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DOI: [https://doi.org/10.1016/0191-8869\(88\)90132-8](https://doi.org/10.1016/0191-8869(88)90132-8)

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ZORA URL: <https://doi.org/10.5167/uzh-77528>

Journal Article

Originally published at:

Ruch, Willibald; Hehl, Franz-Josef (1988). Attitudes to sex, sexual behaviour and enjoyment of humour. *Personality and Individual Differences*, 9(6):983-994.

DOI: [https://doi.org/10.1016/0191-8869\(88\)90132-8](https://doi.org/10.1016/0191-8869(88)90132-8)

This manuscript was published as:

Ruch, W. & Hehl, F.-J. (1988). Attitudes to sex, sexual behaviour and enjoyment of humour. *Personality and Individual Differences*, 9, 983-994.

ATTITUDES TO SEX, SEXUAL BEHAVIOUR AND ENJOYMENT OF HUMOUR

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Summary—Freudian (1905) and Saliency (Goldstein et al., 1972) theory make opposite predictions about the effects of attitudes to sex and sexual behaviour on appreciation of sex humour. Male and female students (N=115) answered a questionnaire of attitudes toward sex, a sexual behaviour inventory (Eysenck, 1976) and a humour test. The results generally were supporting a positive correlation between appreciation of sex humour and the sex scales (sexual libido, satisfaction, experience and pleasure), although the resulting pattern was very complex. Separation of sex humour according to the jokes structure yielded different predictor patterns. Funniness of humour based on nonsense correlated most frequently and most highly with the sex scales libido, experiences and pleasure. Low sexual satisfaction, low permissiveness, and prudishness were correlated with aversiveness of all types of humour. Furthermore, it was determined, whether these variables are better predictors of enjoyment of sexual humour than the more general factors of conservatism and toughmindedness which turned out to be potent predictors in a recent study (Ruch and Hehl, 1986). It turned out that the predictive sex scales were located on the toughmindedness axis and were thus equally predictive of sex humour than T itself. A refinement of the saliency hypothesis was undertaken.

INTRODUCTION

Sexual themes apparently are one of the most prominent contents in humour. Sex as a salient ingredient in humour was stressed by many humour theorists (e.g. Freud, 1905, Berlyne, 1972) and turned out in nearly all factorial investigations in this realm too (e.g. Eysenck, 1942; Cattell and Tollefson, 1966; Ruch, 1981). Sex jokes and cartoons, like other humorous stimuli, are characterized by their content but also by their structure. Rothbart and Pien (1977), Suls (1983), McGhee (1977) and Shultz (1976) developed information-processing models to illustrate the cognitive processes necessary to understand humour. These models are not specific for certain contents; i.e. they serve as general models for the structure of jokes and cartoons irrespective of their content.

Generally, two principal models can serve as a theoretical framework for deriving hypotheses for research on appreciation of content of humour. According to Freud (1905) repressed impulses find relief in a disguised form in jokes as well as in dreams. Therefore, Ss repressing their sexuality should show a preference for sex humour. Generally, funniness of sex humour should go along with a negative attitude towards sex, low sexual experience and a low degree of satisfaction. The hypotheses deducible from Freudian theory are discussed by Kline (1977). An alternative model was provided by the saliency theory (Goldstein, Suls and Anthony, 1972). Goldstein et al. (1972) showed that experimentally established saliency of certain themes (in their case aggression, but also automobiles and music) leads to enhanced attention to these themes, to a better availability of the information necessary to understand the joke and finally to enhanced funniness of jokes with these themes. Saliency theory was not applied so far to predict individual differences in appreciation of humour. Nevertheless, one can assume that sex is habitually more salient for Ss with positive attitudes towards sex, with more sexual experience and a higher degree of satisfaction. Therefore, a positive correlation can be expected between sexual experience and libido on one hand and

appreciation (high funniness and low aversiveness) of sex humour on the other. Thus, Salience theory and the Freudian theory predict opposite results.

Predictors of Individual Differences in Appreciation of Sex Humour

Temperament traits as well as attitude factors have been used to explain individual differences in appreciation of sex humour but surprisingly few attempts have been undertaken to investigate the relationship of sexual behaviour and attitudes to sex to enjoyment of sexual humour. Among the personality variables thought to be relevant predictors of sex humour there predominantly is extraversion (and subcomponents of E), dominance, repression sensitization, aggressivity and masculinity (Joachim, 1986; Rath, 1983; Ruch and Hehl, 1985; for reviews of older studies see Nias, 1981; Hehl and Ruch, 1985).

In the attitude domain hedonism, ethnocentrism and toughmindedness were predictive of sex humour. A set of investigations by Wilson and coworkers (for a summary see Wilson, 1973) showed that liberal, especially hedonistic attitudes were predictors of appreciation of sex jokes and cartoons. The 16PF toughmindedness scale (16PF-I) was predictive of appreciation of sex humour too (Terry and Ertel, 1976; Hehl and Ruch, 1985). In a study by Adelson (1947) ethnocentric males had an enhanced appreciation of sex jokes.

