Rivista Italiana di Studi sull'Umorismo
RISU, Volume 4, Issue 2, Giugno 2021, pp. 202 - 214
ISSN 2611-0970
www.risu.biz

A Syndromic Approach to Sense of Humour Disorders

[Un approccio sindromico ai disturbi del senso dell'umorismo]

Alyona Ivanova[1,2]

[1]*Pirogov Russian National Research Medical University, Moscow;* [2] *Mental Health Research Center, Moscow*
E-mail: ivalenka13@gmail.com

Original article
Ricevuto il 1 Luglio 2021; accettato il 27 Luglio 2021

ABSTRACT

EN The article below presents psychological syndromic analysis, traditional for Russian clinical psychology, as a useful methodology to study sense of humour disorders in mental patients. The sense of humour, like other mental functions, never collapses completely, but rather some of its components may become impaired, while others remain intact, and some may become compensatorily enhanced. The syndromic structure involves primary and secondary disorders, which develop due to different psychological mechanisms. Based on the literature covering both clinical data and general humour research, we propose a model of sense of humour components, which may themselves become impaired relatively independently from each other, making up the system of a psychological syndrome: humour perception, humour production, and sense of humour as a personality trait, which in turn include a number of elements. Examined altogether, these components create a holistic picture of a sense of humour disorder in a particular patient or clinical group. The proposed approach justifies humour as a useful tool in both clinical diagnostics and intervention.

Parole chiave: humour, laughter, humour disorder, syndrome, syndromic approach, Russian clinical psychology, mental disorder

IT Il seguente articolo presenta un'analisi sindromica psicologica, tradizionale per la psicologia clinica russa, come metodologia utile per studiare i disturbi del senso dell'umorismo nei pazienti affetti da disturbi mentali. Il senso dell'umorismo, come altre funzioni mentali, non crolla mai completamente, ma alcuni dei suoi componenti possono essere compromessi mentre altri possono rimanere invariati e alcuni possono migliorare. La struttura psicopatologica può manifestarsi con disturbi primari e secondari, che si sviluppano a causa di diversi meccanismi psicologici. Partendo dalla letteratura che riguarda sia i dati clinici che la ricerca sul senso dell'umorismo generale, proponiamo un modello delle componenti dell'umorismo, che possono essere alterate in modo relativamente indipendente l'una dall'altra, andando a costituire il sistema di una sindrome psicologica: la percezion e la produzione dell'umorismo e senso dell'umorismo come tratto della personalità, i quali a loro volta includono una serie di elementi. Esaminate complessivamente, queste componenti creano un quadro olistico di un disturbo del senso dell'umorismo in un particolare paziente o gruppo clinico. L'approccio proposto giustifica l'umorismo come strumento utile, sia nella diagnosi clinica che nell'intervento.

Keywords: senso dell'umorismo, risata, disturbo del senso dell'umorismo, sindrome, approccio sindromico, psicologia clinica russa, disturbo mentale

1. Introduction

Humour research in clinical practice has intensified during recent decades (Gremigni 2012). However, the general methodology for humour research was elaborated within the framework of the "normal" sense of humour. The concepts of the normal and the pathological, and the boundaries between the two, have a long history of discussion and debate in clinical psychology. Nonetheless, many modern studies examine "clinical" aspects of the sense of humour using nonclinical samples in officially "healthy" people. Insofar as one of the key criteria of psychiatric pathology is social effectiveness (e.g. Telles-Correia et al. 2018), this approach seems highly debatable, especially when these data re directly compared with those obtained from inpatients. Moreover, in this situation, clinical data on sense of humour disorders exist as a modest additional field to the general body of knowledge on humour. On the other hand, this field could provide much more fundamental knowledge for the general understanding of how humour functions, based on data about its impairment.

Clinical data on sense of humour disorders may be analysed using two main approaches: quantitative and qualitative (Ivanova 2007, Forabosco 2007). The former predominated in the second part of the 20th century and stressed the decrease in sense of humour in patients with mental disorders. Some ideas from the latter approach may have also been developed in the last century (Richman 1985 - cited by Forabosco 2007), but it began to dominate only in the 2000s and beyond. The qualitative approach posits that different components of the sense of humour may become impaired under different mental disorders (Luk 1977, 1982, Gremigni 2012). Thus, as Giovannantonio Forabosco (2007) summarized, the sense of humour generally "decreases" under depression, "increases" under mania and "changes" under schizophrenia. This approach has valuable practical implications for differential diagnostics.

These ideas are consistent with the syndromic approach, traditional for Russian clinical psychology, which was based on the methodological ideas of Soviet scholars Lev Vygotsky, Alexander Luria, and Bluma Zeigarnik among others, and which corresponds well with the modern shift from a diagnosis-centred paradigm towards a bio-psycho-social and person-centred, humanistic approach in medicine (Zinchenko, Pervichko 2013a,b). The Person-centred Integrative Diagnosis (PID) model (Mezzich et al. 2010) regards the diagnosis of a person as the totality of that person's health, in both its negative and positive aspects, including a number of psychological variables, such as a subjective pattern of disease, defence mechanisms, coping processes, quality of life etc.

