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Color studies in applied psychology and social sciences: An overview

Abstract:

Our article presents a comprehensive overview of studies on colour from the perspective of applied psychology and social sciences. It discusses major findings from the psychology of colour applied to marketing, business, politics and sports as well as to problems connected with using color tests in psychological diagnoses. Moreover, we present an overview of particularly interesting colour studies on synaesthesia related to cognitive and applied psychology as well as psycholinguistics. Finally, we discuss the most recent trends in investigations into applied colour psychology as well as potential directions for further research.

Keywords:

color, psychological diagnosis, politics, sport, marketing, synaesthesia

Streszczenie:

Artykuł stanowi szczegółowy przegląd przeprowadzonych badań nad kolorem z perspektywy psychologii stosowanej i nauk społecznych. Omówione zostały główne wyniki badań dotyczących psychologii koloru z zakresu marketingu, biznesu, polityki i sportu jak i problemy związane z zastosowaniem testów kolorów w diagnozie psychologicznej. Ponadto analizie zostały poddane szczególnie interesujące studia nad synestezją z zakresu koloru będące na pograniczu psychologii kognitywnej i stosowanej jak i psycholingwistyki. Artykuł poglądowy kończy prezentacja najnowszych trendów w psychologii koloru oraz dyskusja dotycząca kierunków dalszych badań.

Słowa kluczowe:

kolor/barwa, diagnoza psychologiczna, sport, marketing, synestezja

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Introduction

An interest of psychology, and particularly applied psychology in the impact of colour on human functioning has a long history; however, it has fairly limited research achievements. Some more systematic empirical studies in the field appeared at the end of the last century; however, many of them suffer from methodological shortcomings and fail to encompass a correlational analysis which is a norm in modern psychology. To illustrate this fact let us consider the results of research on the colour red. For decades, various scholars have discussed the symbolical associations of red with fire, energy, passion and love as well as the common metaphor for war and rage (Mahnke, 1996). In this context it was expected that red should cause arousal in the human organism (Mahnke, 1996). Nonetheless, the vast majority of contemporary empirical investigations do not substantiate this assumption (e.g., Ainsworth, Simps, Cassell, 1993; Hatta et al., 2002). For this reason other most recent studies on red come to the fore, promoting empirically validated claims that the colour red influences, among other things, human motivational processes (Elliot, 2007; Lichtenfeld, 2009; Mehta, Zhu, 2009; Rutchick, Slepian, Ferris, 2010), can act as a distractor (Ioan et al., 2007), or has an impact on perceived sexual attractiveness (Elliot and Niesta, 2008; Elliot et al. 2010).

Elliot and Maier (2014) suggested that research on the psychology of colour has been conducted within the framework of applied psychology for a few decades (see many studies published in the *Journal of Applied Psychology* as early as the pre-war period (e.g., Katz, & Breed, 1922; Schiller, 1935; Philip, 1945; Walton & Morrison, 1931). However, due to a wide variety in terms of the covered topics as well as a limited replicability of the results, there are rather few comprehensive overview articles in the field. If such articles exist, they pertain mostly to a narrow range of topics, focusing primarily on marketing and business (e.g., Sable & Akcay, 2011). Overview articles on the psychology of colour that are published in psychological journals concern mostly issues unrelated to applied psychology. For instance, in the prestigious *Annual Review of Psychology* (ARP) the majority, if not all of the colour-related reviews focus on colour physics and physiology (Abramov & Gordon, 1994; Boynton, 1988; De Valois & Abramov, 1966; Jacobs, 1976; Jameson & Hurvich, 1989; Mollon, 1982).

Therefore, it seems particularly worthwhile for us to present a comprehensive review of research to date in applied psychology dealing with the issue of colour. In the following sections we discuss study findings from the psychology of colour applied to marketing, business, politics and sports as well as problems connected with using color tests in psychological diagnoses. In addition, we offer an overview of particularly interesting studies on synaesthesia bordering on cognitive and applied psychology, colour

research and linguistics. Finally, we describe the most recent trends in investigations into applied colour psychology as well as potential directions for further research.

Colour in marketing and business

Psychologically in the sellingsome goods, colours might fulfil many different functions: they attract attention, convey some information, or evoke certain emotions or motivations.

The first of the above-mentioned functions, that is, attracting attention through higher visibility of a certain colour is obvious. Research regarding perception has shown that especially red and purple fulfil this function well, since they are noticed more quickly than other colours in the horizontal perspective (e.g., Koslow, 1985).