Prerost (1980, 1983, 1984) investigated the effects of sexual experience/activity and enjoyment/satisfaction on the evaluation of sexual humour. Ss were asked whether they consider their sexual satisfaction as 'high' or 'low' and whether they consider their current sexual activity as 'high activity' or 'low activity' in a forced choice procedure. It turned out that activity as well as satisfaction had significant effects on appreciation of sexist and non-sexist sex jokes (Prerost, 1983); funniness of these jokes was enhanced in the high activity and in the high satisfaction groups. The low activity-low satisfaction group yielded especially low funniness scores. The procedure used does not allow to estimate whether activity and satisfaction are uncorrelated or not. Therefore it is not clear whether they overlap in their prediction or not. The separation of sex jokes into sexist and non-sexist was fruitful since this factor was important in some interactions; e.g. females' appreciation of sex jokes was sensitive to this distinction. But generally the sex differences were not apparent; e.g. males and females of the high activity-high satisfaction groups did not differ. In a subsequent study Prerost (1984) used high and low levels of explicitness with both sex jokes and aggressive jokes. Type of jokes interacted with activity and with satisfaction; high active (as well as satisfied) Ss judged high explicit sex jokes funniest, and aggressive jokes least funny. For low active Ss the order was reversed.

There is much evidence that these three sets of predictors are mutually interdependent and thus probably overlap in their prediction of sexual humour. Attitudes to sex are part of the general attitude system of an individual but also of the temperament system. Furthermore, temperament traits are correlated with higher order attitude factors too. In Wilson's (1985) structural model of social attitudes it is the subscale anti-hedonism, a composite of conservatism and idealism, which contains sex items suggesting that Ss with positive attitudes towards sex are realistic liberals. Most of the components of Eysenck's (1976) attitude to sex questionnaire (e.g. sexual permissiveness, libido) were mainly correlated with the attitude factor tough-tendermindedness (T). Conservatism-radicalism (R) and capitalism-socialism, the other main dimensions in the attitude space played a minor role (e.g. conservatism correlated negatively with permissiveness). Thus, T is a higher order attitude factor but also subsumes facets of sexual attitudes. Since realism is the Wilson equivalent of Eysenck's T, all the results fall in line: tough radicals (or realistic liberals) have the most positive attitudes to sex. Sexual attitudes and sexual behaviour are correlated with temperament traits, too; predominantly with extraversion, psychoticism, and sensation seeking (Eysenck 1976; Barnes, Malamuth and Check, 1984; Zuckerman and Litle, 1986). All these traits show

relationship to T and some of them also with R suggesting that positive attitudes to sex are located in the tough/liberal quadrant (with an enhanced emphasis on the T component).

A Two Component Model of Tendency Humour

Recently, we hypothesized that in sex humour there are two sources of pleasure: structure and content. We argued that the broad higher order toughmindedness (T) factor can be regarded as the best personality background for discussing individual differences in appreciation of the content component of sexual humour (Ruch and Hehl, 1986). The hypothesis was based on the observation that several personality variables (like intolerance of ambiguity, dominance, ethnocentrism, economical and political interests, low social and religious interests, dogmatism, masculinity, and disinhibition) which apparently were different in their meaning and which did not have any sexual content (but which were all markers of the T-factor) were able to predict appreciation of sex jokes. Parsimoniously, the T hypothesis incorporates all of the single specific hypothesis set up to explain appreciation of sex humour. Furthermore, T can be extracted from the temperament and the attitude domain.

The importance of the structure component in sex humour (which is usually neglected) turned out to be quite high; it roughly contributed half as much to the variance of the funniness scores as the content did (Ruch and Hehl, 1986). There is evidence that appreciation of the structure can be predicted separately from the content; e.g. independent of whether the content of the joke is sexual or not, conservatism predicts funniness of humour based on the incongruity-resolution structure and sensation seeking is predictive of funniness of humour based on the nonsense structure (Ruch, 1987). Sex jokes and cartoons can be separated according to their structure (as revealed by their factor loadings and by rater agreement) into INC-RES SEX, NON SEX and PURE SEX humour (i.e. humour based on either the incongruity-resolution or the nonsense structure and humour, in which the structure variance is largely overpowered by the content variance). It turned out that tough Ss gave higher funniness as well as lower rejection (aversiveness) ratings to all sex humour irrespective of the jokes' structure. Additionally, INC-RES SEX and PURE SEX humour were correlated with conservatism but NON SEX was not (Ruch and Hehl, 1986). NON SEX humour, however, was correlated with sensation seeking (Ruch, 1987).

Specific versus global predictors of appreciation of sex humour? The question raised in the present study is whether specific attitudes to sex and sexual behaviour are predictive of appreciation of humour of different structure and different content. Since attitudes to sex are lower order components of the global T factor it might be, that they are better predictors of appreciation of sex humour than T is. They might be able to predict specific sources of variance that are unpredictable by T. The present study can not be regarded a replication of the recent findings (Ruch and Hehl, 1986) since we will use the same sample of Ss, however, it extends the recent study by testing whether it is better to discuss appreciation of sex humour within the framework of specific attitudes to sex or within the model of a general attitude space. The progress is the refinement of the T-hypothesis in appreciation of sex humour by looking whether individual differences in attitudes to sex and in sexual behaviour are better predictors of appreciation of sex as a salient content in humour than the more global T-factor is.

