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TOWARDS A MULTIDIMENSIONAL THEORY OF LAUGHTER CAUSATION AND ITS SOCIAL IMPLICATIONS

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In a paper on humour to the Scottish branch of the BPS in May 1967, R. D. Ryder commenced by stating that 'hilarity is a subject neglected by British psychologists although it still remains a topic for speculation among philosophers and men of letters' and concluded that 'much is still to be understood in this field; funny ha ha remains, on reflection, quite funny peculiar'. It is the aim of this present paper to attempt to initiate fruitful avenues of research to a most complex and empirically barren area of human behaviour. As a starting point, it would seem most desirable to consider and analyse situations and conditions under which the behaviour commonly termed 'laughter' is elicited and, for the moment at least, not labour under a philosophical yoke of definition and speculation as to what constitutes the item 'funny' or determines a humorous experience.

A priori, it would appear that laughter principally occurs under seven mutually exclusive conditions, giving rise to the following forms of laughter: humorous, social, ignorance, anxiety, derision and apologetic laughters and the phenomenon of tickling. This is not an exhaustive list and represents only those laughter situations so far analysed. These seven laughter situations will now be briefly introduced.

Humorous laughter is, of course, by far the most common category and occurs as a behavioural response to humour when something funny is said, seen, heard, felt or otherwise experienced by the respondent. Social laughter can be thought of as a behavioural response serving to integrate the individual within a particular social group. In other words, the individual does not experience the situation as a paradigm of humorous laughter (although he *does* comprehend the situation), yet nevertheless emits laughing responses either directly because other members of this group *are* laughing, or because expectancies exist with respect to his laughter emission by a group member or members. Thus laughter under these circumstances can fulfil a form of homeostatic function, eliminating social and cognitive dissonance by means of strategies towards the acquisition of group acceptance or the maintenance of group loyalty. Social laughter, then, closely corresponds with that of social swearing which also is 'intended to be friendly and a sign of being 'one of the gang'. (Ross, 1960). In this connection it would be interesting to determine whether social laughter, like social swearing, diminishes under social situations involving a medium level of stress.

The third laughter situation, that of ignorance laughter, occurs as a behavioural response aimed at disguising ignorance. This situation is somewhat akin to that of social laughter in that the same social motivational variables may concurrently be operational (i.e. towards group acceptance or maintenance), but in this category the individual *does not* comprehend the humour in a social situation, yet by virtue of certain specific cues recognizes that this event is potentially humorous. The occurrence of laughter is therefore an attempt to camouflage the individual's ignorance in terms of successful decoding so as not to attract undue attention to his lack of insight.

Anxiety laughter can be thought of as a behavioural response in terms of tension release to specific anxiety-provoking situations. This category has probably a very low frequency of occurrence relative to the other laughter situations and rests merely on anecdotal experiences, since it is not at all well-documented. It appears that anxiety laughter can emerge from two distinct sets of circumstances: one being impersonal, while the other can be perceived as somewhat more personally based. The former occurs when a situation of impending doom is thwarted at the eleventh hour, as exemplified in a situation where an airline pilot lands an aircraft safely with only one engine operative and the passengers and crew laugh in relief of almost unbearable tension. The latter case, on the other hand, is assumed to occur in situations most dissonant to its occurrence, i.e. at a relative's

funeral ceremony or at a sterm reprimand, as if the mere gravity or solemnity of the situation is sufficient to elicit the response and thereby reduce the tension. In similar circumstances to these it is common to hear the expression, 'if I don't laugh, I'll only cry', as though there were symptomatic similarities between laughing and crying in humans. Indeed, in both there is laboured inhalation and exhalation, a red dening of the face, tears in the eyes (although in laughter the threshold of tear production appears to be higher than in crying), opening of the mouth and the elicitation, usually, of fairly loud vocal sounds. However, superficially similar symptoms need not necessarily indicate a close relationship between the initiating factors. It is interesting to note in the former anxiety-laughter situation that the tension has its origins external to the individual concerned, whereas in the other case it is largely internal.