Russian psychology is known for the special attention it pays to methodological issues and theory. Psychological syndromic analysis was introduced by Lev Vygotsky as part of his Cultural Historical Approach as a proper method for studying higher mental functions, and it was developed further and acquired its theoretical and empirical foundation in the works of Alexander Luria, Bluma Zeigarnik, and Yuri Polyakov among others (Zinchenko, Pervichko 2012). The principles of syndromic analysis are still regarded as the most essential for the methodology of Russian clinical psychology (the Vygotsky–Luria–Zeigarnik school). Vygotsky and Luria described a syndrome as a hierarchical system, in which they distinguished primary and secondary symptoms (Vygotsky 1993; Luria 1973). The former are closely associated with the illness itself, whereas the latter are purely psychological phenomena. The psychological syndrome presents an open self-developing system, where primary and secondary symptoms are constantly evolving, and their roles and place in the syndrome, and the cause-and-effect relationships between them, are changeable.

The key ideas of the syndromic analysis of higher mental function are as follows: 1) the same symptom may reflect different clinical syndromes, therefore, it is important to discern the psychological mechanisms of the impairment, and as such, qualitative analysis of the observed phenomena is more

important than quantitative analysis; 2) syndromic analysis includes the examination of the impaired components as well as those which are intact; 3) the structure of syndrom involves primary and secondary disorders (Vygotsky 1993, Luria 1973, Zeigarnik 1986, Nikolaeva 2011).

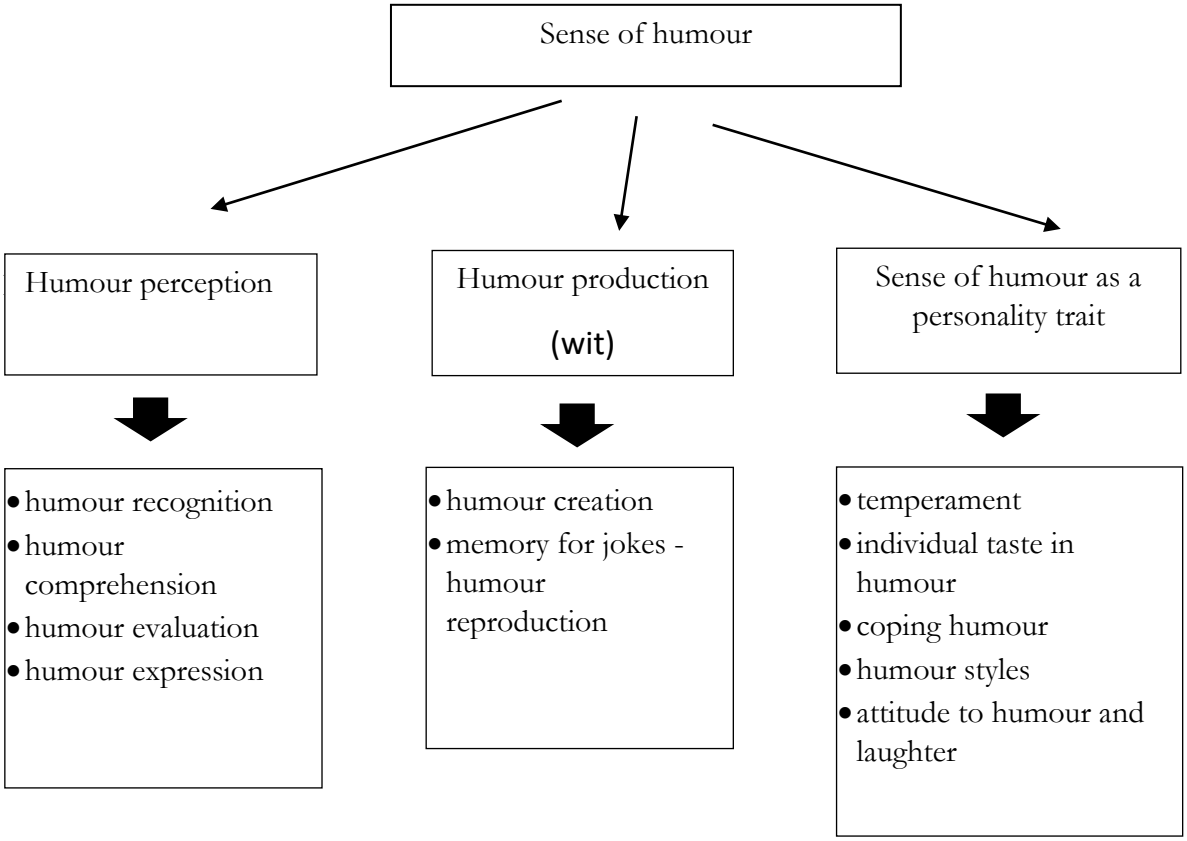
The aim of this article is to apply psychological syndromic analysis to sense of humour disorders in mental patients, to systematize the existing clinical knowledge on it from this standpoint, and to demonstrate the usefulness of syndromic analysis for both clinical practice and general humour research. Many studies have confirmed the existence of humour disorders in mental patients (Forabosco 2007, Gremigni 2012). Nonetheless, this idea is not just insufficient for diagnostics, but it may also contradict some forms of intervention. Various types of humour-based interventions are used for mental patients today: hospital clowning (Dionigi and Canestrari 2016), stand-up training (David Granirer http://standupformentalhealth.com), humour training programmes, and humour-based psychotherapy (Gelkopf 2011, van der Wal, Kok 2019) etc. If we consider that people with mental disorders experience a humour deficiency, then all these practices are hardly likely to succeed. As such, there is a contradiction between humour research and practice which, we believe, the syndromic approach could help to resolve.

2. The structure of Sense of humour

The sense of humour is a complex, multidimensional mental function, incorporating numerous specific components, abilities and characteristics, which is why the syndromic approach may prove useful for the analysis of its disorders. Based on general humour research, and taking into account clinical data, we may distinguish a number of components of the sense of humour which may become impaired or altered relatively individually in relation to different mental disorders. Below we propose a version of the sense of humour's structure based on existing clinical data (see Fig. 1).

