

Humorous TV ads and the 3WD: Evidence for generalizability of humour appreciation across media?

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Abstract

Individuals differ in their appreciation of jokes and cartoons with respect to the structure of the humorous material (e.g., whether the jokes and cartoons can be categorised in terms of incongruity-resolution or in terms of nonsense), as well as content (e.g., whether they contain sexual themes or not). While the 3WD (3 jokes dimensions) test allows for the measurement of such differences in a paper-pencil test of verbal jokes and visual cartoons, humour transported by other media, such as TV advertisements, has not been included so far. The current study aimed at assessing the appreciation of jokes and cartoons alongside the appreciation of humorous TV ads that were pre-categorized according to the structure and content factors of the 3WD. Moreover, relationships to personality and willingness to buy were also assessed. A sample of 134 adult participants completed the study. A joint factor analysis of the 3WD scores and humour appreciation in TV ads shows a five-factor structure, with three factors denominating the appreciation of incongruity-resolution humour, nonsense humour and sexual humour, a fourth factor denominating the liking of incongruity resolution humour with sexual themes (in both ads and jokes) and an advertisement specific factor. Thus, the 3WD dimensions can also be verified in humorous ads. Psychoticism and sensation seeking correlated negatively with the perceived funniness of incongruity resolution humour, replicating findings for the 3WD and additionally showing that the relationships are similar with respect to humour appreciation in TV advertisements. Moreover, the appreciation of humour predicted the willingness of the individual to buy the product or use the service. To conclude, the structure of humour appreciation is generalizable across media. Yet, there is also some advertisement specific variance and future studies may address the question of whether the 3WD covers all aspects of humour appreciation across media types. Moreover, knowing the target group of a product (and personality features of this group) may help to tailor the humour of the advertisement to match the “humour taste” of potential customers.

Keywords: advertisement, funniness, humour appreciation, incongruity, willingness to buy, jokes, nonsense, sensation seeking.

1. Introduction

Theories of humour differ with respect to the number and nature of postulated key ingredients necessary to generate a funny impression. Various proposals exist suggesting, for example, only one factor (e.g., incongruity, ambivalence, repressed aggression) or as many as six factors (e.g., the six knowledge resources in the general theory of verbal humour; GTVH, see Attardo & Raskin 1991). Regarding jokes and cartoons it has been stated often that both content and structure (or schematic and thematic factors, jokes work and tendency) contribute to the funniness of a joke. Furthermore, studies of individual differences show that both—content and structure—create variance that is explained by different factors. For example, individual differences in salience explain that liking of content and cognitive styles predict structural features. Such an approach was used to integrate appreciation of humour into personality research (Eysenck 1942; Cattell & Tollefson 1966; Ruch 1992) traditionally enriching the understanding of both humour and personality. In fact, a lot is known about the characteristics of an ideal audience of a joke (e.g., Martin 2007; Ruch 2008).

Transcending the domain of printed jokes and cartoons, additional factors become salient. For example, skills in delivering jokes (e.g., related to timing, use of intonation, nonverbal behaviour) by the sender and factors related to the audience's social and interpersonal (e.g., social facilitation, presence of others, relation to joke teller; see Chapman 1983; Chapman & Chapman 1974; Devereux & Ginsburg 2001; Hofmann *et al.* 2015; Platos *et al.* 2005) and the situation influence humour appreciation. Moreover, various media serve as vehicles for humour; for example, a recorded joke telling could come from a video (rather than being live), or humour could be conveyed in a film or short clip (therefore including verbal and visual aspects).

Humorous advertisements (printed, audio, video) represent a form of humour with a function, namely to (potentially) draw attention to a product, increase the comprehension of an ad, increase persuasion, source credibility, and liking of the source through being funny to the intended target group (e.g., Gulas & Weinberger 2006; Weinberger & Gulas 1992). Meta analytic work shows that humour leads to more positive attitudes towards the ad, attention, and positive affect (see Eisend 2009). While jokes can be seen to typically emerge from laypeople, and are often spontaneous after certain events in interactions, TV ads are created by professionals. Ads are pretested and optimized before broadcasting, and they serve a commercial purpose. Jokes are transmitted mostly uncontrolled in a society (limitations guided by factors such as social intelligence and tact), the transmission of commercial ads at least initially is pre-researched and controlled for optimal effect.

While the same joke transported by different media (printed, orated on tape, presented on video, orated live by an acquaintance or stranger) will still have the same content and structure, the contextual factors will have an impact too and thus further contribute to individual differences in appreciation. This raises the question about the generalizability of findings on humour appreciation across presentation types. More specifically, if a personality trait predicts funniness of nonsense humour that is printed in a booklet, will the form and size of this correlation be unchanged when the media and settings are changed?

One position, perhaps endorsed by personality research might be that the core ingredients will be important (as, for example, salience of the topic is unaffected and so is level of cognitive complexity) and the personality correlates will stay unchanged. The other position is that situational, contextual effects and media effect create variance in itself and hence

lower or even alter the size and nature of the correlations. While studies on the influence of individual differences variables on humour appreciation in ads exist (i.e., gender, power motivation, uncertainty avoidance and individualism-collectivism, etc., see Lee & Lim 2008; Newton, Wong, & Newton 2016; Schwarz *et al.* 2015), these studies usually investigate very specific humour types (i.e., disparagement humour vs. no humour; see Newton *et al.* 2016 or “comic wit” vs. “sentimental comedy” and satire, see Schwarz *et al.* 2015), no systematic research has been carried out to investigate the generalizability of humour appreciation in structure and content across presentation types and the relations to personality. Hence, the degree of convergence across presentation types, personality correlates and the size of these effects can only be guessed.

However, there is also a pragmatic side to this question, namely, can the knowledge about predictors of humour appreciation be transferred from one domain to others? More concretely, can knowledge from the relatively well-researched area of personality correlates of appreciation of jokes and cartoons extend to the liking of humorous TV ads? Thus, there are two basic questions involved: First, can comparable dimensions be extracted from both jokes/cartoons and clips of humorous advertisement, and second, are these dimensions predicted in a similar manner by personality traits?