Studies examining real advertisements have basically concentrated on black and white vs. colourful stimuli. In Fernandez and Rosen's (2000) study, colourful advertisements attracted greater attention among the participants – and so visibility in the telephone book's Yellow Pages was improved. However, it is important that when the participants were taking a decision which company to call, the colour of the commercial was an advantage only when it was consistent with the advertisement's content. In the opposite case, it decreased the effectiveness of the advertisement. In the follow-up study (Lose, Rosen, 2001) these outcomes were confirmed and, additionally, it was shown that if the colour does not convey any information about product quality (e.g., clear, blue water in the commercial of holidays in the Caribbeans), it is not more efficient than black and white commercials. Similar outcomes were obtained by Moore and others. (2005). Their research suggests that using incongruent colour schemes in banners compared to the rest of the website results in more attention being paid to the banner; however, the attitude towards such a banner is more negative than towards a banner whose colours are more congruent with its website. In summary, attitudes towards advertised products are influenced by the content of the commercial more than by bare attention paid to it. Therefore, it is highly probable that a bright red colour in the advertisement will increase the chance of noticing it, but in many cases – when it is inconsistent with the brand profile or the product itself, it can decrease the product rating.

Research regarding another function of colour – evoking physiological reactions, emotions and motivations (which might indirectly influence customer behaviour) is relatively the least advanced. More than a dozen academic marketing studies (Mantua, 2007) agree on colour having an impact or effect on a brand's perception (identification, identity and awareness, attitudes, evaluation and choice). For example, blue appears to be a highly positive colour, as blue stores, products and websites are rated, among others

things, as more relaxing, and more trustworthy (Alberts & van der Geest, 2011; Lee & Rao, 2010). However, little is known about why a particular colour might be perceived and interpreted in a specific way (Whitfield & Wiltshire, 1990). The best conclusion regarding all these studies is Holmes, Fouty, Wurtz and Burdick's (1985) statement: "Enough studies have been reported to present a consistently inconsistent picture of the relationship". As indicated in the introduction, even the most commonly acknowledged observation used in popular science publications that "the red colour stimulates" is inconsistent with the majority of scientific studies on this topic (e.g., Ainsworth, Simps, & Cassell, 1993; Hackney, 2006; Hatta et al. 2002).

It must be admitted, however, that it seems obvious that some colours have certain connotations. Even if the colour red does not stimulate at the physiological level, the whole history demonstrates that this colour is a symbol of fire, energy and is a metaphor of war, rage and anger (Mahnke, 1996). Therefore, modern business and marketing use colours to express the desired image, profile or character they want their stakeholders to associate with them (e.g., Van den Bosch, de Jong & Elving, 2006). However, it should be remembered that as colours are perceived more like symbols, they convey context-dependent messages. For example, the study by Rutchick, Slepian and Ferris (2010) showed that using a red pen can bias the evaluations of people. Participants using red pens to correct essays marked more errors and awarded lower grades than the people using blue pens. In another context, the colour red has quite the opposite connotation as it might enhance the perceived sexual attractiveness of a person (Elliot & Niesta, 2008).

Additionally, the symbolic value of colours is culturally dependent (Huang, 1993; Mantua, 2007; Oberascher, 2008). Of course, meanings attached to some colours may be more or less pan-cultural, such as the colours of traffic lights, or blue for sea and sky, and green for nature (Morgan & Welton 1987), while some are regional and unique to specific cultures. However, there have not been any systematic studies investigating this topic.

Summing up, in comparison to common beliefs about the functions and qualities of colours, their practical application is much narrower.

Colour in politics

According to Sawyer (2006), colours used by political parties have a very long history, going back to ancient Greece and Rome. At present, colours applied by particular ideologies usually have certain historical connotations. Red used to be generally the colour of revolution, war and radicalism, for example in the French Revolution. Today, modernising Labour parties tend to shy away from using red unless in the form of the red rose of the Socialist International rather than the blood-soaked flag of a popular revolt. On the

other hand, green has become a symbol of ecological parties. This symbolic shorthand may have had its origins in the ‘green bans’ imposed by the Builders Labourers Federation (BLF) on development projects in Sydney in the early 1970s (Sawer, 2006). However, green is also the colour of Islam and is used today by some Islamic political parties. Other colours also have their connotations; blue, particularly dark blue, is often associated with Conservative parties, whereas black is primarily associated with anarchism or nationalism.

In political marketing, using certain colours is even easier than in “traditional” marketing and business, because, as it was explained above, colours in politics have clear connotations. Colours play an important role not only as the cause’s visual symbols but also in the general emotional impression and image of different things. Politicians tend to take advantage of that by, for example, manipulating politicians’s clothing or their picture backgrounds. A person’s dressing style was found to be statistically significant and conceptually important (Johnson et al., 1977), but actually there exist only a few studies demonstrating how the colour of clothing, especially a politician’s, influences a viewer’s perception. Probably some political parties have conducted more studies, but their results are not available. Actually, it is only known that red enhances the physical attractiveness of a woman (Elliot & Niesta, 2008) and that black influences the perceived aggressiveness of an assessed suspect (Vrij, 1997). Nonetheless, because of the absolutely different context, it is not certain that such effects would be observed in judging a politician as well. In an experiment conducted before the elections to the European Parliament (Czerko, 2004), researchers manipulated the colour of a candidate’s shirt in his promotional materials. It was found that the candidate wearing a white or a blue shirt evoked more positive emotions, was liked more and received more declared support than the candidate wearing a green shirt. It could be questioned, however, if a candidate of an ecological party would also be perceived as worse, or if candidates of parties that are clearly associated with some colours would also benefit from wearing white or blue. Moreover, cross-cultural universality of such findings needs to be confirmed. Clearly the political meaning of colours varies across time and space and is culturally dependent (Fine et al. 1998) probably even moreso than in “traditional” marketing. For example, in Poland, politicians of the populist and scandalous party Samoobrona (Self-defence) wore red-white ties symbolising the Polish national flag, which was supposed to demonstrate that they were patriots (Szarota, 2008). Such a symbol would probably be understood similarly only in Indonesia and Monaco because of the same colour coding of their flags.