Firstly, one can divide the sense of humour into humour perception and humour production (Luk 1977, Martin 2007). Secondly, the sense of humour may be regarded as a personality trait. These major components, in turn, include smaller categories. As such, humour perception includes humour recognition, humour comprehension (cognitive and affective), humour evaluation (cognitive and affective – the emotion of joy (Martin 2007) or exhilaration (Ruch 1993)), and humour expression (smiling, laughter). Wit as the ability to create humour is a relatively less elaborated construct, but one can at least make the distinction between a real creative process and the ability to remember and reproduce jokes. The sense of humour as a personality trait is based on temperamental characteristics (Ruch and Carrell 1998). It includes individual taste in humour (preferences for certain kinds or forms of humour), a tendency to use humour as a coping mechanism, humour styles, and attitude to humour and laughter (gelotophobia, gelotophilia and katagelasticism). Obviously, there is no small number of sense of humour models, and one could propose more components. Nevertheless, the components above have either been distinguished and described in clinical research, or stem from general knowledge in clinical psychology, which is why this model may be useful as a working structure of the sense of humour. Below we provide descriptions and empirical data on the components based on existing literature and our own studies. Some of them have been investigated more thoroughly, others much less so, and in general there are many gaps.

Figure 1. *A model of the sense of humour structure*



3. Humour perception

Humour recognition. The simplest component of humour perception is humour recognition, which means the ability to distinguish humorous information from serious information. Humour recognition does not necessarily mean complete understanding of a joke, or of its subjective funniness. This component is one of the most essential in social communication, and it is disrupted mostly in patients with schizophrenia, along with an increase in cognitive disorders (Polimeni and Reiss 2006, 2010, Ivanova et al. 2008), so that one could suggest it to be a primary disorder. At the same time, patients with affective disorders and a schizotypal personality, not to mention less severe disorders, do recognize conventional humour, i.e. jokes assessed as humorous by mentally healthy individuals (Ivanova et al. 2008).

Humour comprehension is much more complicated in comparison to humour recognition. Based on the general understanding of figurative meaning, it includes the ability to understand not only a joke's superficial plot (for instance, the ambiguity of a word), but also more abstract levels of its meaning, such as ideological or philosophical ideas in the joke, social context (references to other jokes), the current situation of interaction etc., which require emotions, motives, and personality, in addition to pure thinking ability. Robert S. Wyer and James E. Collins (1992) wrote about cognitive elaboration, referring to all the associations within the joke, including visual images of its characters and events, ideas about the joke-teller's motivation etc. They claimed that cognitive elaboration may either increase or decrease the humorous effect.

Diminished humour comprehension has been found in patients with schizophrenia (Marjoram et al. 2005), which the authors partly explained by their impaired mentalization ability (ToM). Nonetheless, compared to healthy control subjects, the patients had a poorer understanding of even physical jokes which did not involve much mentalization. One could hypothesize that the lack of understanding of humour in these patients may also be secondary to the simpler ability of humour recognition, which is also impaired in them. Olga Scherbakova (2009) distinguished between cognitive and affective components of humour comprehension. She described five levels of cognitive comprehension: from fragmentary pseudo-comprehension (when one is not able to unite different fragments of a joke, but rather finds its isolated elements to be funny, e.g. a funny word) to complete comprehension (when one is able to provide complete and accurate interpretation of a joke on both concrete and abstract levels, and one's subjective projections do not distort its meaning). She also distinguished three levels of affective humour comprehension: from complete emotional distancing from the characters in the joke, to the opposite, a complete inability to distinguish between their states and one's own, via a complete understanding based on the ability to maintain voluntarily controlled partial identification with the characters. Similar ideas were described in our early study, which revealed a tendency to identify with the character of a joke who is being mocked (Ivanova et al. 2008).

Empirical study has shown that both the cognitive and emotional components of humour comprehension are impaired in patients with schizophrenia and affective disorders (Scherbakova et al. 2018; Ivanova et al. 2018). Interestingly, these studies also revealed that healthy people do not always reach complete humour comprehension, although they rarely demonstrate the lowest levels. Nonetheless, in healthy individuals cognitive and affective understanding mutually compensate for one another, whereas in mental patients cognitive and affective misunderstanding instead each have a negative impact on the other.

Naturally, humour comprehension may be primarily restricted by intellectual abilities. Although this area has yet to be sufficiently studied, there are at least two important factors relating to people with intellectual disabilities: firstly, they may experience difficulties in humour comprehension (particularly in regard to non-literal humour like sarcasm and irony, or they often rely on gestures), and secondly, they do understand and appreciate various types of humour (Chadwick and Platt 2018).

Humour evaluation as a separate component has not been particularly well studied as such, insofar as it is hard to distinguish it empirically from humour comprehension. At the same time, we would argue that it merits being analysed more deeply, since joke assessments are widely used in humour research. For example, one could hypothesize that mentally ill people may tend to underestimate or overestimate the inherent funniness of jokes regardless of their ability to understand them, either because of a high social desirability to "fit in", or because of a low emotional state. In such cases, humour comprehension may paradoxically distort secondarily to humour evaluation.