Derision laughter again is a very complex category which can take two distinct forms. The first of these is most prevalent in children and is not so much a behavioural response to a humorous situation, but is emitted more in terms of a direct derogation towards an individual who has been involved in an unorthodox act or possesses an unusual physical or behavioural attribute. For example, boys in a playground may laugh at another boy who has lost a fight to a much younger and smaller member of the school, or similarly they may laugh at a boy continually because he is coloured or has a large nose or perhaps because he prefers music to football. Indeed, this laughter situation, which is consistently reinforced on a particular child at a young age, will doubtless have a lasting and detrimental psychological effect. This is not to say that laughter is not emitted in this manner in the adult world and does not carry similar detrimental effects; nevertheless a more subtle and indirect strategy of derision laughter is developed as the child matures. In such a situation the individual will produce a derogatory remark directly (commonly termed a 'sly dig' at somebody) and follow it immediately with a few chuckles. The purpose of the succeeding laughter is quite clear—it serves as an escape route and functions defensively in that it reduces the force of the preceeding passage. Thus if the receiver takes objection to the remark, the sender can easily claim that it was merely in jest. An example of this form of derision laughter could occur with the exclamation, 'I thought all you fellows were anti-establishment!' directed towards a known 'revolutionary' group of students who had just stood when the National Anthem was being played in a theatre.

A similar laughter situation to this, again functioning somewhat defensively but this time reducing the force of some particular *behaviour,* is that of apologetic laughter. This is a behavioural response accompanying a verbal excuse or explanation for a preceding abstruse action, or accompanying an anticipatory excuse for a potentially abstruse succeeding action. Laughter in this form commonly occurs with such expressions as 'I never thought to look there (for it)' or 'I've never done this before' in a strategic attempt to induce the observer to experience the situation as humorous, thus avoiding recognition of the actual naivety of the behaviour.

The final laughter situation in this present taxonomy concerns the phenomenon of tickling, a topic needing little introduction and one that will be discussed more fully later.

From this brief exposition of the seven laughter situations determined so far, it seems apparent that no single causal theory could possibly be adequate to explain all occurrences of laughter, for indeed absolute humour is really only causally involved in the first laughter situation. Nevertheless, workers in this field have attempted to provide an overall theory of laughter as distinct from one solely concerned with humour. Boyle (1968) has reviewed these theses, one of the more salient being that of McDougall termed 'an anecdote to sympathy'. McDougall believed that laughter arose in situations which would be unpleasant except for the laughter itself; indeed the psychoanalytic version is somewhat similar to this view in that laughter is claimed to occur in those situations which provoke anxiety, unless the tension is so intense as to be wholly repressed, in which case nothing comical is at all perceived. An 'autistic thinking' theory postulates that laughter is a temporary escape from the harsh realities of life, while Hobbes, in the 17th century, associated laughter with a kind of derision. A more physiological account describes laughter as an overflow of superfluous nervous energy, while in 1933 the anthropologist, Piddington, favoured a 'compensatory' formulation, stressing that laughter is 'the response which expresses the suitable attitude for members of society to take towards ludicrous situations, its primary function being to prevent any disturbance of the system of social values upon the recognition of which by individuals society depends for its existence'. Although

certain of these theories have relevance to a specific laughter situation, none of them has sufficient power to command a universal causality of laughter, for indeed the mechanisms of social and ignorance laughters have not been recognized.

A tentative explanation of the first category—humorous laughter—will now be presented, incorporating a form of synthesis of the previous views on laughter. Broadly speaking, humorous laughter will be regarded as an overt expression of 'rebellion' to social pressures, codes and institutions. Individuals in probably all civilized cultures are continually active social conformers to an almost infinite system of diverse codes of conduct, including legal codes, occupational constraints, marital-familial ties and moral-ethical restrictions—all of which appear drastically to limit individual freedom, sometimes to an almost insufferable degree. It would not seem implausible that a constant accumulation of frustration in this manner needs to be effectively displaced along some socially harmless channel or channels if society as a whole is to maintain any reasonably adequate level of sanity. Humorous laughter would seem to function perfectly in this respect, and so it would not be surprising to discover that the vast majority of ludicrous experiences, jokes, wit, etc. all involve some occurrence of the socially unacceptable as the crux of their humour. For example, laughter may be elicited as a response to the sight of a clown or a pompous, arrogant dignitary who slips on a banana skin, as this represents a violation of the social code of movement. Similarly, laughter at a pun is elicited since a contradiction of regular socially acceptable semantic usage has occurred. Indeed, it would appear that the recipe for humour merely requires the subtle presentation of a novel, socially uncharacteristic event, which usually entails no detrimental, repercussions. This process of laughing at the unconventional provides the individual with the vehicle for attaining 'revenge' on all the restrictions and limitations which society and civilization have imposed on him and concomitantly affording him a socially insignificant outlet for its expression. Of course, by virtue of the existence of derision laughter, it has been realized that not all laughter responses are socially harmless, but can function as an aggressive strategy towards particular individuals.