1.1. A two-mode model of humour appreciation

Research based on the 3WD (“3 *Witz-Dimensionen*” [joke dimensions]) test of humour appreciation (Ruch 1983, 1992) is based on the premise that a comprehensive assessment of humour considers not only a classification of humour stimuli but also an investigation of the responses to humour (Ruch 1992, 2007). The identification of dimensions of humour stimuli was achieved by a set of factor analytic studies of differing but overlapping sets of jokes and cartoons. In order to get robust results, samples differing with regard to sex, age, occupation, health status, nationality (Austrian, German, English, French, Hebrew, Russian, Turkish, etc.) were used (for an overview see Ruch 1992). Similarly, the dimensions of appreciation were obtained by correlational and factor analytic studies of several rating scales covering different aspects of the responses to humour.

Research regarding the first mode (i.e., classification) confirmed that both content and structure have to be distinguished as two different sources of pleasure in humour. While intuitive and rational taxonomies typically distinguish only between content categories, factor analytic studies show that structural properties of jokes and cartoons are at least as important as their content, with two factors consistently appearing: namely, incongruity-resolution (INC-RES) and nonsense (NON) humour. Jokes and cartoons of the INC-RES humour category are characterized by punch lines in which the incongruity presented in the punch line can be more or less resolved. In this type of humour, the recipient has the sense of having “gotten the point” after having first discovered an incongruity which is then fully resolvable upon consideration of information available elsewhere in the joke or cartoon. The two-stage structure in the process of perceiving and understanding humour described by Suls (1972) was initially considered to be a model that fitted well with these jokes and cartoons, and hence incongruity-resolution humour was considered to be an appropriate label for that factor. A later analysis of this humour through the lenses of the GTVH (Hempelmann & Ruch 2005) characterized this factor as medium in degree of incongruity and degree of residual incongruity, very simple to complex in terms of degree of resolution, and containing diverse script oppositions and logical mechanisms. The narrative strategies used involve text and cartoons with one panel, and frequently targets are involved.

Nonsense humour (NON) also has a surprising or incongruous punch line, however, “... the punch line may 1) provide no resolution at all, 2) provide a partial resolution (leaving an

essential part of the incongruity unresolved), or 3) actually create new absurdities or incongruities” (McGhee, Ruch & Hehl 1990: 124). In nonsense humour the resolution information gives the appearance of making sense out of incongruities without actually doing so. Here, the recipient's ability to make sense or to solve problems is exploited. After detecting the incongruity, the recipient is misled into resolving it, to then discover that what made sense for a moment is not really making sense. Rothbart and Pien's (1977) impossible incongruities that allow only for partial resolutions may characterize the nonsense factor well (while their possible incongruities allowing for complete resolutions are more prevalent in INC-RES humour). In terms of GTVH-parameters, NON was characterized by high degree of incongruity, high degree of residual incongruity and the degree of resolution ranges from very simple to very complex (Hempelmann & Ruch 2005). NON less frequently contains cartoons with an actual/not actual script opposition while possible/impossible script oppositions occur more often. Targets are rarely involved and diverse logical mechanisms are used. Cartoons with a higher number of panels are typical (Hempelmann & Ruch 2005). A third factor consistently emerged, namely sexual humour (which was also discovered to either have a second loading on either the INC-RES or NON factor depending whether sexual content is embedded in the incongruity-resolution or the nonsense structure. While the original pool of jokes and cartoons contained different content areas (including aggression), only sexual humour formed a robust factor overpowering the structure variance.

Research regarding the second mode (i.e., appreciation) confirmed that minimally positive responses (amusement, finding jokes funny, liking them) and negative responses (e.g., feeling offended, bored, embarrassed) need to be separated. Hence the resulting instrument (3WD) measures funniness (representing positive affect) and aversiveness (representing the negative responses) of incongruity-resolution humour (INC-RES), nonsense humour (NON), and sexual humour (SEX). In the final version of the 3WD, altogether 35 jokes and cartoons of which the first five are for warming up, are rated on “funniness” and “aversiveness” using two seven-point scales. The funniness rating ranges from not at all funny = 0 to very funny = 6 and the aversiveness scale ranges between not at all aversive = 0 to very aversive = -6. The jokes and cartoons are presented in a test booklet with two or three items on a page. The instructions are typed or written on a separate answer sheet which also contains the two sets of rating scales. Six scores can be derived: three scores for funniness of incongruity-resolution, nonsense and sexual humour (i.e., INC-RESf, NONf, and SEXf) and three for their aversiveness (i.e., INC-RESa, NONa, and SEXa). These six scores describe an individual's humour appreciation at a general level. Sometimes the three subcategories of “pure” sexual humour (PURE SEX), incongruity-resolution based sexual humour (INC-RES SEX) and nonsense based sexual humour (NON SEX) are used in addition to the general sexual humour category. Further indices have been derived and were validated in several studies (Forabosco & Ruch 1994; Ruch & Hehl 1988; Ruch *et al.* 1990). Moreover, Carretero-Dios and Ruch (2010) delivered empirical support for the measurement invariance of the 3WD across cultures.

1.2. Humour appreciation and personality

Many studies have investigated the personality correlates of humour appreciation, as assessed with the 3WD. Psychoticism in Eysenck's view relates negatively to the funniness of incongruity resolution humour (e.g., Köhler & Ruch 1996). Extraversion predicts the liking of both structure factors, as well as the funniness of sexual humour (cf. Ruch 1992). Neuroticism, as a disposition of negative affect, predicts aversiveness towards both structure and content factors, as well as lower liking of the dimensions in general (Galloway & Chirico 2008). Yet, findings on these personality correlates have not always been consistent across

studies (cf. Ruch & Hehl 1985). The trait of sensation seeking (SS) has been defined as “the need for varied, novel and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experience” (Zuckerman 1979: 10). Of the four components of sensation seeking, Experience seeking (ES) is of special interest. ES represents the seeking of experience through the mind and senses, travel, art, music and a non-conforming lifestyle. ES presents components on the novelty and complexity dimensions of stimuli (Zuckerman 1994). Hence, it might be the best predictor of appreciation of NON. The Disinhibition (DIS) component of sensation seeking is related to the intensity dimension of stimulation, and hence it might be expected to be sensitive to differences in level of appreciation of NON. It is assumed, that high disinhibitions tolerate stimulation by highly nonsensical stimuli as they tolerate intensive stimulation by other objects (Little & Zuckerman 1986). Boredom Susceptibility (BS) indicates an intolerance for repetitive experience of any kind, including routine work and boring people. High scorers have a high aversion to boredom produced by the absence of stimulation and restlessness as a reaction to boredom. As nonsense has a higher arousal potential than incongruity-resolutions (where rules do repeat) we assume it will be a positive predictor of the funniness of nonsense, just as ES is thrill and adventure seeking (TAS) and represents the desire to engage in sports or other physically risky activities that provide unusual sensations of speed or defiance of gravity, such as scuba diving, parachuting, or skiing. Existing results on the relationship of the sensation seeking components and the 3WD dimensions show that across samples, ES and NS were predictive of low appreciation of INC-RES and more funniness of NON. DIS was positively correlated with funniness of SEX stimuli and negatively with aversiveness towards this content category (see Carretero-Dios & Ruch 2010; Ruch 1988; Ruch & Malcherek 2009).