Humour expression, in the form of smiles and laughter, is closely connected to emotional expression in general, which refers to an extensive field of research in clinical psychology. With regard to humour, empirical studies have shown that laughter decreases in patients with depression (Ivanova et al. 2008, Fonzi et al. 2010) and schizophrenia (Ivanova et al. 2008, Volovik et al. 2021). This decrease may not necessarily be associated with lower humour comprehension or subjective evaluation of jokes. Alexander Luk (1977; 1982) suggested that schizophrenic patients have a lower laughter expression due to flat emotions and insufficient emotional involvement. It is also important to note that this lower expression may be in part related to the side effects of pharmacological treatment.

Common sense would dictate that laughter is naturally associated with a high subjective evaluation of humour. Indeed, empirical data confirms some degree of correlation between the two, although the

correlation is not that high (Martin 2007). Moreover, in patients with schizophrenia and affective disease, this connection is significantly lower (Ivanova 2007). The interrelations between disorders in humour comprehension, humour evaluation and humour expression provide an intriguing field for future research.

4. Sense of humour as a personality trait

The widest category is sense of humour impairment as a personality disorder. Generally speaking, scholars associate higher levels of sense of humour with a healthier personality and greater psychological well-being (Kuiper et al. 1998). Like other personality traits, the sense of humour has also been investigated using a psychometric approach. Within this methodology, the validity of scales is always questionable, especially because the sense of humour has extremely high social desirability. Nonetheless, even within this approach it has been shown that humour in psychiatric patients is not impaired completely, but rather some of its components are impaired, while others may be better preserved (Kuiper et al. 1998). Within the *temperamental approach*, three basic components are distinct: the traits and respective states of cheerfulness, seriousness, and bad mood (Ruch et al. 1997, Hofmann et al. 2018). The first makes it easier for a person to become amused, while the two latter make it more difficult and more rare. Although there is no essential empirical clinical data in this field as yet, one could suggest a high impact on a temperamental basis to the sense of humour of mental patients. Experimental studies have typically linked negative mood states, observed under the influence of depression or social anxiety, with humour perception (Berger et al. 2021); some scholars tend also to explain humour deficit in schizophrenic patients by citing depressive symptoms (Mäkinen et al. 2008). The temperamental approach may provide a basis for understanding the primary sense of humour deficit.

Individual taste in humour. Early data has suggested a change in the sense of humour of patients with schizophrenia, unlike with depressive or manic patients, in whom it simply decreases or increases respectively (Forabosco 2007). Evidently, when speaking of individual taste in humour, we could suggest such a change under various mental disorders, including depression. Individual taste with regard to humour perception may be analysed through the preferable cognitive mechanisms of jokes, the type (form) of humour, or the topic of humour. For example, in our early study (Ivanova et al. 2008) we used Luk's (1977) classification of cognitive mechanisms, and we found that patients with schizophrenia laughed significantly more at jokes based on paradox, and that they tended to give a higher assessment to jokes based on comparison by latent attribute (Ivanova et al. 2008, 2014). Luk described paradox as a cognitive mechanism in jokes revealing some deep meaning in seemingly meaningless words. Here we are reminded about stilted speech, typical for schizophrenia (Zeigarnik 1986, Peralta et al. 1992). In turn, comparison by latent attribute reminds us of overinclusive thinking (e.g. Hawks and Payne 1972, Payne et al. 2018) or, as it was termed in Russian psychology, thought distortion (Zeigarnik, 1986, Nikolaeva 2011). Evidently, the specific schizotypal sense of humour described by clinicians is based mostly on comparison by latent attribute and paradox.

In turn, patients with affective disease laughed significantly more often at jokes based on combining different plans or mixing styles (Ivanova et al. 2008, 2014). As seen from the very name of the mechanism, it refers to an opposition between incompatible plans, or between high and low styles. This could be associated with the abrupt shift between opposite emotional states typical for affective disorders.

Individual taste in humour may be described also through preferred types of jokes. Using factorial analysis of joke assessments, Willibald Ruch (1992) identified three kinds of humour in healthy people: nonsense, jokes based on incongruity resolution, and sexual humour as an independent factor. In a similar study of psychiatric patients, five types of humour were described (Ivanova et al 2008): three were very close to those of Ruch: nonsense, incongruity-resolution, and indecent humour; the other two were cynical-pessimistic humour, and jokes discriminating against the opposite sex. Comparing the differences between the groups of men with paroxysmal-progredient schizophrenia, affective disease and schizotypal disorder, the following preferences were obtained: patients with paroxysmal-progredient schizophrenia significantly preferred jokes based on incongruity-resolution and those that discriminate against women. Those with affective disorders had a significant dislike for indecent jokes, and at the same time preferred cynical-pessimistic humour, which confirmed previous data (Fasolo and Gambini 1991 – cited after Forabosco 2007, Kantor 1992). Interestingly, both manic and depressed patients displayed a preference for cynical-pessimistic humour. Patients with schizotypal disorder presented intermediate preferences: they gave a higher assessment to incongruity resolution and cynical-pessimistic humour.

Finally, taste in humour may be analysed on the basis of its topic. For instance, early studies have shown that suicidal patients prefer humour about death and suffering (Spiegel et al. 1969, Goldsmith 1984). On the other hand, in our empirical study, men with depression (but not necessarily suicidal) disliked jokes about death and illness; manic patients, as well as those with paroxysmal-progredient schizophrenia, preferred humour about sex and alcoholism or drug addiction (Ivanova et al. 2008). It is hard to judge the validity of these studies, since no definitive list of essential topics has been ever elaborated. Besides, topic preferences quite probably also depend to a great extent on gender, age and personality, besides the mental disorder itself (see e.g. Ziv 1984), therefore this area needs much more research.