If the notion that laughter at humour is an overt expression of 'rebellion' against social norms is accepted, why then is laughter not emitted when sufficient frustration tension to these norms has accumulated? In other words, why do individuals need a stimulus situation (the joke or humorous experience) to elicit a laughter response? The reason may lie in the fact that frustration tension disseminated only when it has attained the individual threshold level for release might occur at socially inappropriate moments and thus cause unnecessary havoc to social interactions and communication. Another possibility is that the individual may become habituated to this amount of tension in such a way that a greater intensity of stress is needed to attain the threshold level, which after a period of time would be calibrated so high that the tension required to correspond to this level would be of too great a magnitude to be channelled away in a socially harmless manner. However, the elimination of frustration to social norms by humorous stimuli is likely to be so frequent as to keep the stress level at a minimum and also, as previously stated, afford great pleasure and satisfaction in laughing at the socially unacceptable. Thus laughter at the unconventional in terms of frequent humorous stimulation can clearly be seen to be a socially tidy and fairly reliable mechanism for an expression of contempt towards society's constant pressures of conformity. It is interesting to note that Piddington similarly claimed that laughter at the comical developed 'when man came to live in society'.

Although a humorous stimulation is necessarily a prerequisite for laughter, this same stimulus, if introduced again within a short period of time, is less likely to elicit the same intensity of reaction. In more general terms, why do jokes fall flat a second time, and why do we rarely see a comedy film again? A possibility lies in the fact that humorous laughter is contingent on the stimulus presentation of a socially unconventional episode; it may be that, after the initial presentation, what was once unconventional can never really be quite so again. Another example of this phenomenon is often related to attitudes towards comedy series on television, where succeeding episodes of a new series of programmes are never thought as funny as was the first. For instance, in a medical comedy series, within the confines of this ludicrous situation, one becomes at least partially accustomed to witnessing bizarre operations and seeing students hacking away at a patient unmethodically after the initial production. Likewise with peculiar personalities, characters and behaviours.

While it is usually the case that humorous

stimuli succeed each other at a fairly frequent rate, it is not uncommon for an individual, particularly in socially isolated occupations, not to have encountered this form of stimulation for a long period of time. On the basis of the present theory, it could be suggested that for the individual who has incurred a long interval of laughter deprivation he will appreciate a particular humorous situation of joke more so than if this experience had just been preceded by another. The rationale, of course, is that the individual has more frustration towards social norms to dispel and thus is disposed towards a lower appreciation threshold for the humorous. Commercially speaking, then, it would be somewhat disadvantageous for a film or television company to present two consecutive comedy films within the space of an entertainment sequence. Nevertheless, an alternative hypothesis, although less likely, is feasible. It could be suggested that an individual has to experience a 'warming up' effect for hilarity—'to be put in the mood'—before full humorous potential is realized. Therefore if the individual has to become attuned to humour, in the above instance the opposite effect should be expected—that the joke would be assessed as funnier if it *had* been preceded by another.

As all individuals in any culture are pressurized by many of the same codes of social conduct, it is of little wonder that what is found humorous by one person has a high degree of probability of being found humorous by another. Nevertheless, there are great individual differences in the perception of the socially acceptable-unacceptable, thereby incurring individual variation in the appreciation of the comical. Indeed, cultural differences in humour can be explained away in a like manner since obviously what is socially acceptable in culture *A* need not necessarily be acceptable in culture *B*. On the basis of this suggestion, then, it could be hypothesized that an 'uncivilized' African bushman, who is relatively less restricted to social conventions and pressures of modern living as in our own cultures, should laugh a good deal less than ourselves. However, caution should be observed, as it would be extremely dubious to rank societies/cultures in hierarchical terms by means of intensity of social conventions since our own centri-cultural bias might not be capable of detecting their own subtle, perhaps complexly structured traditions. Likewise, it could also be postulated that a monk or nun whose highly disciplined existence should induce him or her to laugh at a given opportunity with a greater magnitude and intensity than most members of the ordinary populace in exactly the same circumstances and under the same conditions. Yet again, what appears a life of intolerable religious hardships to outsiders of the order may be a life of utter joy and peaceful quiescence for them. But on the basis of the above theory, it still could be argued with some assurance that those individuals who appear to us to be continually jocular and frivolously effervescent are those who bear a great burden of untold pressures and problems.