Colour in sports

Sports is a discipline in which psychological studies have relatively consistent and clear results. In the scientific literature there are many studies regarding the use of colours in sports. One of the most interesting observations is the “red wins” effect.

The influence of a sportsman’s red outfit on the result of a sports competition has been analyzed during the Olympic Games in Athens. The obtained results suggest that having a red outfit increased a sportsman’s chances of winning (Hill & Burton 2005). During boxing, taekwondo, Greco-Roman wrestling and freestyle wrestling tournaments, the colour of sportsmen’s outfit (red or blue) was chosen at random. Hence, the number of victories won by the competitors wearing blue and by those wearing red should be similar in the course of the whole tournament. Despite this fact, significantly more winners were wearing red (Hill & Burton 2005).

Hill and Burton (2005) suggested that a red outfit might stimulate the sportsmen wearing it, increasing their “will to fight” and dominate the opponent. Such an assumption is probably not true. For example, Hackney (2006) demonstrated that persons’ levels of testosterone did not alter only because they were wearing red or black T-shirts. It seems that the observed effect is rather dependant on the “observer”, in other words, the referee or the “red” sportsman’s opponent and not the person dressed in red. This hypothesis was confirmed by Hagemann, Strauss, and Leming (2008) who demonstrated that referees assessing the same taekwondo fight, in which the opponents’ colours were changed, assigned approximately 13% more points to the “red” sportsman than to the “blue” one. Additionally, Sorokowski & Szmajke (2007) found that the colour of T-shirts influenced only the competitors’ bravery and aggressiveness and not the perception of their technical and physical abilities. At the same time, Rowe, Harris and Roberts (2005) and Matsumoto, Konno, Hata (2007) showed that judokas in blue outfits won more often than the judokas in white outfits. The authors suggested that sportsmen’s successes in a certain colour (also red over blue uniforms) might result from how movements of certain colours are perceived. However, see also the contradictory results of Dijkstra and Preenen (2008).

So far, there has been no convincing evidence confirming the “red wins” effect in team sports. Attrill and others (2008) suggested that this effect was observed in football. They demonstrated, for example, data from the English league since 1947 and an analysis of the results of the English national team playing in white or red T-shirts. However, no such effect was observed in two further studies – one investigating Polish football league results (Szmajke & Sorokowski, 2006) and another one German league results (Kocher & Sutter, 2008).

Summing up, the “red wins” effect is observable in martial arts, in which the opponents fight directly with each other rather than being on a sports team. Although its origin and mechanism is not fully clear, it seems to be primarily related with incorrectly perceiving sportsmen in red outfits as more active, brave and aggressive.

Colours in psychological diagnoses

Despite many methodological problems, colours have long been used in psychological diagnoses. Many instruments have been developed, such as the Pfister’s Colour Pyramid test (1950) (Schaie, 1963); the Rorschach Inkblot test (1927) (Klopfer & Davidson, 1962), the Lüscher Colour test (1948) (Lüscher, 1969), the Lowenfeld Mosaic test (Lowenfeld, 1952); and different tests used regionally, for instance the Frieling Test (Muths, 2001), the Weyssenhoff test (Weyssenhoff, 1991) or, recently developed the Manchester Colour Wheel (Carruthers, Morris, Tarrier, Whorwell, 2010). They have been designed mostly to interpret the human psyche, for instance personality. It should be highlighted, however, that all these methods are based on projection mechanisms proposed by Freud. Many experimental studies have shown that the results of projection methods are often far from reality (Lilienfeld, Wood, & Garb, 2000). What is more, even very early reviews have neglected the proposed relationships between response to colour and the majority of personality attributes (Cerbus & Nichols, 1963). Nevertheless, continuous interest in the above-mentioned methods has inspired further discussion of colour use in psychological diagnoses.

In 1921, Rorschach as one of the first clinical psychologists noticed the relationship between colours and emotions. Having conducted many studies on reactions to black-and-white and colourful blots, he suggested, for example, that patients who did not notice colours during the test were emotionally inhibited, and people who had many associations involving colours were prone to frequent changes in mood (Schachtel, 1943). However, the test does not fulfil basic psychometric requirements for psychological diagnostic tools (Wood, Nezworski, Lilienfeld, & Garb, 2003). Its test validity has not been sufficiently proven, and as it is widely available on the Internet (Wikipedia), together with the analysis of potential answers, its application here seemed to make little sense.