In a more recent approach, Samson *et al.* (2009) investigated neural processes in relation to humour appreciation and sensation seeking in a functional magnetic resonance imaging study. The results showed that the anterior medial prefrontal cortex, bilateral superior frontal gyri and temporo-parietal junctions led to more activation during processing of INC-RES than of NON stimuli. The authors consequently argued that the processing of INC-RES requires more integration of information from different sensory channels and coherence building, as well as more mental manipulation and organization of information. Higher ES scores correlated with increased activation in prefrontal, posterior temporal regions and the hippocampus, possibly due to a more intense engagement with the humorous stimuli as experience seekers tend to search novel mental stimulation. ES was also positively correlated with reactivity towards processing NON in contrast to INC-RES stimuli, in line with former findings. Thus, studies are needed to investigate whether those findings are specific to the 3 WD and its presentation mode or whether those findings generalize across media types if humour is presented in other forms (i.e., humorous TV advertisements).

1.3. Ideas from marketing and consumer behaviour research

Within Marketing, Consumer Behaviour Research, etc., authors have worked on the classification of humorous materials (with some authors basing their classifications on humour theories and others being largely uninformed about humour theory/humour research) with varying methods. For example, Kelly and Solomon (1975) distinguished seven humour categories: puns, understatement, jokes (“speaking or acting without seriousness”, p. 32), something ludicrous, satire, irony, and intent (“perceived intent of advertiser to be humorous”, p. 32) as a basis to compare humorous versus non-humorous ads. According to Speck (1991), humorous advertisements consist of two structure factors (incongruity-resolution and arousal-safety) and one content factor (disparagement). Extending the

assumptions by Speck, Alden *et al.* (2000) proposed a specific incongruity-resolution model, in which the effect of the degree of incongruity on perceived surprise is moderated by schema familiarity. The effect of surprise on humour is then further moderated by playfulness as a state, warmth generated by the ad, and ease of resolution. The degree of perceived humour ultimately influences the attitude towards the ad.

Others have aimed at proposing full “typologies” of humour in advertisements. For example, Buijzen and Valkenburg (2004) started with Bergers’ 1993 techniques and ended with seven factors derived by principal component analyses: slapstick, clownish humour, surprise, misunderstanding, irony, satire, and parody. Weinberger, Gulas, and Weinberger (2015) analysed the humour in outdoor advertisements across a decade and identified as categories word play, “warm, sentimental” humour, nonsense, sexual, aggression, elements of vulgarity, elements of stereotyping, elements of comic/cartoon characters, elements of children/animals as “humour styles” employed by advertisements and thus mixing elements of content and structure. To summarize, there is no agreement on the classification of humour in this area and we hypothesize that the structure found in jokes/cartoons may be transferrable to other media, and in the specific case, advertisement clips.

1.4. Aims of the current study

The current study aimed at assessing the appreciation of jokes and cartoons alongside the appreciation of humorous TV ads that were pre-categorized according to the structure and content factors of the 3WD. Relationships to personality and advertisement outcomes (i.e., willingness to buy) were assessed. Our first aim was to investigate whether the humorous stimuli of the 3WD would share the same underlying structure (two structure, one content component) with TV ads that were pre-tested for their humorous content. Our second aim was to investigate the correlations of the 3WD factors with the TV ad factors to investigate whether the patterns of relationships could be replicated in both types of stimuli.¹ Our third aim was to investigate the personality correlates (extraversion, neuroticism, psychoticism, sensation seeking) of the humour appreciation factors to test the generalizability of the results on humour appreciation across media types. Lastly, our fourth aim was to investigate the relationship between humour appreciation and TV ad outcomes (i.e., willingness to buy).

2. Methods

2.1. Participants

Pilot Rating Study. In the pilot study, 12 individuals (six males, six females; age ranging from 21 to 42, $M = 27.17$; $SD = 6.49$) participated.

Main Study. A total of 134 adult German-speaking participants took part in the main study, with 51 (38.06 percent) males and 83 (61.94 percent) females. Ages ranged between 18 and 71 years, with an average of $M = 32.25$ ($SD = 14.76$). The sample predominantly consisted of students (66.92 percent), employees (24.81 percent), and retired individuals (8.27 percent).

2.2. Instruments

The 3WD humour test (Ruch 1983). The 3WD humour test consists of 35 jokes and cartoons, which are rated on two unipolar seven-point scales for “funniness” and “aversiveness”. Six scores can be derived: three for funniness of incongruity-resolution, nonsense and humour with sexual themes (i.e., INC-RESf, NONf, and SEXf) and three for their aversiveness (i.e.,

INC-RESa, NONa, and SEXa). The alpha coefficients were .89, .80, .89, .88, .88, and .92, respectively (Ruch, 1983). In the current study, the Cronbach Alpha ranged between $\alpha = .78$ to $\alpha = .91$.

Eysenck Personality Questionnaire—Revised (EPQ-RK; Ruch 1999a). The German short form of the EPQ was utilized (original by Eysenck, Eysenck, & Barrett 1985), entailing 50 statements (binary answering format: yes/no) to assess extraversion (E), psychoticism (P), and neuroticism (N), as well as a lie scale (L). The internal consistencies (Cronbach Alpha) are satisfactory (Ruch 1999a), ranging from .72 to .85 (P: $.72 < \alpha < .76$, E: $.83 < \alpha < .85$, N: $.79 < \alpha < .81$ und L: $.72 < \alpha < .76$). In the current study, the Cronbach Alpha ranged from $\alpha = .56$ (P) to $\alpha = .86$ (E), and is thus comparable to the construction sample.