Coping humour. The most popular psychological idea about the sense of humour points to its coping potential. Indeed, numerous studies have confirmed the coping effect of humour with regard to various psychopathological symptoms (Martin 2007), although as this data was mostly obtained on officially healthy respondents, rather than diagnosed patients, it should be used with caution in a clinical environment. While the coping effect of humour in depression has been confirmed by several studies (Gremigni 2012, Freiheit et al. 1998, Kuiper et al. 1998), the same has not been obvious for schizophrenic patients (Gremigni 2012). Moreover, Irina Grigorieva et al. (2014) revealed significantly lower levels of coping humour measured using the Coping Humour Scale (Martin 2007) in patients with schizophrenia when compared with healthy subjects. Kritskaya and Meleshko (2015) surmised that low coping humour ability is secondary to the humour comprehension disorder typical for these patients. Nevertheless, this ability requires much more thorough study in a clinical setting.

Styles of humour. Another widespread concept assumes an association between adaptive and maladaptive styles of humour and mental health (Martin 2007). This approach is mostly focused on the motivational component of humour, i.e. the intent of the joke-teller. Again, in this study we would prefer not to rely too much on data obtained on healthy subjects, but only a few studies have been conducted in psychiatric clinics. Depression has been associated with high maladaptive and low adaptive humour styles (Bresser et al. 2011). In a study of terror survivors, the use of self-enhancing humour by the survivors was associated with fewer psychopatological symptoms on the part of their spouses, and the use of affiliative humour by the spouses was associated with fewer symptoms being reported by the survivors themselves (Besser et al. 2015). In a pilot study, a comparison of humour styles measured by the Humor Styles Questionnaire (Martin 2007) between patients with schizophrenia

and healthy control subjects revealed a decrease in affiliative, self-enhancing, and aggressive styles of humour, but not in the self-defeating style (D. Ivanova 2008).

Attitude towards humour and laughter. The next parameter to describe a patient's sense of humour would be their attitude towards humour and laughter, namely: gelotophobia (the fear of being laughed at), gelotophilia (the joy of being a target for laughter), and katagelasticism (the joy of laughing at others). These concepts were developed by Ruch and his colleagues as part of the psychology of individual differences (Ruch et al. 2014, Ruch and Proyer 2009), but more recently the research has reverted back to the clinical field. Numerous studies have confirmed that gelotophobia as a pathological fear of being laughed at is widespread in mental patients with various disorders: depression under endogenous diseases - 44% (Lyubavskaya et al. 2018), mood disorders - 81% (Forabosco et al. 2009), Asperger syndrome - 45% (Samson et al. 2011), schizophrenia - 50% (Forabosco et al. 2009), borderline personality disorder - 87% (Brück et al. 2018), and most of all in patients suffering from both social anxiety and avoidant personality disorder - 100% (Havranek et al. 2017). An important issue is whether gelotophobia reflects a primary or a secondary disorder in the patient. The fear of being laughed at is related partly to the core psychopathology, and partly to the phenomenon of self-stigmatization. For instance, in patients with non-psychotic mental disorders, gelotophobia correlated with self-stigmatization, whereas it did not in those with brain injuries (Shunenkov et al. 2021). Ekaterina Stefanenko et al. (2014) confirmed a greater expression of gelotophobia in patients with schizophrenia, which negatively correlated with the duration of the illness. In the early stages of schizophrenia, gelotophobia increases, but then, the longer the patient is ill, the more the gelotophobia decreases, which may reflect a developing defect. In the same study, the author also found gender differences of compensation with regard to gelotophilia and katagelasticism. Among healthy subjects gelotophilia and katagelasticism were more pronounced in men, while in patients with schizophrenia they were more characteristic for women rather than men.

5. Conclusion

To conclude, we surmise that psychological syndromic analysis is a highly useful methodology for the study of sense of humour disorders in mental patients. The sense of humour is a multidimensional function, which is why it never simply "decreases" in patients with any kind of mental disorder, but rather some of its components may become more impaired, while others may remain relatively intact or even become compensatorily enhanced. In this regard, despite the fact that mental patients always demonstrate a certain humour deficit, they may still develop and use the ability to cope by means of humour and laughter, use their sense of humour to maintain relationships with others, or enjoy humour and laughter in their everyday lives. These ideas justify humour as a useful tool in clinical diagnostics and intervention. Basing on empirical clinical data, in this article we have defined a number of sense of humour components which are relatively distinct and independent. The list is obviously not exhaustive, but rather is to be continued along with future studies. Any examination of sense of humour disorders should include a description of the impaired and intact components, the psychological mechanisms of their development (e.g. depression, impairment of mentalization, acute anxiety, self-stigmatization etc.) and finally, a structure of the entire system of the syndrome for a certain clinical group or individual. For example, Kritskaya and Meleshko (2015) suggested that humour comprehension disorder in patients with schizophrenia developed due to their impairment of social perception, which, in turn, leads to an inability to use the coping effect of humour.

Some humour disorders are typical for certain mental disorders, while others characterize a wide spectrum of them. In this way, patients with schizophrenia are characterized by impaired humour recognition, comprehension, and expression, while their wit may remain relatively intact. Their ability to cope using humour is low, and they tend to experience the fear of being laughed at; their taste in humour is specific (for example, they prefer jokes based on incongruity resolution). Patients with affective disorders preserve their humour recognition intact, although their humour comprehension, and in particular their expression of humour decrease, possibly because of their bad mood. They have a specific taste in humour, which also reflects their mood, and they also tend to experience the fear of being laughed at.