The most famous colour test is probably the Lüscher Colour Test (Lüscher, 1969). In this test, the participant orders eight colours from those most liked and which evoke the most positive emotions, to those least liked and evoking the most negative emotions. On the basis of colour preferences the psychologist draws conclusions about the patient. Similarly as in Rorschach’s test, the Lüscher Colour Test has only good reliability (Donnelly, 1974) when the participants do not change their colour preferences. Such stability is not

related in any way to the tool's diagnostic qualities, and no data were presented regarding its validity. In addition, the theory upon which the author developed his tool is highly controversial in the context of contemporary knowledge, and studies confirming his theory, described by Lusher are rather anecdotal in nature since he did not present any bibliography or references.

Another test is the Pfister's Colour Pyramid test (Schaie, 1963). Again, no independent studies confirming its psychometric qualities or verifying its practical usage have been presented in the scientific literature (at least in English). In this test the patient, using 24 colourful blocks, is supposed to create a pyramid he or she likes and then a pyramid he or she does not like. Finally, the Lowenfeld Mosaic Test (Lowenfeld 1952, Woodcock, 1984) is the last relatively frequently used test. It is applied mainly to children. People create colourful pictures with the collection of mosaics, which are later interpreted by the psychologist.

In conclusion, despite many methodological problems, colours have long been used in psychological diagnoses. However using them is very controversial in the context of contemporary scientific knowledge.

Colour studies on synaesthesia

The earliest interest in the relationship between colour-vision and modulating human perception can be traced back to such scholars as Pythagorus or Sir Isaac Newton. They proposed hypotheses about the existence of a physical relationship between the light and sound frequencies that are responsible for the sub-modality of colour and pitch (Lyons 2001). This old concept of human perception non-modularity has received support from recent behavioural and brain imaging studies suggesting that cross-modal interactions are common in normal perception and that the cortical pathways previously considered to be sensory-specific are also modulated by signals from other modalities (Shimojo & Shams 2001).

Existence of relationships between sensory sub-modalities has been most extensively explored in studies on synaesthesia, a condition which involves involuntary physical experience of cross-sensory associations, particularly between words, letters or speech sounds and colour. The term synaesthesia is used to refer to a neurologically-based condition in which stimulation of one sensory or cognitive pathway leads to automatic, involuntary experiences in a second sensory or cognitive pathway; for example, letters, numbers or speech sounds may be perceived as inherently coloured (Simner et al. 2005, Ward et al. 2006).

Different existing forms of synaesthesia trigger cross-modal associations; however, they are usually idiosyncratic in nature. More non-arbitrary patterns of correspondence tend to be observed in the mappings between colours and speech sounds. As demonstrated in several studies on synaesthetic populations, there appears to be a strong correlation between auditory pitch and visual luminance, and a general tendency to associate high pitch sounds with light colours and low tones with darker hues (cf. Hubbard 1996, Simner et al. 2005, Ward et al. 2006). Some theoretical accounts of synaesthesia indicate that tendencies in cross-modal matching especially between auditory and visual stimuli were also found in a non-synaesthetic population (Marks 1975, Harrison 2001). Therefore, it was suggested that the results of synaesthetic research can be applied to inform theories of ‘normal cognition’, since people who report this condition are hypothesised to recruit analogous mechanisms instead of the ones used in non-synaesthetic cross-modal perception. The differences were reported to demonstrate the nature of sound-colour mappings, since in the general population they are strategic rather than automatic – as in the synaesthetic population where the perceptual experience is more explicit and vivid (Ward et al. 2006).

There is considerable synaesthesia research; however, in this article we focus on studies that associate sounds with colour attributes as they seem particularly interesting and offer potential insights into psychological aspects of speech perception. The idea of colour perception, from a psycholinguistic perspective, was first investigated by Jakobson (1962), who identified some regularities in vowel-to-colour associations from case studies in coloured hearing synaesthesia. According to his proposal, chromaticity corresponds to the vertical axis of the vowel chart; thus the maximally open vowels (i.e. compact in acoustic terms), for example /a/, are regarded as maximally chromatic, that is, red. On the other hand, the light vs. dark distinction seems to be related to the horizontal position of the tongue, – vowels /o/ and /u/ tend to be associated with darker colours, whereas /e/ and /i/ with brighter colours (Jakobson, 1962: 488).

Jakobson’s hypotheses correspond, to a large extent, to other scholars’ observations based on case reports of sound-colour synaesthesia. For instance, Marks (1975) noted that the black vs. white distinction is related to vowel ‘pitch’, while the red-green distinction correlates with the ratio of second to first formant frequency of vowels. Moreover, Jakobson’s (1962) claims are in line with synaesthetic research results that point to a strong correlation between auditory pitch and visual luminance as well as a general tendency to associate high pitch sounds with light colours and low tones with darker hues (e.g. Simner et al. 2005, Ward et al. 2006).