Hypotheses Generally, the predictiveness of attitudes to sex and sexual behaviour will depend on their location in the attitude space; those revealing high correlations with the toughmindedness axis will be correlated with funniness of sex humour and with aversiveness of all humour categories. Those scales which additionally correlate with the conservatism axis will correlate with the single subgroups of sex humour to a different magnitude. Paradoxically, most sex humour is located in the tough/conservative diagonal but literature suggests that positive attitudes to sex (e.g. libido, hedonism, sexual permissiveness) are

located somewhere between the toughmindedness axis (i.e. 45 degrees away) and the tough/liberal diagonal (i.e. 90 degrees away). Therefore we expect nonsense sex humour to reveal the highest correlations, followed by pure sex humour and INC-RES SEX humour (which might even be unrelated from the predictors). For sex scales not located in the attitude space we expect a positive relationship with sex humour, if sex is a salient theme for the high scorer (i.e. as suggested by the salience theory).

METHOD

Subjects and Material

The sample comprises 59 male and 56 female non-psychology students of the University of Düsseldorf which were paid for their participation. Their age was between 18 and 32 years with a mean of 22.6 yr and a standard deviation of 3.0 yr.

Inventory of Attitudes to Sex (IAS). The 159 IAS-items (Eysenck, 1976) can be scored for the two superfactors sexual satisfaction and sexual libido, a masculinity/femininity scale, and for the 11 primary factors (permissiveness, satisfaction, neurotic sex, impersonal sex, pornography, sexual shyness, prudishness, sexual disgust, sexual excitement, physical sex, and aggressive sex). The questions listed at the end of the questionnaire were analysed separately: If you were invited to a 'blue' film would you accept/refuse; if you were offered a highly pornographic book would you accept/ reject it; if you were invited to take part in an orgy, would you take part/refuse; ideally how often would you prefer to have intercourse (from a) never to g) more than once a day); habitual strength of sexual desire (in ten steps); strength of influence that inhibit you sexually (moral, aesthetic, religious) from 10 to 1, virginity, and age of first intercourse.

Sexual Behaviour Inventory (SBI; Eysenck, 1976). Ss answered a list of 19 sexual activities by marking one of the following alternatives: I have done this and enjoyed it, I have done this, but did not like it, I have never done this, but would like to do it, and I have never done this but would not enjoy doing it (which was not an explicit alternative in the original version). The list comprises sexual behaviour patterns like "One-minute continuous lip kissing" (item 1), "Sexual intercourse, face to face" (5), "Sexual intercourse, man behind woman" (11), "Mutual oral manipulation of genitals to mutual orgasm (14), or "Mutual oral genital manipulation" (19). Six scores were obtained; B.S.1 (B.S. for behaviour scale) to B.S.4 represent the number of items marked for the 4 alternatives. Additionally, an experience-index was obtained by adding B.S.1 and B.S.2 (representing the sum of sexual activities one has ever participated in) and a pleasure-index was obtained by adding B.S.1 and B.S.3 (representing the sum of sexual activities one enjoys or would enjoy).

Reference axes for Conservatism (C) and Toughmindedness (T). Factor scores for C and T were available from a previous analysis (Ruch and Hehl, 1986) of different markers for this two major factors in attitudes (e.g. conservatism, rigidity, intolerance of ambiguity, dominance, disinhibition, superego strength, theoretical, economic, aesthetical, social, political and religious interests).

Humour test. Both forms (3WD-A; 3WD-B) of the humour test were used and combined for ease of presentation and to enhance reliability. The humour test provides scores for funniness (f) and aversiveness (a) of humour of the three categories incongruity-resolution (INC-RES), nonsense (NON), and sex (SEX); i.e. INC-RESf, NONf, SEXf, INC-RESa, NONa, and SEXa. In INC-RES humour the surprising incongruity induced by the punchline can be resolved completely. In nonsense humour the punchline provides no resolution at all, only a partial resolution or actually creates new absurdities or incongruities. Each score is based on twenty jokes and cartoons which were rated on unipolar 7-point scales. The

aversiveness scale covers the negative affect induced by humour; e.g. indignation, embarrassment or boredom. Additionally, the sex jokes and cartoons were separated according to their structure and further funniness and aversiveness scores were calculated for (6) INC-RES SEX humour, (11) PURE SEX humour and (3) NON SEX humour.

RESULTS

The IAS and SBI scales were correlated with funniness (Table 1) and aversiveness (Table 2) of the three humour types and the subcategories of sex humour. Incongruity-resolution humour was considered funny by Ss low in permissiveness and pornography. Funniness of nonsense seemed to be more related to sexual behaviour than with attitudes to sex. NONf correlated positively with aggressive sex, the experience- and pleasure- indices of the SBI, and with B.S.1 (number of sexual activities done and enjoyed); NONf correlated negatively with B.S.4 (number of sexual activities would not enjoy). Thus, Ss with experience in and with a positive evaluation of a variety of sexual activities appreciated nonsense cartoons significantly more than Ss with low experience and low pleasure.