Sensation Seeking Scale-V (Beauducel & Brocke 2003; Zuckerman 1994). The German version of the Sensation Seeking Scale V assesses Thrill and Adventure Seeking (TAS), Experience Seeking (ES), Disinhibition (DIS) and Boredom Susceptibility (BS) with 40 items. A total score, as well as scores for the four facets can be computed. The internal consistencies are ranging between .46 und .80 (TAS: $\alpha = .80$, ES: $\alpha = .61$, DIS: $\alpha = .69$, BS: $\alpha = .46$ und TOTSS: $\alpha = .82$; Beauducel, Strobel, & Brocke, 2003). In the current study, the Cronbach Alpha ranged between $\alpha = .39$ (BS) and $\alpha = .78$ (TAS) for the subscales and the total scores yielded a good reliability with $\alpha = .79$.

Humorous TV ads. 33 pre-tested TV advertisements (cf. “Material Generation” in the Procedure) of all major German TV channels represent INC-RES, NON, and SEX humour. The 33 clips are presented on a screen and rated with the Humorous Clips Rating Form.

Humorous Clips Rating Form. The joke rating form accompanied the viewing of the 33 TV ads. Each TV ad was rated for its funniness, aversiveness and originality on a seven-point scale (0 = “not at all” to 6 = “very strongly”). Moreover, after each ad, the participant was asked whether he or she would be willing to buy the product or use the service on a six-point scale (0 = “not at all”, 5 = “very likely”) and asked whether they had seen this TV advertisement before (yes/no). In the current study, the internal consistency (Cronbach Alpha) for the funniness and aversiveness ratings in the three domains (INC-RES, NON, SEX) ranged between $\alpha = .52$ (NONf for two items) and $\alpha = .88$ (INC-RESa).

2.3. Procedures

2.3.1. Material generation

Clip Recordings. Over the course of two weeks, the TV advertisements of German, Swiss, and Austrian television channels were recorded (one day for each channel, including SF DRS 1, ARD, VOX, ORF 1, RTL, SAT 1, PRO 7, KABEL 1, RTL 2, SF DRS 2, ZDF, ORF 2 and TELE ZÜRI). An expert in humour research screened all clips for their humorous content and 77 clips were identified to match this criterion.

Pilot Rating Study. Following the initial screening, 12 individuals (six males, six females; age ranging from 21 to 42, $M = 27.17$; $SD = 6.49$) participated in a pilot rating study. The participants watched all 77 clips in two parallel forms (different rank order; duration: 45 – 60 minutes) and rated the degree of humour in each clip on a continuous scale (0 = “no intention to use humour can be detected in this ad”; 100 = “humour is the central element of this ad”). The inter-rater agreement of the degree of humour in the clips was .83 and the mean degree of humour $M = 54.45$ ($SD = 15.10$). After this step, three clips were omitted, as subjects did not affirm them to contain much humour.

Expert Rating Study. The remaining 74 clips were then presented to a group of five humour experts that rated the degree of incongruity-resolution, nonsense humour and sexual humour in all of the clips (three seven-point Likert scales, ranging from 1 = “no INC-

RES/NON/SEX” to 7 = “strong INC-RES/NON/SEX”), as well as ratings of the degree of funniness and aversion towards the clips (1 = “not funny/not aversive”, 7 = “very funny/very aversive”). Inter-rater reliability analyses showed very good reliability across the experts for sexual content ($\alpha = .93$), as well as good reliability for NON content ($\alpha = .75$). The reliability for INC-RES was lower ($\alpha = .60$).

Item Choice. Next, the information on the presence of humour in the clips (rating study), as well as the degree of NON, INC-RES and SEX assigned by the experts were used to choose TV ads for the inclusion in the main study. Firstly, all ads with general humour content below 40.00 (scale from 0 to 100) were excluded. Secondly, clips were excluded if the degree of INC-RES, NON, or SEX was below the midpoint of the scale (4.00). Thirdly, if clips were of similar product content, special attention was given to include a sufficient amount of NON and SEX, as the ads generally included a higher extent of INC-RES humour. Table 1 shows the mean humour ratings derived from the rating study, as well as the mean ratings of INC-RES, NON, and SEX from the expert ratings for each TV ad.

Table 1. Rating study ($N = 12$) and Expert ratings ($N = 5$) of the TV ads selected for the main study

TV advertisement (abbreviated names of product/brand)	$M_{INC-RES}$	M_{NON}	M_{SEX}	M_{Humour}
INC-RES				
Kika	6.20	2.60	3.60	82.64
Eltako Electronic Equipment	5.80	1.80	1.00	61.18
Hornbach	5.80	2.60	1.00	71.36
Pepsi	5.60	2.20	1.00	79.55
Whiskas	5.40	2.00	1.00	68.73
Apollinaris Silence	5.20	3.00	2.80	64.27
Milchschnitte	5.00	2.20	1.20	73.82
Yello Strom	4.80	3.20	1.60	70.45
NON				
K-fee	5.00	5.20	1.60	55.82
Feldschlösschen Schlossgold	4.00	5.00	1.00	74.64
Condor	4.80	5.00	1.00	50.91
Garnier Fructis Style Hard Glue	4.80	5.00	2.00	72.00
Lion Cereals	4.20	4.60	3.40	74.82
Asics	4.00	4.20	1.00	69.09
SEX				
Crème d'or Migros	5.40	2.20	6.40	77.73
Tui	5.60	2.60	6.20	45.91
Veet Shaving Gel	6.00	2.20	6.00	51.73
Herbal Essences Fruit Fusions	4.80	4.00	5.60	41.91
Michel Fruit Juice	5.40	1.80	5.40	58.55
INC-RES and NON				
Peugeot 407	5.00	4.80	1.20	61.64
Curry King Meica	4.80	4.60	1.00	61.64
Febreze	5.60	4.60	1.00	63.27
Orangina	5.40	4.20	1.20	83.73
Schweppes	5.80	4.20	1.00	71.00
Airwaves	5.00	4.00	2.40	53.64
Maestro Card	5.60	4.00	4.00	56.82
INC-RES and SEX				
Nivea Sun Spray	6.20	1.40	4.60	59.64
Fanta	5.00	2.60	4.40	76.27
Veltins	5.80	2.80	4.40	60.45
Apollo Optik	5.00	3.40	4.00	70.45

Notes. INC-RES = incongruity resolution humour. NON = Nonsense humour. SEX = sexual humour. INC-RES and NON = contain elements of both structure categories. INC-RES and SEX = contain elements of incongruity-resolution structure and sexual content. The 3WD dimensions were rated by $N = 5$ humour experts. The mean rating of humour content was rated by $N = 12$ individuals.