Relatively few studies to date have explored this synaesthetic-like phenomenon of making associations between colours and auditory stimuli. Flagg and Stewart (1985)

conducted a study on consonants perception by using primary colours, and their findings demonstrated that colour can be used to study speech perception. In another very interesting study Dailey and others (1997) investigated the relation between creativity, synaesthetic tendencies and physiognomic perception measured by rating colours using adjectives with emotional connotations. Their results showed that creative individuals have access to a primary thinking process that assumes a unity of different sensory modalities, since these persons exhibited stronger associations between colours and vowels, as well as tones and emotional terms.

A series of experiments investigating sound-colour associations in Polish and English sound systems in a non-synaesthetic population were conducted by Wrembel (2009), Wrembel and Rataj (2008), Wrembel and Grzybowski (2011). The results demonstrated the statistical significance of sound-colour interactions for all the tested Polish vowel sounds and the vast majority of the English vowels. Moreover, the patterns of cross-modal correspondence were also found for specific colour attributes, namely, for hue, saturation and lightness. This series of studies indicated that vowel-sound mappings were consistent and non-arbitrary in a non-synaesthetic perception, and they followed a more universal tendency in which bright colours tend to be associated with high front vowel sounds (e.g. /i/, /e/), dark colours are attributed to back vowels (e.g. /u/, /o/), while open sounds like /a/ tend to be perceived as red, and central vowels such as /ə/ are mapped onto achromatic grey.

This line of studies on the significance of colour perception in psycholinguistics provides some further evidence for the non-arbitrary nature of cross-modal mappings in speech perception. The potential applications range from insights into psychological underpinnings of human perception to pedagogical implications for foreign language pronunciation instruction (Wrembel 2007).

Future research

It seems that future research on the psychology of colour or, placed in a wider perspective, social studies on the role of colour stand a chance of a rapid development. Therefore, our intention is to present to the reader several areas of recent research, that appear particularly promising. In the following paragraph we will also discuss some methodological issues connected with further studies in the field.

First of all, studies on culturally-related differences and universal tendencies in colour perception and preferences seem to be particularly interesting (Elliot et al., 2013; Sorokowski et. al., 2014; Taylor, Clifford, & Franklin, 2013). These studies began a discussion

about the universality of color preferences, and possible mechanisms underlying these preferences.

Other interesting studies demonstrated that the colours of clothing, especially red, can influence the perceived sexual attractiveness of a person (Elliot & Niesta, 2008). The most recent replications of this study showed that it is not only men who tend to interpret a woman's red clothing as a sexual signal (Guéguen, 2012), but also women actually use red in this way (Elliot and Pazda, 2012; Beall and Tracy (2013).

Another new line of research concerns the perceived colour of food packaging on one's willingness to eat it, on its apparent taste and other properties. For example, a study by Guéguen and Jacob (2013) demonstrated that coffee was perceived to be warmer when served in a red cup, whereas Ross, Bohscheid, and Weller (2009) found that red wine was perceived to have a better flavour when it was served in a blue glass. Other interesting findings in similar experiments were reported by Geier, Wansink, & Rozin, (2013) or Piqueras-Fiszman and Spence (2012).

From a methodological standpoint, the literature on colour psychology has seen several improvements in the past decade. However, the need for further modifications remains, and it concerns several areas, two of which will be briefly discussed here. First of all, researchers other than those representing the social sciences and humanities allow for the distinctions between various attributes of colours, such as saturation, in other words, how "intense" or "concentrated" a color is; hue (adding white and black pigment); and brightness/lightness, or, how light or dark a given colour is (Berns, 2011). Each of these colour attributes may influence psychological functioning (Camgoz, Yener, & Guvenc, 2003); so only one of them should be allowed to vary in a well-controlled experiment. However, the vast majority of research on colour in social studies has failed to allow for these distinctions. Therefore, we cannot fully explain which independent variables are responsible for the generated results of such studies.

Secondly, researchers select colour stimuli unsystematically – which is very problematic – and introduce some bias in colour studies as different shades of yellow, blue or red are used as stimuli. Controlling colour attributes at the spectral level by using pre-matched stimuli or a spectrophotometer is necessary to conduct truly rigorous colour research.

Conclusions

In conclusion, psychology and other social sciences have long been interested in the influence of colours on individuals (Mahnke, 1996), but research results are rather limited. Experimental studies often have had contradictory outcomes and their theoretical background is frequently inconsistent with modern neuroscience. For example, Steinhart's

work about colour therapy (1997) was based on, among others, Lüscher's theory, Kandinsky's 100 year-old theory and even Indian beliefs but did not take into account modern colour-related experimental knowledge. Additionally, many studies regarding colours are conducted inadequately (Smith, Bell and Fusco, 1986). Finally, the majority of the application or cognitive studies in the social sciences ignore the fact that colours consist of three elements: lightness, saturation and hue (Berns, 2011). Therefore, it is generally unclear which "green" or "red" colour was used in which study or even if the observed effect was not reliant upon the saturation of the employed stimuli. Readers must be aware of all these problems while reading this article.