Not only do individuals and cultures vary in their social traditions, but also within a particular temporal sequence, and through a continual process of social change what was regarded in one era as totally immoral is commonplace in another. To a large extent this explains why a comedy film enjoyed as hilarious 30 or perhaps only five years ago is thought trivial, naive and ridiculous in the present day. It would therefore follow that a time of tremendous social flux, when neither one maxim nor another is accepted or rejected, humour will ascend to a new and temporary zenith. Indeed, it was observed by Dobrée (1966) that 'periods of great comedy are usually those when values are changing'. In accord with the previous notions, experimentally induced social pressures could be introduced into the laboratory situation and their effects noted.

Furthermore, it could be suggested that, after humorous stimulation (watching a comedy film or listening to a series of jokes) has elicited laughter, this reaction somehow lowers the individual tolerance level to more willingly accepting another 'dose' of pressures towards conformity behaviour, and simultaneously tends to make the individual more sympathetic towards others' problems than he would otherwise have been. This is precisely the rationale involved in explaining the tactics of apologetic laughter. It is possible that the internally based motivation individuals experience in seeking humorous stimulation—such as looking for a comedy film or show—might fulfil a homeostatic function in dispelling frustration to social norms and making *them* more socially acceptable. It is common to discover jokes used initially in a serious oration, as though making people laugh will induce them to be more favourably disposed towards the speaker. This would also explain the behaviour of the compulsive joke-teller, who is seeking approval by providing himself as a source of humorous stimulation, and

perhaps feels somewhat insecure or unconfident as to the desirability or social acceptability of his real personality. An interesting example of this phenomenon is found in those American comedians whose humour is based principally on depicting racialism, ultimately striving in an attempt to make the situation of ethnicity more favourably perceived. If laughter can be viewed as lowering the tolerance level to a greater ease in acceptability of social norms, and also has a feedback effect of looking more favourably on the stimulus source, an empirical investigation needs to follow which may be of some commercial value. How much, for instance, is it necessary for individuals to laugh in order to gain this hypothesized lowering of tolerance level? Is it merely a positive function or is a plateau attained after a specific and appreciable magnitude of stimulation, in which case further laughter is redundant in this respect?

Wober (1968), in presenting a theory towards the study of aesthetics, developed the concept of phrasing in aesthetic units, termed 'time-spans', the preferential appreciation of these various time-spans depending on individual cognitive skills. Wober categorized aesthetic styles in a threefold manner, adequately exemplified through the medium of music. The 'pop' time-span was to be thought of as 'small phrases, each with little structural complexity, with frequent changes or repetition'—Western 'beat' music being the most obvious illustration with its relatively short phrases. The second style was termed 'lyrical', which comprised 'long phrases within which little happens', the famous musical exponents of this style probably being the old classical masters, Mozart and Beethoven, who used to great effect melodies 'spun out over relatively long time-spans'. Thirdly, an unlabelled category where 'the length of phrasing may be unimportant compared with the presence in each phrase of a complex inner structure' —traditional African music provides the norm with its highly complex rhythmic qualities. Wober claimed that these three styles of phrasing transgressed all aesthetic modes, including those of literature and poetry, art, sculpture and architecture, while even humour was cursorily mentioned. However, it would seem more convenient to designate humorous styles along a continuum of short to long time-spans only. In Koestler's *The Act of Creation* the joke of humorous experience was analysed, while being the model of a creative act, in terms of two 'bisociative events', these roughly corresponding to the 'setting of the scene' and the 'punchline'. The comparison of these bisociative events forms the apex of the humorous stimulus and constitutes the component units of the time-span concept in this context. Thus the shortest possible time-span unit (or phrasing of bisociative events) would be the simultaneous occurrence of these bisociative events. The most salient example of such short time-span humour is afforded in slapstick comedy by means of the presentation of the pie and its subsequent contact with the eye—this form of humour accords well with Wober's concept of the 'pop' phrase. It has often been declared that sarcasm is the lowest form of wit, and this notion appears somewhat nearer to validation within the framework of the time- span concept, since, like slapstick comedy, sarcasm also depends for its humour on the concurrence of bisociative events. Now the opposing pole of the time-span continuum employs, of course, the longest time-span phrases. One of the best examples of this type of humour is satire, where the premier bisociative event has usually occurred some hours, days or even weeks before the exposition of the other. Similarly, the pun is an example of long time-span phrasing, since the bisociative events are two semantic aspects of one phonetic item generally adopted at different points in time with their comparison or contrast thus providing the source of humour. Indeed, in conjunction with vocal-behavioural impersonations, it seems that puns and satirical humour provide the most prominent exhibits of long time-span humorous stimulation. The difference, in essence then, between short and long time-span humour is that the former sets the 'scene' itself (i.e. the premier bisociative event is actually present within the confines of the joke or experience), while with respect to the latter the comparison or contrast of bisociative patterns requires the foreknowledge or recall of imagery of an event or events not directly specified.