As Table 1 shows, 33 clips were selected for the main study. They were all of medium to high degree of humour (N = 12; rating study) and could be assigned to the different structure and content categories, with some clips not being clearly assignable to one category only (i.e., combining incongruity-resolution structure and sexual content, or entailing both, elements of incongruity-resolution humour as well as nonsense humour).

2.3.2. Study procedure

Participants were recruited via flyers in the Zurich area. After agreeing to participate, they were sent the 3WD, EPQ-Rk and SSS-V to fill in at home (approx. 45–60 minutes). Then, they were invited to a session at the University of Zurich, where they looked at each TV ad individually on a computer screen (with head phones) and filled in the accompanying Humorous Clips Rating Form (approx. 60 minutes). To avoid rank order effects, the clips were presented in two parallel forms. This study complied with the ethical standards of the Swiss Society for Psychology. All participants gave their consent to participate and were free to withdraw from the study at any time, and their anonymity was ensured. As an incentive, they were offered a feedback on the study results and a partial course credit (if applicable).

3. Results

3.1. Can the 3WD dimensions be found in humorous TV advertisements?

To investigate our first aim, we computed a principal component analysis on the TV advertisement clips including the 3WD scores to investigate whether both types of material would load on the same underlying components. The scree-test suggested the retention of five factors (Eigenvalues were 8.55, 3.14, 1.85, 1.78, 1.56, 1.06, and 0.96), which explained 46.94 percent of the variance. They were rotated according to the Promax criterion (allowing for correlations among the components) and the loadings are presented in Table 2 (the descriptive statistics of the funniness ratings of all clips can be found in Appendix A). The components represented the three components of the 3WD (INC-RES, NON, SEX) as well as one advertisement-specific component.

Table 2. Factor loadings of the TV advertisement clips and the 3WD scores.

	INC-RES	Ad 1	SEX	NON	Ad 2
Thomy	.64	-.34	.03	-.03	.10
Amandine	.21	-.16	-.19	.38	.51
Cabrio	.04	-.08	.62	.17	-.19
Eltako					
Electronic	-.08	.53	-.27	.23	.33
Garnier Fructis	.62	.00	.25	-.12	-.16
Michel	.64	-.02	-.29	.23	.11
Milchschnitte	.05	.06	.23	.46	.21
Febreze	.66	.15	-.04	-.18	.16
Fanta	.56	-.10	.15	.14	-.08
Apollinaris					
Silence	-.15	.63	-.05	.34	-.08
Airwaves	.52	-.05	.04	.06	.00
Nivea Sun					
Spray	.53	-.15	.13	.10	.05
Yello Strom	.41	.56	-.19	-.08	.02
Peugeot 407	.42	.18	.47	-.08	-.19
Veltins	.36	.13	.00	.51	-.28
Pepsi	-.20	.15	.38	.64	.15
Condor	.41	.44	.02	-.17	.11
Herbal					
Essences	.81	.08	-.09	.04	-.11
Kika	.05	.45	.25	.05	.42
Schweppes	.71	.07	.06	-.05	-.12
Feldschlösschen	.18	.53	-.03	-.24	.26
Maestro Card	.21	-.08	.49	.09	.05
Hornbach	-.16	.66	.06	.05	.11
Apollo Optik	.44	.04	-.03	.02	.37
Curry King	.64	.04	.14	-.08	-.03
Meica					
K-fee	-.07	.48	.03	.29	-.33
Veet Shaving	.78	-.04	-.08	.19	.31
Orangina	-.08	.43	.23	-.02	-.03
Asics	.13	-.01	.37	.05	.16
Creme d'Or	.39	.03	.04	.31	-.01
Whiskas	.45	-.08	.35	.08	.06
Lion Cereals	-.06	.07	.75	.08	.08
Tui	.41	.28	.05	.13	-.05
3WD INC-RES	.45	-.13	.04	.15	.50
3WD NON	.13	-.02	.04	.59	.22
3WD SEX	-.13	.06	.41	.13	.62

Notes. N = 133. INC-RES = incongruity resolution humour. NON = nonsense humour. SEX = sexual humour. Bold = Loadings > .30.

As Table 2 shows, component 1 denominates INC-RES, component 4 NON and component 3 SEX (sexual content). The advertisement specific component 2 has high loadings of five clips that did not show other substantial loadings on other components and were intended to represent INC-RES humour, or combining INC-RES with SEX. Interestingly, this factor was correlated to age and gender and hence might represent gender specific ads. Component 5 showed loading on the 3WD INC-RES, as well as SEX, with two advertisement clips loading highly on this factor (Kika and Amandine); so it might be rather specific. To conclude on aim 1, the two structure components and content component of the 3WD could also be found in TV advertisements, explaining the large parts of the explained variance (i.e., 40.61 percent of a total of 46.94 percent). Yet, some of the explained variance links to TV advertisement specific factors.

3.2. Do the 3WD dimensions and the TV advertisement humour appreciation dimensions show similar correlation patterns?

Our second aim was to investigate the correlations of the 3WD factors and the TV ad factors to investigate whether the patterns of relationships could be replicated in both types of stimuli. The table in Appendix B shows the descriptive statistics of the funniness and aversiveness ratings towards INC-RES, NON, and SEX in the 3WD and the TV advertisement clips. To investigate aim 2, we computed Pearson correlations between the 3WD scores on funniness and the TV ad scores. The results can be seen in Table 3.

Table 3. Correlations between the funniness of INC-RES, NON, and SEX in the 3WD and in TV ads.

Humour ads	3WD scales		
	INC-RES _f	NON _f	SEX _f
INC-RES _f	.63***	.42***	.36***
NON _f	.22*	.32***	.26**
SEX _f	.45***	.26**	.46***

Notes. N = 133-134. INC-RES = incongruity resolution humour. NON = nonsense humour. SEX = sexual humour.

*p < .05. **p < .01. ***p < .001.