On the other hand, modern psychology as well as other social studies or humanities have started to pay more and more attention to color-related research; such studies are growing in number and are being conducted at a higher methodological level. New lines of research have started to emerge, including for example, the aforementioned 'red wins' issue. It allows us to anticipate with hope future research on the applied psychology of colour.

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Psychometric Properties of the Sociopolitical Control Scale: A Preliminary Study on a Polish Sample

Abstract:

The Sociopolitical Control Scale (SPCS) measures psychological empowerment at the intrapersonal level. It comprises two subscales – leadership competence (LC) and policy control (PC). Adapting SPCS to Polish cultural conditions required measuring the translation, checking comprehension of items and establishing reliability and validity. Reliability and convergent validity are sufficient enough for this measure to be used in psychological research. Confirmatory Factor Analysis lets us assume that SPCS is an appropriate measure, and the Polish scale factorial structure resembles the factorial structure of the original version. Since Poland is a socio-demographically homogeneous country, our research is significant for cross-cultural comparisons, despite a non-representative sample ($n = 469$). The Polish version of SPCS was developed to be used in research on the social involvement of a political, religious and humanitarian nature.

Keywords:

Sociopolitical control, Psychological empowerment, Psychometric evaluation, Cross-cultural assessment

Streszczenie:

Skala Kontroli Socjopolitycznej (SKSP) jest narzędziem służącym do pomiaru psychologicznego empowermentu na poziomie intrapersonalnym. Adaptacja SPCS do polskich warunków kulturowych wymagała przetłumaczenia narzędzia, badania spójności wersji polskiej i amerykańskiej oraz ustalenia trafności i rzetelności. Rzetelność oraz trafność zbieżna są wystarczające do stosowania SKSP w badaniach psychologicznych. Wyniki analizy czynnikowej pozwalają przyjąć, że skala jest narzędziem trafnym, a struktura czynnikowa polskiej wersji jest zbliżona do struktury czynnikowej wersji oryginalnej. Polska jest krajem socjodemograficznie homogenicznym, dlatego prezentowane badania mają znaczenie dla porównań międzykulturowych pomimo niereprezentatywnej próby ($n = 469$). Polską wersję SPCS stworzono w celu użycia jej w badaniach nad zaangażowaniem społecznym o charakterze politycznym, religijnym i humanitarnym.

Słowa kluczowe:

Poczucie kontroli socjopolitycznej, empowerment psychologiczny, ewaluacja psychometryczna, porównanie międzykulturowe

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Introduction

Sociopolitical control indicates the intrapersonal component of psychological empowerment (Holden, Evans, Hinnant & Messeri, 2005; Zimmerman, 1990, 1995). The key components of empowerment are considered to include participation, control and critical awareness found at the following levels: individual (psychological empowerment), organizational, and community (Zimmerman & Warschausky, 1998). Sociopolitical control refers to an individual's conviction about his capabilities and how effective his influence is over the social and political system (Paulhus, 1983; Zimmerman & Zahniser, 1991). Sense of sociopolitical control comprises two factors: leadership competence (LC) and policy control (PC). Leadership competence describes the tendencies and abilities related to human management (Smith & Propst, 2001). The measure of policy control refers to the perceived capability to have influence over what those in power do (Itzhaky & York, 2003).

Sociopolitical control is an important variable in those fields of psychology where the centre of interest includes various sorts of individual and group involvement. The notion of sociopolitical control is, in a natural manner, connected with community psychology, since it was developed in this trend (Zimmerman, 1989, 1990; Rappaport, 1981, 1987). Another application of sociopolitical control is work and organizational psychology (Boyd & Angelique, 2002; Boyd & Angelique, 2007). The Sociopolitical Control Scale can also be used for research conducted in line with political psychology. Especially since some items of the Policy control subscale have been used since the 1950s by the *Michigan Survey Research Center* in studies devoted to political participation (Milbrath & Goel, 1977).

The SPCS may be applied to devise prevention and intervention models in different community-based settings. Applications of this approach may be useful for providing models in different community-based promotion and interventions designed as psychologically empowering. For instance, the sociopolitical control construct could be helpful in developing abuse prevention programs (Holden, Messeri, Evans, Crankshaw & Ben-Davies, 2004; Peterson, Lowe, Aquilino & Schneider, 2005). Other examples of this concept's application may be in regard to local community participation measurement (Itzhaky & York, 2000, 2003). Additionally, sociopolitical control could be useful for measuring psychological empowerment in organizational settings, for example among employees (Boyd & Angelique, 2002, 2007), members of a church or political leaders and followers (Zimmerman & Zahniser, 1991; Kanafa-Chmielewska, 2009).

