhyme and subsequently ranked the rhymes according to their perceived formal qualities. On the basis of the ranking, we divided the rhyming slogans into eight "better rhymes" and eight "worse rhymes." Table 8 shows that better rhymes were perceived as more persuasive,  $t(34) = -4.83$ ,  $p < 0.001$ , more trustworthy,  $t(34) = -5.09$ ,  $p < 0.001$ , and more suitable for advertising campaigns,  $t(34) = -4.92$ ,  $p < 0.001$ , than worse rhymes. This finding further supports the notion that the aesthetic quality of a rhyming message affects perception of its content, and likeable rhymes are thus also seen as more persuasive and trustworthy than "worse" rhymes. However, we acknowledge that the causality might have also been reverse and statements which participants considered to be particularly persuasive and trustworthy due to their content might have consequently been evaluated also as more likeable, original, and easier to remember.

## GENERAL DISCUSSION

The present research shows that rhyming has a positive effect not only on the evaluation of aphorisms, but also on the evaluation of advertising slogans. One could expect that rhyming in aphorisms would be associated with the condensed wisdom of the ages. Rhyming aphorisms such as "a friend in need is a friend indeed" are popular and survived for centuries, and one could accordingly link rhymes in aphorisms with their accuracy. On the other hand, there is no particular reason to expect that advertising slogans which rhyme should be more trustworthy than those which do not rhyme. Rather on the contrary, rhymes in advertising should be interpreted as an artificial attempt to make the slogan likeable, even at the price of sacrificing the accuracy of the transmitted information. In addition, one runs the risk of diverting attention away from the content of the message towards a focus on its formal qualities. Our studies thus put the fluency effect (rhyme-as-reason effect) to a more difficult test than the previous research by McGlone and Tofigbakhsh did.

While McGlone and Tofigbakhsh (1999, 2000) used existing yet little-known aphorisms in their research, we created the rhyming slogans ourselves. In that way, we excluded the possibility that some subjects would find the rhymes familiar and due to the repeated exposure effect and the illusion-of-truth effect would evaluate the familiar statements more favorably.

Another advantage of researchers creating the rhymes is that the aesthetic qualities of rhymes are thereby reduced and thus it should be easier to study the effect of rhyme per se, distinct from the effect of aesthetic pleasure normally derived from good rhymes. However, findings from Experiments 1 and 3 suggest that

participants in fact still reflected on the aesthetic qualities of the messages and thus rhymes which were evaluated as the most likeable by one experimental group also turned out to be perceived as the most persuasive and the most trustworthy by another experimental group. If only one experimental group had been evaluating both likability and trustworthiness, the match in evaluation might have arisen as a result of participants' tendency to give similar scores on all scales related to a particular rhyme. The fact that two independent experimental groups selected the same rhymes to be the most likeable as well as the most persuasive makes the finding stronger. However, it remains a task for future studies to determine whether the match in evaluation was indeed guided by participants' general liking for the *form* of a particular rhyme and not by a positive attitude towards its *content*.

Most fluency studies used stimuli to which participants had no prior attitude or to which they felt indifferent. Participants thus rated, for instance, geometric shapes and fictional companies. In Experiment 1 we used this mainstream approach and asked participants to evaluate little-known or unknown products and brands. Under these conditions, we found significant differences in virtually all scales investigating formal and content aspects of the advertising slogans. The only scale where we did not find any significant difference was in participants' willingness to try the promoted product, but even for that scale the difference between the experimental groups was in the expected direction. One could hypothesize that participants might have considered the companies using rhyming slogans to be larger and better because they appeared to have greater access to marketing resources, which allowed them to develop better slogans. However, our slogans were self-created by researchers without prior experience with rhyming, and moreover, rhyming is nowadays not mainstream in advertising, which renders the above mentioned explanation improbable. Alter's and Oppenheimer's (2006) study on pronounceability of ticker codes already proved that the fluency effect is not explainable by participants' inferences about company attributes.

Experiment 2 employed social advertising slogans and thus was in some way seeking for boundaries of conditions where the fluency effect significantly operates. Already before our questionnaire was presented, most participants probably had quite clear opinions regarding whether or not one should pay taxes, protect the environment, etc. Participants' generally positive attitudes towards social advertising slogans were reflected in a more favorable evaluation in all scales than was achieved for the commercial slogans in Experiment 1. The higher means in Experiment 2 concerned both rhymes and non-rhymes and thus signaled participants' positive attitude towards social advertising messages, regardless of their form. However, fluency effect did not recede altogether, and namely in the questionnaire focusing on the formal aspects of the slogans, there were still significant differences in favor of rhymes (namely their memorability and formal suitability for an advertising campaign).