Table 3 shows that the convergent correlations of the respective factors in both types of stimuli (in italics) were numerically highest for INC-RES, followed by SEX, and numerically lowest for NON. Overall, the correlations were in the expected direction and comparable across media types, with the exception of the funniness of nonsense humour in the 3WD being correlated highly positively to the funniness of INC-RES humour in ads. Next, we looked at the correlations for the aversiveness ratings. Table 4 presents the correlations for the ratings of aversiveness.

Table 4. Correlations between the aversiveness of INC-RES, NON, and SEX in the 3WD and in TV ads.

3WD scales	Humorous TV advertisements		
	INC-RES _a	NON _a	SEX _a
INC-RES _a	.45***	.30***	.49***
NON _a	.41***	.44***	.42***
SEX _a	.29***	.38***	.42***

Notes. N = 133-134. INC-RES = incongruity resolution humour. NON = nonsense humour. SEX = sexual humour.

***p < .001.

As Table 4 shows, a similar pattern of correlations was obtained as for the funniness ratings. The convergent correlations were of medium size and numerically highest for INC-RES, followed by NON and SEX. To further investigate the generalizability of results, we looked at gender differences in the appreciation of humour in both types of media. Table 5 shows t-test for all scales separately.

Table 5. Gender differences in the appreciation of humour of the 3WD and TV advertisements.

Humour Appreciation	Gender				<i>df</i>	<i>t</i>	<i>p</i>
	male		female				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
TV advertisements							
INC-RES _f	27.66	10.68	32.58	7.95	81.76	-2.82	.016
NON _f	5.24	3.05	6.14	2.57	131.00	-1.83	.069
SEX _f	12.14	6.25	13.17	5.28	131.00	-1.01	.312
INC-RES _a	7.36	10.69	5.47	7.45	77.88	1.10	.275
NON _a	2.44	2.83	2.02	2.54	131.00	0.88	.382
SEX _a	5.94	7.47	4.65	4.94	75.12	1.09	.281
3WD							
INC-RES _f	27.43	13.44	32.19	12.12	132.00	-2.12	.036
NON _f	21.88	11.50	24.77	10.56	132.00	-1.49	.140
SEX _f	23.55	14.26	24.77	12.36	132.00	-0.52	.601
INC-RES _a	5.08	8.79	5.58	6.24	132.00	-0.38	.701
NON _a	7.16	8.47	9.27	8.36	132.00	-1.41	.161
SEX _a	18.31	16.81	23.51	13.77	132.00	-1.95	.054

Notes. TV advertisement: *N* = 133; males: *N* = 50; females: *N* = 83. 3WD: *N* = 134; males: *N* = 51; females: *N* = 83. INC-RES = incongruity resolution humour. NON = nonsense humour. SEX = sexual humour. F = funniness. A = aversiveness. *P* = uncorrected *p*-value.

Table 5 shows the t-tests for differences of males and females in humour appreciation. After correcting for multiple comparisons (Bonferroni correction), no gender differences occurred in the appreciation of humour (funniness and aversiveness) in both types of stimuli (all n.s.). To conclude on aim 2, similar patterns of correlations can be found for both types of media, which are in line with our expectations. Yet, the convergent correlations show that assessing humour appreciation in TV advertisements and the 3WD is not overlapping largely (and the current measures may not be seen as “parallel versions” of the same test). This is not surprising as the ads are not turned into a test yet and the reliability is not optimized. However, clearly they serve comparable tastes.

3.3. Personality correlates of humour appreciation

Our third aim was to investigate the personality correlates (extraversion, neuroticism, psychoticism, and sensation seeking) of the humour appreciation factors in the 3WD, as well as with the TV advertisements. We computed partial correlations between extraversion, neuroticism, psychoticism, and the total score of sensation seeking and the humour appreciation factors, while controlling for age and gender. Table 6 shows the correlations.

Table 6. Partial correlations of the personality traits with INC-RES, NON, and SEX in the 3WD and in TV ads.

	EPQ			SSS-V total
	P	E	N	
3WD				
INC-RES _f	-.23**	.05	-.05	-.22*
INC-RES _a	-.17	.09	.02	-.01
NON _f	-.15	-.01	-.06	-.10
NON _a	-.10*	.08	.06	-.15
SEX _f	-.04	.17	.04	.09
SEX _a	-.24**	-.04	.07	-.27**
TV advertisements				
INC-RES _f	-.21*	.15	-.06	-.21*
INC-RES _a	-.03	.15	.05	.12
NON _f	-.13	.09	-.02	.02
NON _a	-.12	.04	.10	-.12
SEX _f	-.16	.17	-.05	-.02
SEX _a	-.04	.04	.09	.05

Notes. $N = 128 - 130$. INC-RES = incongruity resolution humour. NON = nonsense humour. SEX = sexual humour. F = funniness. A = aversiveness. Partial correlations correcting for gender and age.

* $p < .05$. ** $p < .01$.

As Table 6 shows, extraversion and neuroticism did not relate to humour appreciation scores in either type of stimuli, which was in line with our expectations. Psychoticism related negatively to the funniness of INC-RES in both type of media, as expected. Moreover, psychoticism related negatively to the aversiveness of NON and SEX in the 3WD. In line with former findings, sensation seeking related negatively to the funniness of INC-RES humour (in the 3WD, as well as TV advertisements). Yet, the positive correlations between the funniness of NON and sensation seeking (see Ruch 1992; Carretero-Dios & Ruch 2010) could neither be replicated in the 3WD, nor in the TV advertisements in the current sample.

3.4. Can the appreciation of humour in ads predict individuals' willingness to buy?

Our fourth aim was to investigate the relationship of humour appreciation and TV ad outcomes (i.e., willingness to buy). First, we computed t-tests to check whether the funniness ratings differed for individuals who were familiar with the clips prior to the study as compared to individuals who were not familiar with them. For two clips, no t-test could be computed because none of participants had ever seen the clip. For the remaining 31 clips, no difference in funniness was found for the two groups of participants (familiar with the clip prior to the study vs. unfamiliarity with the clip) after controlling for multiple comparisons (Bonferroni correction; all $p > .05$). Next, we computed partial correlations (checking for age and gender) between perceived funniness of an ad and the willingness to buy the product/use the service for each TV advertisement clip (between-subjects design for raw data; see Ruch, 1995, for a detailed elaboration of this procedure). The median of the correlations was $r_{Md}(33) = .55$, with the smallest correlation being $r = .42$ and the largest correlation being $r = .62$ (all significant at $p < .001$). Thus, the perception of funniness correlated highly and positively to the willingness to buy the product or use the service.