Witkin *et al.* (1962) have shown that styles of approach to perceived surroundings differ among individuals, and have described a style termed 'field independence' or 'high differentiation', where the individual employs a highly analytical approach to perceived materials. This style in perception is indicated among individuals who can maintain attention to particular parts of a perceived world no matter how confusing or 'embedded' are the surroundings. The opposite of this analytical style was termed 'field dependence'. Now

Wober (1968) claimed that 'highly individuated people may have the mental equipment to appreciate lyrical and also complex aesthetic material, visual or auditory'. It would seem to follow, then, that the field-dependent individual, although able to appreciate the longer time-spans characteristic of satirical and complex humour, would nevertheless prefer the time-spans of humorous laughter situations to be of a much shorter duration, since the differentiation of bisociative events is conceptually much easier.

It is possible that if social class differences are correlated with cognitive and perceptual styles, then social-class preferences to different time-spans in humour will emerge, i.e. the working class will prefer slapstick and comic-strip humour, while the middle-class will have a relative preference for long time-span jokes. Although the work of Anastasi (1958) and Bloom *et al.* (1965) has suggested social, occupational and economic status measures are related to cognitive functioning in many areas, Witkin and his associates in 1954, and more recently Karp *et al.* (1969) have found little correspondence between field independence and indices of social class. Nevertheless, the linkage between cognitive style and social determinants seems so strong as to deserve further exploration. Indeed, Bernstein (1958) claimed that the social background of the working class facilitated 'a mode of perceiving and feeling characterized by a sensitivity to the content rather than to the structure of objects'. Sensitivity to structure was defined as a function of a learned ability to respond to an object perceived and defined in terms of a matrix of relationships. Sensitivity to content, on the other hand, was conceived as a function of a learned ability to respond to the boundaries of an object rather than the matrix of relationships and interrelationships in which it stands with other objects. Clearly, Bernstein's conceptualization of the middle-class's sensitivity to structure must be very closely related to that of high psychological differentiation. Also, Robinson & Creed (1968), investigating ability to discriminate and differentiate complex differences in pictorial design among six-year-old girls, found that 'elaborate code' subjects (a linguistic code characteristic of the middle classes) did significantly better than their 'restricted code' (characteristic of the working classes) counterparts. In a study of different styles of conceptual organization in 16- and 17-year-old schoolchildren, Cohen (1968) found that tests administered to working-class subjects revealed essentially a 'relational' as opposed to an 'analytical' style of conceptualization. Obviously further research is needed in this area, and one of us (H.G.) is currently investigating the relationship between type of linguistic code and cognitive style.

Corroboration of the notion that long time-span jokes are appreciated most by highly differentiated individuals comes from the work of Eysenck, who in 1942 found that introverts seem to appreciate complexity in humour, whereas extraverts prefer their jokes to be uncomplicated. Wober (1967) has suggested that the lowly differentiated individual is 'seemingly more like the extravert than the introvert of Eysenck's typology'; furthermore, limited evidence from the literature seems to substantiate this claim; especially dominant in this respect is the research into eye contact. Moreover, it is interesting to note that social-class differences have been related to the personality dimension of introversion-extraversion. Eysenck & Eysenck (1963) cited evidence that extraversion was a unitary trait resulting from two factors: sociability and impulsiveness. A great deal of work in the 1940s and early 1950s has linked impulse renunciation and deferred gratification to the middle-class population rather than their working-class peers, and Eysenck (1960) and Eysenck & Eysenck (1969) showed conclusively that middle-class subjects are more introverted than working-class subjects. Confirmation of the notion that working-class individuals as a rule do prefer shorter time-span jokes and less complex humour (the preparation of word length controlled lists of long and short time-span jokes would seem to be straightforward) is surely of enormous value to the entertainment and advertising industries in compiling various media for different sections of a community.