In Experiment 3, there was no advantage for social advertising messages. Participants had to compare rhymes and non-rhymes on the same scale, and under these conditions, rhyming slogans were clearly favored. The strong preference for rhymes as opposed to non-rhymes applied also to commercial advertising messages, which provides further validation of the findings from Experiment 1.

Overall, we put the fluency effect under more difficult testing than the pioneers of rhyme-as-reason experiments McGlone and Tofghbakhsh did. For further research we consider it worthwhile to investigate how far the effect of a rhyme is mediated by the pleasure derived from the rhyme. The effect of professionally written good rhyming slogans could be compared with the effect of poor rhymes created by laymen in rhyming. Aesthetic quality is supposed to be associated with fluency, but on the other hand poetry can also be aesthetic without being fluent. In order to disentangle the effect of aesthetic quality and fluency, it would be interesting to explore the perceived persuasiveness of slogans which are aesthetic yet disfluent.

For cultural validation of the rhyme-as-reason effect, other languages than Norwegian and English could be employed. A question remains whether the rhyming effect would be equally pronounced even if rhyming were very common in contemporary advertising slogans. Experiment 3 suggests that rhymes are particularly effective when contrasted with non-rhymes, which also reflects the current situation.

Fluency research in general might seek for the boundary conditions where different types of fluency manipulations (font type, font color, pronounceability, etc.) still operate. An apparent application of fluency is in advertising, marketing and political campaigns. The mere choice of a name for a particular product can have an impact on its future success (Alter & Oppenheimer, 2006). However, people's attitudes towards the topic are in natural conditions often affected by many extraneous factors, which may diminish the fluency effect. A very good example of fluency research in natural conditions was the study on the impact of the pronounceability of a company's name on stock performance, which found a longer time span to be a limiting factor for the effect (Alter & Oppenheimer, 2006). Along the same lines, it would be interesting to investigate whether rhyming advertisements indeed do increase sales of products more than non-rhyming advertisements do. A realization of more studies with real-world data seems to be worthwhile and needed.

## CONCLUSION

Our studies show that the rhyme-as-reason effect occurs not only in evaluation of existing aphorisms, but applies also to perception and evaluation of advertising slogans that were artificially created for the purpose of the present research. The rhyming statements were perceived not only as more likeable, more original and easier to remember than their non-rhyming counterparts, but also as more trustworthy and more persuasive. The formal quality of particular rhymes proved to be related to their content quality and "better rhymes" were evaluated as more trustworthy and more persuasive than "worse rhymes." Social advertising slogans were evaluated positively in both the rhyming and the non-rhyming version. However, once the participants were asked to compare the rhymes and non-rhymes on the same scale, the rhyming version was clearly preferred, also in the case of social advertising.

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## NOTES

<sup>1</sup> Watkins in his book focused only on American advertisements.

<sup>2</sup> Alter and Oppenheimer (2009) categorize rhyming as an instance of linguistic fluency (subtype phonological fluency).

<sup>3</sup> For instance, Nike was originally called Blue Ribbon Sports, Pepsi Cola was first introduced as Brad's Drink, and eBay started as AuctionWeb (Brighternaming, n.d.).

<sup>4</sup> Instead, the control group was presented with existing little-known non-rhyming aphorisms vs. their modified non-rhyming equivalents.

<sup>5</sup> One participant was excluded from the analysis because he evaluated only 2 out of 9 slogans.

<sup>6</sup> When creating rhyming and non-rhyming version of the slogans, we only focused on equivalence of meaning and approximate length of the two versions. We did not focus on equating the two versions of the slogans when it came to rhythm, meter, assonance, alliteration, toneme, number of syllables, etc.

<sup>7</sup> For the sake of brevity, this item is labeled as "formal quality" in the tables.

<sup>8</sup> For the sake of brevity, this item is labeled as "content quality" in the tables.

<sup>9</sup> This meaning should be distinguished from another meaning of social advertising, which is promotion via social networks (e.g., on Facebook) (The Free Dictionary's Encyclopedia, n.d.).

<sup>10</sup> However, in social advertising it is more difficult to doubt the trustworthiness of the messages than in commercial advertising, which may explain the smaller differences between the rhyming and non-rhyming versions.

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