Table 1. Correlations between the Inventory of Attitudes to Sex (IAS), the Sexual Behaviour Inventory (SBI) and funniness of incongruity-resolution (INC-RES), nonsense (NON), and (SEX) humour (columns 1 to 3) and funniness of the subcategories (PURE SEX, INC-RES SEX, and NON SEX) of sex humour (columns 4 to 6)

	INC-RESf	NONf	SEXf	INC-RES SEXf	NON SEXf	PURE SEXf
<u>IAS</u>						
Satisfaction	0.02	-0.09	0.17	0.15	0.10	0.17
Libido	-0.14	0.14	0.25**	0.12	0.40***	0.24*
Masculinity	-0.08	0.15	0.28**	0.15	0.41***	0.25**
Permissiveness	-0.21*	0.09	0.12	0.03	0.25**	0.10
Satisfaction	0.03	-0.10	0.12	0.10	0.06	0.13
Neurotic sex	-0.02	0.15	-0.06	-0.10	0.06	-0.07
Impersonal sex	-0.14	0.06	0.05	-0.06	0.17	0.06
Pornography	-0.20*	0.07	-0.02	-0.11	0.17	-0.03
Sexual shyness	0.00	-0.02	-0.04	0.00	-0.13	-0.02
Prudishness	-0.13	0.00	-0.24**	-0.26**	-0.11	-0.22*
Sexual disgust	0.04	-0.05	-0.08	-0.09	-0.06	-0.06
Sexual excitement	-0.01	0.17	0.24*	0.21*	0.28**	0.19*
Physical sex	0.00	0.05	0.24**	0.20*	0.33***	0.19*
Aggressive sex	-0.05	0.20*	-0.01	-0.09	0.09	0.01
<u>SBI</u>						
BS1 done/enjoyed	-0.04	0.23*	0.12	0.08	0.23*	0.08
BS2 done/disliked	-0.07	-0.07	-0.04	-0.03	-0.07	-0.03
BS3 would enjoy	0.05	-0.10	0.07	0.09	-0.01	0.08
BS4 would not enjoy	0.06	-0.21*	-0.24**	-0.21*	-0.31**	-0.19*
Experience	-0.07	0.21*	0.11	0.07	0.22*	0.07
Pleasure	-0.02	0.22*	0.22*	0.19*	0.30**	0.17

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$

Sex humour was rated funny by Ss high in sexual libido, masculinity, sexual excitement, physical sex and pleasure and considered not funny by Ss high in prudishness and B.S.4 (would not enjoy). Separation of the sex category revealed that NON SEX humour was most frequently and most highly correlated with attitudes to sex and sexual behaviour.

Permissiveness, sexual experience, and B.S.1 (done and enjoyed) correlated positively with NON SEXf although they were not correlated with SEXf. Surprisingly, NON SEX humour was the only subcategory not related to prudishness. Ss high in sexual excitement, physical sex, and pleasure and low in B.S.4 (would not enjoy) rated all three subcategories of sex humour funny. Funniness of sex humour is not related to sexual libido and masculinity when the content is based on the INC-RES structure but most highly so when based on the NON structure.

Table 2. Correlations between the Inventory of Attitudes to Sex (IAS), the Sexual Behaviour Inventory (SBI) and aversiveness of incongruity-resolution (INC-RES), nonsense (NON), and (SEX) humour (columns 1 to 3) and aversiveness of the subcategories (PURE SEX, INC-RES SEX, and NON SEX) of sex humour (columns 4 to 6)

	INC-RESa	NONa	SEXa	INC-RES SEXa	NON SEXa	PURE SEXa
<u>IAS</u>						
Satisfaction	-0.24**	-0.21*	-0.36***	-0.37***	-0.24**	-0.34***
Libido	-0.13	-0.31**	-0.40***	-0.31**	-0.48***	-0.38***
Masculinity	-0.15	-0.33***	-0.42***	-0.32***	-0.47***	-0.40***
Permissiveness	-0.18*	-0.28**	-0.40***	-0.34***	-0.40***	-0.37***
Satisfaction	-0.21*	-0.21*	-0.32***	-0.34***	-0.24**	-0.29**
Neurotic sex	0.04	-0.01	0.10	0.13	0.04	0.08
Impersonal sex	0.00	-0.17	-0.17	-0.07	-0.27**	-0.17
Pornography	-0.03	-0.17	-0.19*	-0.11	-0.29**	-0.18*
Sexual shyness	0.05	0.14	0.14	0.13	0.19*	0.11
Prudishness	0.39***	0.27**	0.36***	0.41***	0.11	0.36***
Sexual disgust	0.08	0.08	0.18*	0.17	0.12	0.18*
Sexual excitement	-0.12	-0.23*	-0.30**	-0.28**	-0.33***	-0.26**
Physical sex	-0.15	-0.19*	-0.26**	-0.26**	-0.25**	-0.23*
Aggressive sex	0.14	-0.09	0.07	0.10	-0.10	0.08
<u>SBI</u>						
BS1 done/enjoyed	-0.15	-0.23*	-0.22*	-0.24**	-0.22*	-0.17
BS2 done/disliked	0.13	0.21*	0.07	0.08	0.10	0.04
BS3 would enjoy	0.09	0.10	0.05	0.06	0.06	0.04
BS4 would not enjoy	0.07	0.15	0.24**	0.27**	0.22*	0.20*
Experience	-0.11	-0.16	-0.20*	-0.22*	-0.19*	-0.16
Pleasure	-0.12	-0.22*	-0.24**	-0.27**	-0.24*	-0.19*