The concept of the psychological syndrome in Russian clinical psychology was rooted in the methodology of the Cultural Historical Approach to mental functions as a whole. Although this article is devoted to clinical aspects of the sense of humour, we believe that the ideas herein may also be useful for the general knowledge about humour.

References

Berger, P., Bitsch, F., & Falkenberg, I. (2021). Humor in Psychiatry: Lessons From Neuroscience, Psychopathology, and Treatment Research. *Frontiers in Psychiatry*, 12:681903. doi: 10.3389/fpsyt.2021.681903

Besser, A., Luyten, P., & Blatt, S.J. (2011). Humor Styles Mediate or Moderate the Relationship Between Self-Criticism and Neediness and Depressive Symptoms? *The Journal of Nervous and Mental Disease, 199*(10), 757-764.

Besser, A., Weinberg, M., Zeigler-Hill, V., Ataria, Yo., & Neria, Yu. (2015). Humor and Trauma-Related Psychopathology Among Survivors of Terror Attacks and Their Spouses. *Psychiatry. Interpersonal and Biological Processes, 78*(4), 341-353. http://dx.doi.org/10.1080/00332747.2015.1061312

Brück, C., Derstroff, S., & Wildgruber, D. (2018). Fear of Being Laughed at in Borderline Personality Disorder. *Frontiers in Psychology, 9*:4. doi:10.3389/fpsyg.2018.00004

Chadwick, D. D., & Platt, T. (2018). Investigating Humor in Social Interaction in People with Intellectual Disabilities: A Systematic Review of the Literature. *Frontiers in Psychology,* 9:1745. doi: 10.3389/fpsyg.2018.01745

Derks, P., Leichtman, H. M., & Carroll, P. J. (1975). Production and judgement of «humor» by schizophrenics and college students. *Bulletin of the Psychonomic Society,* 6, 300–302. https://doi.org/10.3758/BF03336669

Dionigi, A., & Canestrari, C. (2016). Clowning in health care settings: The point of view of adults. *Europe's Journal of Psychology, 12*, 473-488. doi:10.5964/ejop.v12i3.1107

Freiheit, S. R., Overholser, J. C., & Lehnert, K. L. (1998). The association between humor and depression in adolescent psychiatric inpatients and high school students. *Journal of Adolescent Research, 13*(1), 32–48.

Fonzi, L., Matteucci, G., & Bersani, G. (2010). Laughter and depression: Hypothesis of pathogenic and therapeutic correlation. *Rivista di Psichiatria*, 45, 1-6.

Forabosco, G. (2007). The ill side of humor: Pathological conditions and sense of humor. In W. Ruch (ed.). The Sense of Humor: explorations of a personality characteristic. N.Y.: Mouton de Gruyter, 271–292.

Forabosco, G., Ruch, W., & Nucera, P. (2009). The fear of being laughed at among psychiatric patients. *Humor: International Journal of Humor Research, 22*(1/2), 233-251. DOI: 10.1515/HUMR.2009.011

Gelkopf, M. (2011). The Use of Humor in Serious Mental Illness: A Review. *Evidence-Based Complementary and Alternative Medicine*, 2011:342837. doi:10.1093/ecam/nep106

Goldsmith, L. A. (1984). The capacity for adaptive regression and humor and its relation to suicide lethality. In L. Bellak, L. A. Goldsmith (eds.) The Broad Scope of Ego Function Assessment. New York: Wiley, 362–375.

Gremigni, P. (2012). Humor and mental health. In P. Gremigni (ed.) Humor and health promotion. Nova Biomedical Books, 173–188.

Grigorieva, I. V., Stefanenko, E. A., Ivanova, E. M., Oleychik, I. V., & Enikolopov, S. N. (2014). *National Psychological Journal, 2*(14), 82–89. doi: 10.11621/npj.2014.0210

Havranek, M. M., Volkart, F., Bolliger, B., Roos, S., Buschner, M., Mansour, R., Chmielewski, T., Gaudlitz, K., Hättenschwiler, J., Seifritz, E., & Ruch, W. (2017). The fear of being laughed at as additional diagnostic criterion in social anxiety disorder and avoidant personality disorder? PLoS ONE, 12(11): e0188024. https://doi.org/10.1371/journal.pone.0188024

Hawks, D. V., & Payne, R. W. (1972). Overinclusive thinking and concept identification in psychiatric patients and normals. Psychology and Psychotherapy. *Theory, Research and Practice*, 45(1), 57-69.

Hofmann, J., Carretero-Dios, H., & Carrell, A. (2018). Assessing the Temperamental Basis of the Sense of Humor: Adaptation of the English Language Version of the State-Trait Cheerfulness Inventory Long and Standard Form. *Frontiers in Psychology*, 9:2255. doi: 10.3389/fpsyg.2018.02255

Ivanova, E. M. (2007). Narusheniya chuvstva yumora pri shizofrenii i affektivnyh rasstrojstvah [Sense of humour disorders under schizophrenia and affective disorders]. Dissertation cand. of psychol. sciences. Moscow, MSU. 184 p.

Ivanova, A. M., Enikolopov, S. N., & Mitina, O. V. (2008). Narusheniya chuvstva yumora pri shizofrenii i affektivnyh rasstrojstvah [Analysis of disfunctions of the sense of humor in schizophrenia and affective disorders]. Voprosy Psikhologii, 1, 45-57.