4. Discussion

The current study provides initial evidence that the factors underlying humour appreciation may be generalizable across media types. Two structure (INC-RES, NON) and one content factor (SEX) were shared in visual cartoons and written jokes, as well as in TV advertisements, while two additional components were derived (with one being advertisement clip specific and the other one linking to the combination of INC-RES and SEX in the 3WD). The relationships among the factors, as well as gender differences and personality correlates were highly comparable across the two presentation modes. In the following paragraphs, the results are discussed in more detail.

4.1. Do the 3WD dimensions cover all structure and content factors in humorous TV ads?

The current study shows that the mechanisms underlying humour appreciation as identified in jokes/cartoons, which was widely replicated for many samples, may also be found in humorous TV advertisements. Just as in other types of stimuli, two structure-related components and a content-related component emerge. These two structural components and the one content component of the 3WD explained the largest parts of the explained variance in TV advertisement humour. Yet, some variance remained unexplained. This variance may cover aspects that were forgotten in the 3WD (and may link to some of the categories proposed by other authors mentioned above). Or the unexplained variance reflects the influence of item difficulty, as well as modality or clip specific factors. Nevertheless, the 3WD seems to provide a good working model to categorise the humour of TV advertisement clips.

Yet, the current study did not test parallel versions of the 3WD in different media. The TV ads utilized in this study cannot be seen as convergent to the 3WD (thus, they are not suitable for the strict investigation of convergent validity). The current study merely tested whether the underlying structures would, to some degree overlap (and they do).

Interestingly, NON was less prevalent in TV advertisements as compared to the 3WD, indicating that the specific aim of TV advertisements, i.e., shaping a potential customer's attitude, affect, cognitions and consequently buying behaviour, may be achieved less easily if no clear message can be resolved by/through the humour, or even be somewhat contradictory to the nature of nonsense humour (i.e., not fully resolving a punch line and maybe leaving the individual puzzled, yet amused). An alternative hypothesis is that nonsense is typically appreciated by a group not targeted by TV ads. Nonsense is considered funny by younger, non-conforming individuals open to experience—maybe they are less often to be found watching TVt.

4.2. Personality correlates of humour appreciation

The findings on psychoticism, extraversion, and neuroticism were in line with prior findings: while correlations of humour appreciation to E and N were absent, psychoticism related negatively to the funniness of INC-RES (Köhler & Ruch 1996). These results replicate findings from prior studies for the 3WD and show that the same patterns can be found for humour appreciation in TV advertisements. In the current study, we could replicate that sensation seeking relates negatively to the funniness of INC-RES humour. This was found for both types of media: jokes and TV advertisements. Yet, we could not replicate the positive correlations found between the funniness of NON and sensation seeking in neither medium (see Ruch 1992; Carretero-Dios & Ruch 2010). Thus, while we find the same pattern of correlations in jokes as well as in TV advertisements, we did not replicate the finding on

NON in neither type of stimuli. With respect to the ads, this might be due to the small (and thus not very representative) number of nonsense advertisements in the current study. More generally, the appreciation of NON was lower in this sample. Thus, the current correlations might be sample specific. Ideally, the study needs to be replicated with more nonsense based ads.

4.3. Humour appreciation in ads and willingness to buy

Eisend (2009) reported in his meta-analyses that humour in ads increased purchase intention: there was repeatedly a positive linear relationship between perceived funniness and positive brand attitudes. This finding was replicated in the current study. The funniness ratings all showed high and positive correlations to the individuals' willingness to buy the product or use the service. Thus, humour seems to be a powerful tool to shape potential customers willingness to buy a product. Yet, this is only true if the potential customer appreciates the humour of the clip.

4.4. Limitations

One limitation of the current approach is the under-representation of “pure” nonsense humour in the advertisement clips (at least for German advertisements). While Weinberger, Gulas, and Weinberger (2015) identified nonsense humour to be present in around 30–60 percent of ads—which might be seen as a contradiction to our finding—it needs to be considered that these authors have a different understanding of nonsense humour as compared to the 3WD framework (i.e., nonsense being explained by “Silliness”. This type of humour includes ridiculous pictures. Many children's books written by Dr. Seuss make use of nonsense humour, as does Alice in Wonderland. Unusual, peculiar, absurd, silly, clownish, or odd situations, clumsiness, ignorance, grotesque, eccentric behaviours, or characters, or exaggeration”; Weinberger *et al.* 2015: 472).

As it might counteract some important aims of humour in advertisements (i.e., increasing comprehension of the ad; cf. Weinberger & Gulas 1992), it seems that there are fewer ads with humour without resolutions (or with only partial resolution). Therefore, nonsense can only be studied with limits. Moreover, another limitation occurs from the reported understandings of nonsense: there is a lack of common vocabulary across disciplines, within humour research, nonsense is defined very differently as compared to some approaches stemming from a Marketing/Consumer Behaviour tradition.

A further limitation concerns the recruited sample: while the current sample consisted of a “convenient sample” future studies may pay attention to have more balanced samples of males/females and individuals from all professions and educational backgrounds, as well as studying different countries and cultures.

Despite these limitations, one can conclude that this first attempt at examining whether humour appreciation generalizes across media was successful. The results support the validity of the 3WD studies (as they extend to other media) and constitute to advertisement research (as the personality correlates of humour appreciation are well studied and can be extended to understand the target groups of advertisement better). More studies are needed that look at convergence across even more diverse media (including funny films, theatre plays, humorous short stories, etc.). This will eventually foster humour research, as it will not be limited to special media that carry humorous messages.

4.5. Implications for further research

In the current study, stimuli from the German language context were used. Yet, it is unlikely that a given brand would use the same kind of humour or the same advertisement content when preparing an ad for a different cultural context. As Davies (1998, 2005) outlined in numerous works on jokes and their targets, cross-cultural research (and marketing experts) needs to take into account the different targets jokes may have in different cultural groups. Thus, stimuli may not be easily transferrable if the knowledge of a script or schema is unique to a culture (Davies 1998, 2005; see also Alden *et al.* 1993) and consequently, humorous ads identified in this study may not be easily used in other language groups or cultures. It is likely that in TV advertisement clips, contextual factors that may differ between cultures or language groups will also have a bigger impact, making it difficult to construct tests that can be used in cross-cultural research. Moreover, while Davies (1998, 2005) elaborated on how targets change when jokes travel across borders, the present study suggests that it is always the same type of recipient that regards certain jokes as appealing.