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$

Generally, attitudes to sex and sexual behaviour seemed to be more frequently and more highly related to aversiveness of humour than to its funniness. Permissiveness, satisfaction and the satisfaction superfactor correlated negatively with aversiveness of all types of humour including the sex humour subcategories; i.e. low permissive Ss and Ss dissatisfied with their sexuality tended to react aversively to all types of humour not only to sex humour (see Table 2). Similarly, prudishness correlated positively with aversiveness of all humour categories and the sex humour subcategories (except NON SEX humour) and most highly so with INC-RES and INC-RES SEX humour. Surprisingly, permissiveness was correlated negatively with both INC-RES scales; permissive Ss rated INC-RES humour less funny but they considered them less aversive than non-permissive Ss too. Ss low in libido, masculinity, sexual excitement, physical sex, pleasure, and B.S.1 (have done and enjoyed) and high in B.S.4 (would not enjoy) found nonsense humour and sex humour (including all subcategories) aversive. They also tended to rate INC-RES humour aversive but the correlations were not

significant. NON SEX humour was considered aversive by sexually shy Ss and by Ss with negative attitudes to impersonal sex and pornography. Ss rejecting pornography rated PURE SEX and the global SEX category aversive too. Further support for this result yields from the fact that the IAS-item "sex jokes disgust me" is scored for prudishness (also negatively for permissiveness and masculinity). Sexual disgust correlated positively with SEXa and PURE SEXa. Ss with little sexual experience rated all SEX humour categories aversive. Finally, there was an interesting result, which was not integrated in the patterns shown hitherto: Ss reporting a large number of sexual activities they have done and disliked found nonsense humour aversive. These Ss were low in sexual satisfaction, sexual libido, and masculinity, permissiveness, sexual excitement, and physical sex and high in neurotic sex, sexual shyness, prudishness, and sexual disgust; they were found more frequently among females and older Ss.

Table 3. Correlations between the sex questions and funniness and aversiveness of the humour scales

	INC-RESf	NONf	SEXf	INC-RESr	NONr	SEXr
refuse to see a 'blue' film	0.01	-0.15	-0.27**	0.08	0.19*	0.24*
reject offer of a pornographic book	0.03	0.05	-0.21*	0.21*	0.27*	0.41***
refuse taking part in an orgy	0.09	0.01	-0.20*	0.06	0.09	0.25**
ideally frequency of intercourse	-0.09	0.24*	0.19*	-0.01	-0.30**	-0.20*
Habitual strength of sexual desire	0.09	0.21*	0.20*	-0.08	-0.21*	-0.22*
strength of influence that inhibits sexuality	0.13	0.09	0.06	0.09	0.21*	0.21*
Virginitiy (1=yes; 0=no)						
Virgins (1=yes; 0=no)	0.10	-0.08	-0.04	0.12	0.18	0.15
96 non-virgins only: age of first sexual intercourse	0.17	-0.15	0.00	0.11	0.40***	0.26*

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$

Analysis of selected single items. Correlations between the selected questions and funniness and aversiveness of the humour scales were computed (see Table 3). Not surprisingly, nonsense and sex humour revealed the highest correlations. Ss appreciating (funniness high, aversiveness low) sex humour agreed to see a 'blue' film, a highly pornographic book, to participate in an orgy, ideally wished a high frequency of sexual intercourse, and reported a higher habitual strength of sexual desire. Additionally, sex humour was found aversive by Ss who indicated that the strength of influence (moral, aesthetic, religious) that inhibited them sexually was high. NONf was correlated positively with a wish for a high frequency of intercourse and with a higher habitual strength of sexual desire. Aversiveness of INC-RES jokes was higher in Ss who would reject a pornographic book. Nonsense cartoons were found aversive by Ss who would refuse an invitation to a 'blue' film, reject a pornographic book, prefer to have a low frequency of intercourse, with a low habitual strength of sexual desire, with strong sexual inhibitions and who were older at their first intercourse.

Redundancy among the predictors

Next we correlated the IAS- and SBI-Scales with sex, age, the IAS superfactors, and the conservatism (C') and toughmindedness (T') factor scores derived for the Ss in a previous study (Ruch and Hehl, 1986). It was necessary to look at the extent to which attitudes to sex and sexual behaviour were interrelated themselves and how much they correlate with C and T (i.e. to what extent they were independent from the first two dimensions in the attitude space), and to control how large the effects of age and sex on these scales were (see Table 4).

Table 4. Correlations of the Inventory of Attitudes to Sex (IAS) and the Sexual Behaviour Inventory (SBI) with the conservatism- (C') and the toughmindedness- (T') factor, (male) sex, age, as well as the superfactors satisfaction and libido and the masculinity score of the IAS

	C'	T'	sex	age	Satisf.	Libido	Masculinity
<u>IAS</u>							
Satisfaction	0.18	0.09	0.09	0.03	1.00		
Libido	-0.24**	0.53***	0.29**	-0.03	0.05	1.00	
Masculinity	-0.14	0.48***	0.41***	-0.03	0.11	0.91***	1.00
Permissiveness	-0.43***	0.50***	0.16	-0.05	0.16	0.74***	0.60***
Satisfaction	0.18	0.05	0.02	0.11	0.89***	-0.02	0.01
Neurotic sex	0.15	-0.02	0.02	0.10	-0.59***	0.22*	0.16
Impersonal sex	-0.23*	0.41***	0.21*	-0.05	-0.13	0.67***	0.69***
Pornography	0.03	0.02	0.05	0.06	0.11	0.37***	0.45***
Sexual shyness	0.05	0.01	0.11	0.08	-0.55***	-0.03	-0.04
Prudishness	0.10	-0.13	-0.15	0.20	-0.31**	-0.17	-0.19*
Sexual disgust	0.19*	-0.16	-0.21*	0.01	-0.19*	-0.26**	-0.31***
Sexual excitement	-0.10	0.31**	0.32***	-0.05	0.14	0.63***	0.71***
Physical sex	0.09	0.31**	0.09	-0.19*	0.05	0.48***	0.55***
Aggressive sex	-0.10	0.09	-0.12	0.03	-0.10	0.24*	0.22*
<u>SBI</u>							
BS1 done/enjoyed	-0.19*	0.21**	0.22*	0.18	0.45***	0.44***	0.42***
BS2 done/disliked	0.06	-0.12	-0.18*	0.23*	-0.18*	-0.23*	-0.23*
BS3 would enjoy	0.07	0.05	0.07	-0.27**	-0.43***	-0.04	-0.01
BS4 would n.enjoy	0.20*	-0.31**	-0.31**	-0.12	-0.13	-0.51***	-0.51***
Experience	-0.18*	0.17	0.16	0.27**	0.39***	0.37***	0.35***
Pleasure	-0.20*	0.33***	0.35***	-0.01	0.20*	0.55***	0.55***