Ivanova, A. M., Enikolopov, S. N., & Mitina, O. V. (2014). Sense of humor disorders in patients with schizophrenia and affective disorders. *Psychology in Russia: State of the Art, 7*(1), 146-157.

Ivanova, E. M., Obraztsova, V. S., Grabovaya, E. V., & Shcherbakova, O. V. (2018). Osobennosti ponimaniya yumora pri psihicheskih zabolevaniyah: kachestvennyj analiz [Features of humor understanding under mental diseases: a qualitative analysis]. Voprosy Psikhologii, 6, 77-87.

Ivanova, D. I. (2008). Yumor, zashchitnye mekhanizmy i koping-strategii u bol'nyh s psihicheskimi rasstrojstvami [Humor, defence mechanisms and coping strategies in patients with mental disorders]. Diploma thesis. Moscow, MSU.

Kantor, M. (1992). *The human dimension of depression: A practical guide to diagnosis, understanding, and treatment.* New York: Praeger.

Kritskaya, V. P., & Meleshko, T. K. (2015). Patopsihologiya shizofrenii [Pathopsychology of schizophrenia]. Moscow: M.: Institute of Psychology RAS. 389 p.

Kuiper, N. A., Martin, R. A., Olinger, L. J., Kazarian, S. S., & Jetté, J. L. (1998). Sense of humor, self-concept, and psychological well-being in psychiatric inpatients. *Humor: International Journal of Humor Research, 11*(4), 357-382. https://doi.org/10.1515/humr.1998.11.4.357

Lebedinskii, M. S. (1938). K voprosu o rechevykh rasstroistvakh u shizofrenikov [On the question of speech disorders in schizophrenics]. Sovetskaya psikhonevrologiya [Soviet psychoneurology], 3, 56–64.

Lyubavskaya, A. A., Oleychik, I. V., & Ivanova, E. M. (2018). Osobennosti gelotofobii, gelotofilii I katagelastitsizma u patsientov s depressivnym sindromom [Features of a gelotophobia, gelotophilia and katagelasticism in patients with a depressive syndrome]. *Clinical Psychology and Special Education, 7*(3):119-134.

Luk, A. N. (1982). Emocii i lichnost' [Emotions and Personality]. Moscow: Znanie.

Luk, A. N. (1977). Yumor, ostroumie, tvorchestvo [Humour, Wit, Creativity]. Moscow: Iskusstvo.

Luria, A. R. (1973). The Working Brain. An Introduction to Neuropsychology. London: Penguin Books.

Mäkinen, J., Miettunen, J., Isohanni, M., & Koponen, H. (2008). Negative symptoms in schizophrenia—a review. *Nordic Journal of Psychiatry,* 62, 334–341. doi: 10.1080/08039480801959307

Marjoram, D., Tansley, H., Miller, P., MacIntyre, D., Owens, D. G. C., Johnstone, E. C., & Lawrie, S. (2005). A Theory of Mind investigation into the appreciation of visual jokes in schizophrenia. *BMC Psychiatry,* 5:12 doi:10.1186/1471-244X-5-12

Martin, R. (2007). *The Psychology of Humor. An Integrative Approach.* Academic Press. 464 p.

Mezzich, J. E., Salloum, I. M., Cloninger, C. R., Salvador-Carulla L., Kirmayer, L., Banzato, C. E., Wallcraft, J., & Botbol, M. (2010). Person-centered Integrative Diagnosis: Conceptual Bases and Structural Model. Canadian Journal of Psychiatry, 55, 701–708. https://doi.org/10.1177/070674371005501103

Nikolaeva, V. V. (2011). B.W. Zeigarnik and Pathopsychology. *Psychology in Russia: State of the Art,* 4, 176-192. DOI: 10.11621/pir.2011.0010

Payne, R., Hawks, D., Friedlander, D., & Hart, D. (1972). The Diagnostic Significance of Overinclusive Thinking in an Unselected Psychiatric Population. British Journal of Psychiatry, 120(555), 173-182. doi:10.1192/bjp.120.555.173

Peralta, V., Cuesta, M. J., & de Leon, J. (1992). Formal thought disorder in schizophrenia: A factor analytic study. *Comprehensive Psychiatry, 33*(2), 105-110 https://doi.org/10.1016/0010-440X(92)90005-B

Polimeni, J., & Reiss, J. P. (2006). Humor perception deficits in schizophrenia. *Psychiatry Research,* 141, 229-232. DOI: 10.1016/j.psychres.2005.05.012

Polimeni, J. O., Campbell, D. W., Gill, D., Sawatzky, B. L., & Reiss, J. P. (2010). Diminished humour perception in schizophrenia: Relationship to social and cognitive functioning. *Journal of Psychiatric Research, 44*(7), 434–440. https://doi.org/10.1016/j.jpsychires.2009.10.003

Rosin, S.A., & Cerbus, G. (1984). Schizophrenics' and college students' preference for and jadgement of schizophrenic versus normal humorous captions. *Journal of Psychology*, 118, 189–195.

Ruch, W. (1992). Assessment of appreciation of humor: Studies with the 3 WD humor test. In J. N. Butcher, & C. D. Spielberger (eds.) *Advances in Personality Assessment*. Hillsdale. NJ: Erlbaum, 9, 27-75.

Ruch, W. (1993). Exhilaration and humor (Chapter 42). In M. Lewis & J.M. Haviland (eds.) The Handbook of Emotions. New York, NY: Guilford Publications, 605-616.