Although it is likely that children and younger adolescents prefer humour with shorter time-span involvements because of their lack of development in cognitive differentiation (which has been shown not to attain full maturity until about the age of 17), other factors may also be involved in this case. For instance, it is quite often true that long time intervals can elapse between the two bisociative events of a long time-span joke. Cohen (1964) reported that, to a child, a day can seem like an adult week, and a week like an adult year; in other words, short periods of time are vastly elongated. Thus if two bisociative events are to be compared in the exposition of a humorous experience, then obviously the

shorter the interval between them, the easier the comparison is made.

An acute problem does arise, however, when considering laughter as an outlet for frustration induced by social and individual constraints; for man is not the only social species in existence. How then do other creatures disseminate their frustrations from social pressures without disruption of the group's *status quo*? An obvious answer to this pertinent question stems from their aggressive instincts in that satiating their consummatory deficiencies by hunting and slaying their prey may in turn quell their tendencies of frustration from conformity to gregarious pressures. This would not explain, however, tension release in the large number of gregarious herbivores. An example of frustration release may be found in the domestic dog. It is quite common to hear the animal continue to bark defiantly long after the auditory stimulus which had aroused it has disappeared—as though, anthropomorphically speaking, he is allowing his voice to be heard with good excuse and thereby establishing his individuality.

The relationship between smiling and laughing has often caused confusion and many of the early workers in this field, such as Hall & Allin (1897), considered the two modes of responding to have entirely separate origins. In true Darwinian fashion they believed that the smile represented the first stage of opening the mouth to receive food, and so has evolved as a facial expression of the pleasure received from this event. In laughing, however, the teeth are highlighted, as are the teeth of dogs when they snarl; thus laughter could be associated with threat, not pleasure. Yet it is the contention of the present authors that adult (and baby) laughter has evolved, as has human smiling, from the more animal smile—for smiling in most situations, besides its welcoming greeting and parting attributes, functions as a low intensity laughter response. Lorenz (1967) shows how a smile in various animals other than humans indicates submission, thus serving as a defence mechanism. Now a consideration of social, ignorance and apologetic laughter situations, together with the more adult derision laughter, yields the conclusion that they too are defensive in character. Even humorous laughter, which has probably evolved since man became a civilized beast, also appears to hold a defensive function for society as a whole. Even the more childlike derision laughter and that of anxiety laughter may possibly be thought of as being physiologically defensive. It seems very likely that the smile serves different functions as the child matures, and so the ontogenetic development of the laughter syndrome is a field well worthy of study. When, for example, does a child first exhibit ignorance laughter? There is the possibility that the 'abnormal' laughter of many schizophrenics and others who laugh at the seemingly bizarre are not eliciting humorous laughter but may be experiencing perhaps an anxiety laughter situation, and therefore in these instances the regular development of the laughter syndrome has somewhere been distorted.

While humorous laughter can be considered an overt 'rebellion' against social pressures, social laughter itself can be viewed rather as an act towards social conformity, for such behaviour complies well with Willis's (1965) definition of conformity as 'behaviour intended to fulfil normative group expectations as these expectations are perceived by the individual'. Yet to term social laughter an expression of social conformity seems to pose a problem when considering the work of Crutchfield (1955, 1959) determining the personality variables associated with a degree of group task-orientated conformity. Crutchfield found that social conformers were lacking on measures of intellectual effectiveness, ego strength, leadership and maturity in social relationships; in other words, such individuals displayed what would be commonly termed a 'weak' personality. Further data of Barron (1953) Di Vesta (1958) and Tuddenham (1958) support this work. Surely most individuals have experienced themselves in this type of laughter situation in order to appease group norms: can all people therefore be regarded as having a 'weak' personality or character? This, of course, is unfeasible and is borne out in an experiment of Young & Frye (1966), who showed that, when jokes were administered in a group situation, the subjects' perception of a confederate laughing facilitated their own responsiveness to humour and its assessment.