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$

Sex and age differences. In Eysenck's study males scored higher in permissiveness, impersonal sex, pornography, excitement, physical sex and the libido superfactor whereas females scored higher in satisfaction, disgust and prudishness. In the present study males scored higher in impersonal sex, sexual excitement, the libido superfactor, in pleasure, and in B.S.1 (done and enjoyed) than females. Females scored higher in sexual disgust, B.S.2 (done and disliked), and B.S.4 (would not enjoy). Thus, sex differences were less prominent. Nevertheless, we analysed the correlations between the sex scales and humour for males and females separately. Although the whole pattern of results did not change there were some differences in single results. They will be reported separately if they still emerge after we have raised the sample size. Age differences can be neglected in the IAS scales; the experience index increased with the age.

Locating the IAS- and SBI-Scales in the attitude space. As expected, attitudes to sex and sexual behaviour were more strongly correlated with toughmindedness than with conservatism; but most of the scales were independent of both of them. Nearly all of the IAS and SBI scales correlating significantly with humour were located in the liberal/toughminded vs. tender/conservative diagonal albeit more closely related to T. This explains why NON

SEX cartoons was the sex humour subcategory revealing the highest correlations. None of the sex scales correlated significantly positively with C and T explaining the low and non-significant correlations with INC-RES SEX humour. In detail, toughminded Ss were characterized by high scores in permissiveness, impersonal sex, sexual excitement, physical sex, masculinity and in the libido superfactor. There existed also a higher order relationship between libido and T. The higher a variable's correlation with sexual libido, the higher was its correlation with T. Conservatives scored high in sexual disgust and low in impersonal sex, and permissiveness. Tough liberals scored high in B.S.1 (have done and enjoyed) and tender conservatives scored high in B.S.4 (would not enjoy). High scores in B.S.1 were associated with high scores in satisfaction, libido and masculinity whereas high scores in B.S.4 were associated with low scores in libido and masculinity. Ss with high scores in B.S.2 (have done and disliked) had significantly lower scores in sexual satisfaction, sexual libido and masculinity. Ss with higher scores in B.S.3 (would like to do) had lower scores in satisfaction. The experience score was high in liberals, but the pleasure score was high in tough liberals. Both of these scores were correlated significantly positively with satisfaction, libido and masculinity and the latter was especially highly correlated with the libido superfactor.

Partial correlations: Is T or libido the better predictor?. The question arises whether appreciation of sex as a salient content in humour can be better predicted by the libido superfactor or by the more general toughmindedness factor. Sexual libido is directly related to sex humour through their common content whereas T is a stable general factor covering a variety of subfactors. In order to compare the predictive validities we computed partial correlations between the Funniness and Aversiveness-Scores of the different categories of humour including the sex humour subcategories (i.e. INC-RES SEXf, NON SEXf, and PURE SEXf) and toughmindedness and libido (with the effects of the respective other predictor controlled).

Table 5. Partial correlations between funniness and aversiveness of incongruity-resolution (INC-RES), nonsense (NON), and (SEX) humour (inclusive the subcategories PURE SEX, INC-RES SEX, and NON SEX) and toughmindedness (with the effects of libido controlled; rows 1 and 3) respectively libido (with the effects of toughmindedness controlled; rows 2 and 4)

	INC-RES	NON	SEX	INC-RES SEX	NON SEX	PURE SEX
<u>Funniness</u>						
Toughmindedness	0.18	0.02	0.29**	0.30**	0.11	0.27**
Libido	-0.21*	0.11	0.08	-0.06	0.30**	0.07
<u>Aversiveness</u>						
Toughmindedness	-0.23*	-0.04	-0.23*	-0.23*	-0.08	-0.23*
Libido	0.01	-0.25**	-0.25**	-0.16	-0.39***	-0.23*

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$

Table 5 shows that T was the more potent predictor with regard to funniness of humour. Libido has lost its predictive power once the effects of T were removed; only the correlation with nonsense sex remained significant. On the other hand, if libido was held constant, the correlations between T and funniness of sex humour remained significant (with the exception of NON SEX). Libido and toughmindedness were predicting partly different aspects of aversiveness of humour; T could not account for the effects of libido and vice versa. They seemed to be equally predictive with regard to PURE SEX and the general sex category; T was a better predictor of aversiveness of INC-RES SEX humour and libido was a better predictor of aversiveness of NON SEX humour.

The results of NON SEX humour fell out the line. This might have been an effect of the structure (libido was almost significantly related with NONf) and did not affect the general conclusion. Here, T and libido were compared with respect to their predictive power of the content of sex humour.