Ruch, W., & Carrell, A. (1998). Trait Cheerfulness and the Sense of Humour. *Personality and Individual Differences, 24*(4), 551-558. doi: 10.1016/S0191-8869(97)00221-3

Ruch, W., Köhler, G., & van Thriel, C. (1997). To be in good or bad humor: construction of the state form of the State-Trait-Cheerfulness-Inventory—STCI. *Personality and Individual Differences,* 22, 477–491. doi: 10.1016/S0191-8869(96)00231-0

Ruch, W., Hofmann, J., Platt, T., & Proyer, R. (2014). The state-of-the art in gelotophobia research: A review and some theoretical extensions. *Humor: International Journal of Humor Research, 27*(1), 23-45. doi: 10.1515/humor-2013-0046

Ruch, W. & Proyer, R. T. (2009). Extending the study of gelotophobia: On gelotophiles and katagelasticists. *Humor: International Journal of Humor Research, 22*(1-2), 183-212. DOI: 10.1515/HUMR.2009.009

Samson, A., Huber, O., & Ruch, W. (2011). Teasing, ridiculing and the relation to the fear of being laughed at in individuals with Asperger's syndrome. *Journal of Autism and Developmental Disorders, 41,* 475–483. doi: 10.1007/s10803-010-1071-2

Shcherbakova, O.V. (2009). Kognitivnye mekhanizmy ponimaniya komicheskogo [Cognitive mechanisms of the comic comprehension]. Dissertation cand. of psychol. Sciences. St. Petersburg.

Shcherbakova, O. V., Obraztsova, V. S., Grabovaya, E. V., Chan, R., & Ivanova, E.M. (2018). Ponimanie yumora u zdorovyh lyudej i pacientov s psihicheskimi zabolevaniyami: kognitivnyj i emocional'nyj komponenty [Understanding of humour in healthy people and mental patients: Cognitive and emotional components]. Voprosy Psikhologii, 4, 92-102.

Shunenkov, D., Vorontsova, V., & Ivanova, A. (2021). Gelotophobia, attitudes to the diseases and self-stigmatization in patients with non-psychotic mental disorders and brain injuries. *European Journal of Humour Research (in press).*

Spiegel, D., Brodkin, S.G., & Keith-Spiegel, P. (1969). Unacceptable impulses, anxiety and the appreciation of cartoons. *Journal of Projective Techniques and Personality Assessment*, 33, 154–159.

Stefanenko, E.A., Enikolopov, S.N., & Ivanova, E.M. (2014). Osobennosti otnosheniya k yumoru i smekhu u bol'nyh shizofreniej [The relation to the humor and laughter in patients with schizophrenia]. Zhurnal Nevrologii i Psikhiatrii imeni S.S. Korsakova, 114(1), 26-29.

Telles-Correia, D., Saraiva, S. & Gonçalves, J. (2018). Mental Disorder—The Need for an Accurate Definition. *Frontiers in Psychiatry*, 9:64. doi: 10.3389/fpsyt.2018.00064

Volovik, D., Omelchenko, M., & Ivanova, A. (2021). Emotional response to humour perception and gelotophobia among healthy individuals and patients with schizophrenia and depression, with signs of a high clinical risk of psychosis. Consortium Psychiatricum, 2(1), 8-17. doi:10.17816/CP65

Vygotsky, L. S. (1993). The diagnostics of development and the pedological clinic for difficult children. In R. W. Rieber & A. S. Carton (eds.). The collected works of L. S. Vygotsky: The fundamentals of defectology (abnormal psychology and learning disabilities), 2, 241–291. New York: Plenum Press. doi: 10.1007/978-1-4615-2806-7.

van der Wal, C. N., & Kok, R.N. (2019). Laughter-inducing therapies: Systematic review and meta-analysis. *Social Science & Medicine*, 232, 473–488. doi.org/10.1016/j.socscimed.2019.02.018

Werth, A., Perkins, M., & Boucher, J. (2001). Here's the weavery looming up. Autism, 5(2), 111-125.

Wyer, R. S., & Collins, J. E. (1992). A Theory of Humor Elicitation. *Psychological Review, 99*(4), 663-688.

Zeigarnik, B. W. (1986). Patopsihologiya [Pathopsychology]. Moscow: Izd-vo MGU.

Zinchenko, Yu. P., & Pervichko, E. I. (2012). The Methodology of Syndrome Analysis within the Paradigm of "Qualitative Research in Clinical Psychology". *Psychology in Russia: State of the Art,* 5, 157-184. DOI: 10.11621/pir.2012.0010

Zinchenko, Yu. P., & Pervichko, E. I. (2013a). Nonclassical and Postnonclassical epistemology in Lev Vygotsky's cultural-historical approach to clinical psychology. *Psychology in Russia: State of the Art, 6*(1), 43-56. DOI: 10.11621/pir.2013.0104

Zinchenko, Yu. P., Pervichko, E. I., & Martynov, A. I. (2013b). Psychological underpinning of personalized approaches in modern medicine: syndrome analysis of mitral valve prolapsed patients. Psychology in Russia: State of the Art, 6(2), 89-102. doi: 10.11621/pir.2013.0208

Ziv, A. (1984). Personality and Sense of Humor. NY: Springer Publishing.

Bionote

Alyona Ivanova

Alyona Ivanova, PhD in clinical psychology; Lecuterer of the Clinical Psychology Department, Faculty of Clinical Psychology and Social Work, Pirogov Russian National Research Medical University; Senior Researcher, Medical Psychology Department, Mental Health Research Center.

Research interests: psychology of humour, humour research in healthy people and mental patients, coping humour, clinical psychology, psychiatry.