This conceptual dissonance has been aroused because of a lack of differentiation between two aspects of conformity presented, or rather with the strategies involved in them. It is necessary to introduce a term used by Jones (1965), namely that of 'ingratiation'. This referent applies to those 'strategic behaviours... designed to influence a particular other person concerning the attractiveness of one's personal qualities'. To adopt Jones's terminology further, the behaviour of the conforming subject in

an Asch (1956) or Crutchfield experimental setting is an example of one kind of 'dependence-confirming tactic' or strategy. In this situation, although the compliance affords a certain reward value, it is at the expense of increasing dependence on the group. In contrast, the behaviour relevant to the social-laughter paradigm is 'dependence-reducing', and conformity here is used as a tactic of ingratiation. Indeed, this particular laughter paradigm should normally fulfil one of the preconditions for ingratiation in that status differences are involved which 'usually imply asymetrical power'. Such a tactic, to use Jones's words, operates on the principle that 'as the dependent person becomes more attractive' (by responding with overt appreciation to the group's humour) 'the powerful person cannot punish him without greater cost to himself'. In operational terms the strategy is extremely complex, for the same 'situational factors that increase one person's desire to be found attractive might alert... the 'target'... person to the likelihood of tactical behaviour'. It could, however, be suggested that the third laughter situation, that of ignorance laughter, does fulfil the necessary conditions for a dependency-confirming strategy in almost all circumstances of its occurrence, and this then would be a more common tactic of group-orientated behaviour in social situations for the 'weaker' personality individual.

To return now to the problem of tickling—a source of embarrassment to all theorists of humour and laughter since ancient times. Although Flugel (see Lindzey, 1956) advocated serious and detailed research into this aspect of behaviour, unfortunately little has materialized to pave the way to a newer understanding of the subject. It was thought very dubious to consider tickling within the framework of the humorous laughter situation, which included laughter produced as a direct response to something funny being heard, seen, said or *felt*. It seemed more appropriate to categorize it separately, for, as stated earlier, the difficulty in previous attempts at providing a theory of laughter has been thinking in terms of laughter causation in all circumstances as fundamentally unitary. A frequent explanation for tickling is that laughter expresses the ambiguous, partly masochistic experience of the individual being tickled, and it thereby corresponds closely to the common assumption that it is sexual in origin and function. The classical explanation is that the ticklish parts are those most likely to be attacked in hand-to-hand fighting, and so laughter became attached to this attack in the course of evolution when close contact fighting had become a form of play. It seems dubious that there would have been sufficient time in the evolutionary history of man for such seemingly trivial behaviour as laughter to become attached to tickling. If the behaviour really is trivial, the selective forces tending to increase the trait in the population must have been very small and would have taken a very long time to reach fixation (as it appears to have done), not discounting the obvious objection that the soles of the feet are not readily accessible in combat. However, aspects of this classical theory do take on a greater significance when it is recalled that the whole complex of laughter seems to be intricately bound up with defence mechanisms. It is most unlikely that a non-verbal, submissive gesture such as the mere smile is able to command attention in deterring an aggressor from continuing tactile stimulation of the irritable parts. A sign of far greater intensity indicating submission is necessary to interrupt the attack—the laugh (involving the vocal organs) seems to fill this role adequately. We are suggesting then that the origins of the tickle/laugh association occurred before man evolved as a separate species. The argument that there was not enough time for the association to evolve therefore does not apply.

On a more general basis, research is obviously necessary into the relationship between susceptibility to humour and its effect on social interactions. If it is shown that a preference for long time-spans enables the individual to perceive relatively more situations as humorous, within certain defined limits, this may, at least on the basis of the above theory, allow him greater social adjustment to normal and irregular situations alike. It would seem, therefore, of great educational advantage to teach children to appreciate long time-span humour. Indeed, an educational, 'therapeutic' programme has been introduced into a few American schools by Witkin's associates with the specific aim of inducing otherwise lowly differentiated children towards greater 'field independence'. It would be interesting to determine, as has been suggested earlier, whether such a programme would concomitantly enable them to appreciate more genuinely aesthetic and humorous styles of longer time-spans.

In summary, the laughter response is not merely a reaction to a universal or generalized single causal factor, but to a matrix of, at the minimum, seven such factors. Nevertheless, these situations can be interrelated in evo-

lutionary terms by virtue of their defensive functions and by the role of social conformity to social pressures and norms, codes and institutions permeating their structure. The field of humour has been related to styles of aesthetic appreciation and individual ability in psychological differentiation. It is to be hoped that this relatively new structuring of the field of humour and laughter will stimulate empirical interest into the array of research problems suggested.

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