DISCUSSION

Generally, the results of the study favour the view of a positive relationship between sex as salient content and appreciation of sex humour. Attitudes to sex as well as sexual behaviour were related to funniness and aversiveness of sex humour in the following way: the more positive a S's attitude to sex and the higher his/her sexual experience, the more he/she enjoys sex humour. There was no significant correlation reflecting a higher appreciation of sex humour by Ss with negative attitudes to sex. The major components, sexual libido, satisfaction, experience and pleasure contributed to this positive relationship with enjoyment of sex humour; however, there were several minor aspects in sexual attitudes and behaviour which are not predictive of humour.

Sexuality and funniness and aversiveness of sex humour. In detail, sex humour was rated funny by Ss high in sexual libido, masculine sexual attitudes, sexual excitement, physical sex, and sexual pleasure and by Ss with low scores in prudishness and sexual activities they would not enjoy. Sex humour was rated aversive by Ss high in prudishness, sexual disgust, with many sexual activities they have not tried and they would not enjoy and low in satisfaction, libido, masculine sexual attitudes, permissiveness, interest in pornography, sexual excitement, physical sex, sexual experience, and sexual pleasure and reporting a lot of sexual activities they have done and enjoyed. Nevertheless, there were striking differences within the subgroups of sex humour. NON SEX humour was most often and most highly correlated with the predictors with the exception of prudishness and satisfaction which were more highly related with INC-RES SEX humour.

Thus, both superfactors libido and satisfaction contribute to aversiveness of sex humour but also to aversiveness of humour generally. This is noticeable since they are uncorrelated. Aversiveness of all types of humour was correlated with low satisfaction, low permissiveness, low satisfaction and prudishness. Both satisfaction and prudishness are not correlated with the C' and T' axes and thus independent predictors. Since there is evidence that sexual satisfaction is correlated with emotional stability (Eysenck, 1976) these results fall in line with our recent findings (Hehl and Ruch, 1985). It turned out, that in the personality domain anxiety was the best predictors of general aversiveness of humour. Thus, it seems to be that there are two predictor groups of general aversiveness of humour: a negative emotionality complex (e.g. neuroticism, anxiety, low sexual satisfaction, depressivity) and a tendermindedness complex (e.g. low libido, low disinhibition, religiosity, moral attitude). It might be hypothesized, that the latter might be related to the threshold for feeling offended by humour (sensitivity of detecting negative aspects in humour) whereas the former might be related to the intensity of the negative response to humour. However, there are also predictors for aversiveness of specific humour types.

Expansion of the salience hypothesis. Thus, the present results favour the salience theory (Goldstein et al., 1972) rather than Freud's view. However, a refinement has to be made extending the scope of the salience theory to aversiveness of humour. There is no reason to assume that Ss do find sex humour aversive simply because it is not salient. It makes more sense to assume that for Ss with a negative attitude to sex (e.g. low sexual satisfaction, prudishness, sexual disgust etc.) sex is salient too; but with a negatively affective tone. They also are sensitized to this content but with regard to facilitated perception of its negative attributes. Ss dissatisfied with their sexual life tended to be more susceptible to find sex humour aversive; i.e. their negative view of sex also extends to humour. Thus, it seems to be

fruitful and necessary to distinguish between salient themes of affectively positive tone and salient themes of affectively negative tone. Positively toned salience does predict funniness of content but not necessarily its aversiveness, and vice versa, negatively toned salience does predict aversiveness of content but not necessarily its funniness.

What are the different sex humour categories reflective of?

Different predictors of INC-RES SEX and NON SEX humour? What is the respective psychological neighbourhood into which the different types of sex humour are embedded in? The largest differences apparently emerged between INC-RES SEX and NON SEX humour; PURE SEX was always located between them and will not be considered here. We have listed those variables which hitherto were predicting appreciation of INC-RES SEX and NON SEX humour subcategories differently; i.e. either predicted one category but not the other one, or predicted one category to a higher magnitude than the other. Variables marked with a (-) have not been investigated by us so far but seem to be promising predictors because they are located closely to the respective sex humour categories in the attitude space. These two groups of predictors are redundant, of course. Superfluous to say, that they have in common that they are markers or correlates of T but they differ with respect to conservatism. Predictors of INC-RES SEX humour are located in the tough/conservative quadrant whereas the predictors of NON SEX humour are located in the tough/liberal quadrant.

INC-RES SEX humour	NON SEX humour
<u>high</u>	<u>high</u>
Intolerance of Ambiguity	Permissiveness
Conservatism	Sexual experience
Economical interest	Sexual pleasure
Political interest (need for power)	Sexual libido
Dominance	Sensation seeking (DIS, ES, and BS)
High strength of self-sentiment	Impersonal sex
Ethnocentrism (-)	Pornography
Rigidity	Toughmindedness (liberally biased)
Capitalism	Sexual excitement
Militarism (-)	Physical sex
Chauvinism (-)	Variety of sexual activities done/enjoyed
Authoritarianism (-)	
Intolerance of minorities (-)	
<u>low</u>	<u>low</u>
Aesthetic interest	Sexual activities would not enjoy
Social interest	
Bohemian unconcernedness	
Radicalism	
Tendermindedness (liberally biased)	
Prudishness	
Humanism (-)	
Pacifism (-)	

According to the predictors, appreciation of sex humour based on the NON structure is an expression of sexual pleasure and experience and a general permissive, hedonistic and sensation seeking attitude. These jokes and cartoons are preferred by individuals who are pleasure seekers (seeking pleasure in humour as well as in sex), open to complex and intense experience, interested in a variety of sexual activities. Their sexuality is not inhibited as would be predicted by Freud; however, in Freud's book there were no examples of nonsense sex humour.