Zimmerman and Zahniser's (1991) Sociopolitical Control Scale (SPCS) has been adapted to Polish cultural conditions despite the existence of its revised version from 2006 (Peterson, Lowe, et al., 2006).

Scale adaptation and its psychometric evaluation were performed for research concerning social involvement of a political, religious and humanitarian nature in Polish cultural conditions. Poland is a homogeneous country with regard to its ethnic socio-demographic criteria (1.23 per cent minorities), racial (100 per cent White), and religious character (96 per cent religious people, of which 88 per cent are Catholics) (GUS, 2010, 2009; CBOS, 2005).

The particularity of social participation in Poland makes measuring the sense of sociopolitical control important. It is commonly acknowledged that Poles are relatively inactive socially. Low propensity to associate in non-governmental organizations and low electoral turnout seem to reflect this pattern (Sulek, 2009). Such indices are substantially lower even if compared with other democracies in transition, not to mention well-established democratic systems (Millard, 2010; Chmielewski, 2008). A plausible explanation has not yet been found. Some researchers attempt to explain this phenomenon by referring to comparative frameworks, but with limited success (Cześniak, 2007). Searching the literature devoted to civic activism, we can find claims that some psychological factors are relevant in cases where decisions are made to participate in a political system. Among these we may highlight a sense of duty to participate and sense of self-efficacy, which are key factors at the individual level (Norris, 2002). Therefore, it is probable that a sense of sociopolitical control is a relevant variable in searching for a reason for low social activity in Poland.

The initial adaptation and verification of the SPCS psychometric parameters was conducted on a sample of 469 research participants. The validity and reliability of the measure will be verified in the future on larger samples.

The procedure of creating a Polish version of SPCS consisted in establishing the Polish language version and determining its fundamental psychometric properties within the methodological guidelines (Hambleton, Merenda, & Spielberger, 2005; AERA, APA, & NCME, 1999). Confirmatory factor analysis – CFA was performed using Statistica version 9.0. For the remaining calculations we used SPSS version 14.0. Our research was conducted in 2009.

Adaptation

The SPCS (Zimmerman & Zahniser, 1991) was translated by a psychologist, a political scientist specializing in issues regarding participation, and a sworn translator. After a back-translation, a final Polish version of SPCS was established. Answers were provided on the 5-point Likert scale (strongly agree, agree, neither agree nor disagree, disagree, strongly disagree). Upon having determined the Polish language version, our next

step was to check the comprehension of items. The SPCS statements were intelligibly formulated for all research participants, regardless of their level of education and age.

The cohesion of SPCS was checked by bilingual graduate students of English philology who filled out the Polish and American SPCS version. The correlations between the results of the SPCS Polish and American version for particular statements in Leadership competence ranged from 0.70 to 0.94 ($p < 0.001$), whereas in Policy control from 0.58 to 0.85. For the overall SPCS result (items 1 to 17) the level of correlation amounted to 0.92 ($p < 0.001$); *Leadership competence* was slightly higher (items 1 to 8) $r = 0.93$ ($p < 0.001$) than for *Policy control* (items 9 to 17) $r = 0.90$ ($p < 0.001$).

Psychometric evaluation

Method

Sample one

The first group of participants consisted of adults studying at different educational levels in Wrocław ($n = 101$). Wrocław is a city in southwest Poland, population 632 thousand permanent inhabitants (GUS, 2010), which places it in fourth place among the largest cities of this country. It is an important and dynamically developing centre of economy, politics and culture. Among participants were students with bachelor's degrees, master's degrees and those doing postgraduate studies, as well as students of the University of the Third Age. The University of the Third Age is intended for students older than 60 years, regardless of their level of education, who, however, are no longer in full-time employment. The majority of the examined group were women ($n = 78$). The average age was 28 years, the youngest research participants were at age 20, whereas the oldest were 74. More than two thirds of the respondents had secondary education, almost 28 per cent completed master's degrees or other five-year study programs, whereas six per cent held a bachelor's degree. Nearly 70 per cent of the respondents were employed. Also 70 per cent of the research participants came from households which had at their disposal a household budget equal to or higher than the Polish average gross wages and salaries.

Sample two

Participants in the second sample ($n = 184$) were adult volunteers, working for their organisations without salary. They were involved in three different types of organisations: political ($n = 68$), religious ($n = 54$) and humanitarian aid ($n = 62$).

Research was conducted at meetings of non-profit organisations. The majority of the second sample were women ($n = 99$). The average age was 29 years, the youngest were 18, whereas the oldest were 71. More than 41 per cent of the respondents had secondary education, almost 43 per cent completed master's degree studies or other five-year studies,

whereas 13 per cent held a bachelor's degree. Nearly 69 per cent came from households which had at their disposal a household budget equal to or higher than the Polish average gross household income.

Sample three

Sample three ($n = 184$) consisted of socially inactive people. They did not differ from those in sample two, who were active, with regard to gender, age, level of education, and total monthly gross household income. For confirmatory factor analysis, sample two and sample three will be combined.