Fostering interdisciplinary research, future studies may also aim at analysing the properties of humorous advertisements through an analysis of the six knowledge resources of the GTVH. This could provide insights into the structural differences of jokes and films that might account for some of the differences in the current results (see e.g., Hempelmann & Ruch 2005). We assume that situation and narrative strategies will clearly differ between the two media types and probably be more important in TV advertisements. Language will also differ, too, and may be less important, as advertisements will also hugely rely on visual cues.

4.6. Conclusions

Humorous ads make up around 20 percent of all ads (cf. Beard 2005, 2008; Chan 2011). Interestingly, the structure underlying humour appreciation in jokes and cartoons could also be found in TV advertisement clips utilising humour. Thus, the knowledge we have on personality correlates and preferences linked to humour appreciation in jokes may be used in shaping humour in advertisements. If the target group (i.e., potential customers) is known and features of this group are known, as well (i.e., conservative vs. liberal, high vs. low in psychoticism, high vs. low in sensation seeking, etc.), the humour of the ad may be more specifically tailored to the liking of the target group, consequently positively fostering favourable marketing outcomes.

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Notes

¹ To determine scores for INC-RES, NON, and SEX in TV advertisements, we selected clips for aggregation in the five step procedure. First, we omitted clips that did not load highly on the INC-RES, NON, and SEX factor of the joint PCA analysis of the TV advertisement stimuli and the 3WD scores. Secondly, we omitted clips that were high on INC-RES and SEX and could not be separated clearly. Third, we correlated the 3WD scores with the rated funniness (pre-study) to nominate the clips that we correlating highly with the 3WD INC-RES, NON, and SEX. Clips that did not highly correlate to the 3WD scores were omitted. Forth, the remaining clips were cross-validated with the expert ratings of the pre-

study. Fifth, we computed an aggregate score of the funniness ratings of the TV advertisement clips for all clips of the INC-RES, NON, and SEX category resulting from the previous four steps and computed the corrected item to total correlations (CITC) for each clip. The CITC were medium to high (.40 - .69 for INC-RES; .52 for NON; .43 - .67 for SEX). For all clips but one (KiKa), the correlations to the assigned dimension were higher than to the other dimensions. This procedure led to a final choice of 17 TV advertisement clips (10 INC-RES, 2 NON, 5 SEX).

Appendices

Appendix A. Descriptive statistics of the ratings towards the clips in the mail study.

TV advertisement clips	Funniness		Originality		Aversiveness	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Crème d'or Migros	4.48	1.38	4.43	1.42	0.71	1.22
Pepsi	4.24	1.52	4.41	1.40	0.59	1.19
Fanta	4.11	1.40	4.09	1.38	0.41	0.91
Kika	4.03	1.38	3.97	1.48	0.41	1.04
Whiskas	3.88	1.50	3.98	1.47	0.27	0.76
Hornbach	3.68	1.70	3.71	1.61	0.57	1.23
Milchschnitte	3.48	1.59	3.56	1.61	0.64	1.46
Apollo Optik	3.46	1.56	3.30	1.54	0.83	1.42
Feldschlösschen	3.34	1.75	3.85	1.59	0.70	1.30
Schlossgold	3.26	1.58	3.53	1.47	0.52	1.16
Orangina	3.21	1.90	3.26	1.80	0.60	1.31
Apollinaris Silence	3.20	1.88	3.47	1.84	0.65	1.41
Veltins	3.18	1.65	3.06	1.63	1.09	1.46
Lion Cereals	3.11	1.77	3.68	1.76	0.86	1.50
Veet Enthaarungsmousse	3.05	1.54	2.88	1.49	0.74	1.34
Eltako Schaltgeräte	3.02	1.73	3.05	1.72	0.63	1.20
Asics	2.99	1.75	3.55	1.62	0.60	1.32
Peugeot 407	2.89	1.58	3.67	1.62	0.59	1.19
Garnier Fructis Style	2.87	1.59	3.20	1.60	0.60	1.21
Schweppes	2.83	1.59	3.15	1.61	0.45	1.11
Maestro Card	2.69	1.61	3.38	1.62	1.32	1.69
Febreze	2.61	1.75	2.75	1.75	0.75	1.54
Nivea Sun Spray	2.47	1.57	2.31	1.53	0.69	1.38
K-fee	2.37	2.05	3.33	1.95	1.92	1.98
Tui	2.35	1.56	2.33	1.58	0.96	1.46
Michel	2.31	1.72	2.17	1.70	1.13	1.79
Airwaves	2.17	1.45	2.95	1.51	0.80	1.43
Condor	2.05	1.85	2.29	1.75	0.73	1.50
Curry King Meica	1.92	1.60	1.89	1.34	1.05	1.66
Herbal Essences Fruit Fusions	1.89	1.59	2.35	1.55	1.21	1.80

Notes. *N* = 132 – 133.

Appendix B. Descriptive statistics of the 3WD dimensions and the INC-RES, NON; and SEX scores of the ratings of the TV advertisement clips.

	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>K</i>	<i>Min</i>	<i>Max</i>	α
TV advertisement clips							
INC-RES _f	30.73	9.35	-0.40	0.51	0	55	0.81
NON _f	5.80	2.78	-0.40	-0.51	0	11	0.52
SEX _f	12.78	5.67	0.03	-0.26	0	28	0.74
INC-RES _a	6.18	8.82	2.05	4.58	0	45	0.88
NON _a	2.18	2.65	1.23	0.80	0	11	0.54
SEX _a	5.14	6.02	1.36	1.36	0	26	0.82
3WD							
INC-RES _f	30.38	12.8	-0.18	-0.42	0	58	0.87
NON _f	23.67	10.97	-0.21	-0.39	0	51	0.78
SEX _f	24.31	13.08	-0.02	-0.91	0	54	0.87
INC-RES _a	5.39	7.29	2.15	6.75	0	46	0.84
NON _a	8.46	8.44	1.08	0.59	0	37	0.80
SEX _a	21.53	15.15	0.41	-0.81	0	57	0.91

Notes. $N = 132 - 133$.

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