When sexual libido and conservative attitudes come together sexual content is enjoyed when it is embedded in the INC-RES structure. Libido was not listed among the predictors

because it was not significantly correlated with INC-RES SEX humour. But libido is important too albeit suppressed by other variables. Libido is positively related to the content of INC-RES SEX humour but negatively correlated with its structural basis (see Table 1). If we eliminate the effects of the structure (which is represented by INC-RESf) with the help of a partial correlation, we get a significant correlation between libido and INC-RES SEXf ($r = 0.29$, $d.f. = 112$, $P < 0.01$). Sexual pleasure can be excavated as an ingredient too ($r = 0.28$, $P < 0.01$) but not sexual experience ($r = 0.16$, NS). However, appreciation of sex humour of the incongruity-resolution structure is more a matter of other variables than of positive sexual attitudes. These jokes and cartoons reflect sexual libido that is blended with dominance, need for power, economic interest, low social interests, capitalistic attitudes, or intolerance of ambiguity. It might be worth investigating whether the sexuality of high scorer in INC-RES SEXf is blended with these motives (power, dominance etc) too. However, these jokes and cartoons make people laugh who are high in libido but also conservative. Probably, this combination inspired Freud (1905) to put forward his repression theory of sexual humour. According to him it is not the sexually permissive, satisfied individual who enjoys sex humour but one who represses his sexual needs. If sexual curiosity, gratification of sexual needs are blocked they are expressed in a "veiled" or "disguised" form in humour or dreams. The strength of the repressing forces determines the degree of veiling necessary to enjoy the tendentious content. The observations leading to Freud's predictions can be simulated by our results if one accepts, that the libido scale serves as an index of strength of sexual desire and conservatism serves as an index for the repressing Superego.

Intrinsic differences in sex humour based on the different structures? Thus, the two sex humour categories are in a different neighbourhood as far as their most potent predictors are concerned. But what are the attributes of sex humour that cause these large differences? The major difference yields from the structure in which the content is embedded. The subgroups of sex humour were separated according to two usually converging criteria: rater agreement in identifying the structure and the loadings of the items on the structure factors. Humour based on incongruity-resolution and nonsense differ with regard to several structural parameters (Ruch, 1987). Thus, nonsense humour is considered to be more complex, unpredictable, unconventional, and surprising than incongruity-resolution based humour. Furthermore, it does not provide complete resolution of the incongruities. These differences can be found in the respective subcategories of sex humour too; i.e. in INC-RES SEX humour and NON SEX humour.

Are there other properties of the jokes which covariate with the structure? The same topic appears quite different when presented in the two different structures; i.e. nonserious, playful, odd, lighthearted, fantastic, absurd, and strange in nonsense and concrete, realistic, disparaging, and targeted in the incongruity-resolution structure. These attributes can be applied to the subgroups of sex humour too. In literature there are several features which have been attributed to sex humour (e.g. chauvinistic, disparaging, veiled vs transparently libidinal, low or high in sexual explicitness, disguised vs. frankly, sexist vs. non-sexist); sex humour was also frequently classified by the sex behaviours depicted, the agents or object involved. These features attributed to sex humour can be applied to our subgroups of sex humour too. Sexual explicitness is highest among the PURE SEX items; they can be based on either structure but they have very low loadings on the respective factors, because of the dominant content. All of them are cartoons which generally supports the explicitness. INC-RES SEX humour gives the impression to be "veiled" or "disguised", not "transparently libidinal". The sexual connotation frequently is not explicitly present in the joke; i.e. it is added to the joke by the recipient when resolving the incongruity. These jokes induce sexual ideas in the recipient; the incongruity cannot be resolved without making use of them.

Is there evidence that in INC-RES SEX humour also different topics are salient which makes the tough conservatives laugh? As one could infer from the predictors of INC-RES

SEX humour, the sexual content seems to be blended with other salient themes (e.g. naivety of females, degradation of one sex partner, sexual superpotency vs. impotency, acceptance of traditional sex roles). These jokes involve themes (e.g. dominant-submissive relationships, sexist and chauvinistic attitudes, superior-inferior characters) which might be salient for toughminded conservatives (i.e. the authoritarian personality).

Nonsense sex humour handles sex in a playful, experimenting, odd, phantastic, and frequently also absurd context; there is no disparagement or degradation present, they are not chauvinistic, or sexist; the content is not veiled or disguised. On the contrary, the content is overtly present, but handled playfully and nonseriously, frequently presenting sex in a new context. Of course, we cannot rely on a posteriori speculations; these proposed differences should be subject of a separate investigation based on a larger item sample.

Since we see the major difference in the structural basis (and the aspects discussed as covarying attributes of the structure) we do not have collected data (e.g. direct ratings of these attributes) to support these hypotheses so far. It might be worthwhile to collect data along these lines. At least in order to be able to relate the scattered results of the literature to our findings and to enhance the communicability of our findings. However, one has to take into account that these features mostly exist in the mind of the recipient. We have to be careful not to project things into humour which are not there.

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