Measures

Sociopolitical Control Scale

We used the 17-item SPCS developed by Zimmerman and Zahniser (1991) in this study.

Convergent Validity of SPCS

In order to determine convergent validity, we correlated the variable measured by SPCS with variables similar to the theoretical viewpoint. To determine the convergent validity of the Sociopolitical Control Scale, we used the following: the GSES (Generalized Self-Efficacy Scale), the Directiveness Scale version D-15 (15 items) and the subscale of behavioural efficiency from the Social Competence Questionnaire in situations demanding social exposure (SE).

The Generalized Self-Efficacy Scale is a Polish adaptation of the measure developed by Jerusalem and Schwarzer (Juczyński, 2001). This measure is based on the self-efficacy theory formulated by Bandura (1977). The Directiveness Scale is a Polish adaptation of Ray's Directiveness Scale (Ray, 1976). The Polish Directiveness Scale measures the tendency to impose one's will on other people, as well as one's determination and assertiveness. It is described as a measure useful in managerial recruitment (Brzozowski, 1997). By contrast, the Social Competence Questionnaire (SCQ) measures the complex abilities needed in coping with specific-type social situations (Maczak, 2001). An individual acquires these abilities through social training. The SCQ consists of three competence subscales which condition behavioural efficiency in intimate situations (I), in situations requiring assertiveness (A) and in situations of social exposure (SE). The SE subscale comprises 18 items.

Data analytic strategy

First, we performed confirmatory factor analysis based on data from all samples to examine the two-factor SPCS model. The next step was to test the scale's convergent validity, which was done for sample one. Then we established intergroup differences in sociopolitical control and in its two dimensions, using data from sample two and sample three.

Results

In order to determine a model to fit the data, we performed a maximum likelihood confirmatory factor analysis. As can be seen in Table 1, we tested the two-factor model in this study. In all cases the discrepancy X^2 was statistically significant; however, this fit statistic is often referred to as a too stringent standard. The other fit measures – the goodness fit index (*GFI*), normed fit index (*NFI*) and comparative fit index (*CFI*) – were all above 0.7 in sample two and in combined samples two and three. These indices are sufficient for the model to be considered fitted to the data. The root mean square error of approximation ($RMSEA = 0.087$) reached an acceptable low level in sample one and in sample two. Taking into consideration the 90 per cent confidence intervals (CIs), the two-factor model is better fitted to the data in sample one and in sample two than in sample three (cf. Table 1).

Table 1. The fit statistics of SPCS confirmatory factor analyses.

	Two-factor Model of SPCS for Leadership Competence and Policy Control		
measures of fit	Sample 1 <i>n</i>=101	Sample 2 <i>n</i>=184	Sample 3 <i>n</i>=184
X^2	202.162	263.545	322.788
<i>df</i>	118	118	118
<i>p</i> -value	< 0.001	< 0.001	< 0.001
GFI	0.804	0.847	0.813
NFI	0.735	0.826	0.742
CFI	0.600	0.762	0.693
RMSEA	0.087	0.087	0.105
(90% CI)	(0.067, 0.106)	(0.074, 0.100)	(0.093, 0.118)

The SPCS factor loadings in CFA are shown in Table 2 for all considered samples. The leadership competence subscale is comprised of items from one to eight, while the second subscale consists of the last nine scale items. The lowest factor loading was observed in the eighth statement; it does not reach 0.3 level. Despite this, we did not eliminate the eighth statement owing to the current, preliminary stage of working with the Polish version of SPCS, which should be in accordance with the original version of SPCS.

Table 2. Factor Loadings in Confirmatory Factor Analysis (Two Factors).

SPCS Items	Sample 1 <i>n</i> =101		Sample 2 <i>n</i> =184		Sample 3 <i>n</i> =184	
	factors		factors		factors	
	LC	PC	LC	PC	LC	PC
SPCS 1	0.67		0.83		0.74	
SPCS 2	0.70		0.68		0.68	
SPCS 3	0.65		0.63		0.77	
SPCS 4	0.38		0.57		0.64	
SPCS 5	0.51		0.51		0.59	
SPCS 6	0.61		0.60		0.47	
SPCS 7	0.47		0.48		0.51	
SPCS 8	0.27		0.29		0.28	
SPCS 9		0.50		0.72		0.62
SPCS 10		0.61		0.50		0.37
SPCS 11		0.53		0.78		0.55
SPCS 12		0.55		0.84		0.57
SPCS 13		0.53		0.47		0.64
SPCS 14		0.60		0.55		0.61
SPCS 15		0.58		0.45		0.45
SPCS 16		0.36		0.49		0.49
SPCS 17		0.49		0.53		0.64

The overall reliability of SPCS and its two subscales (leadership competence and policy control) reached consecutive results: sample one (Cronbach's $\alpha = 0.8; 0.75; 0.77$), sample two (Cronbach's $\alpha = 0.85; 0.79; 0.83$), sample three (Cronbach's $\alpha = 0.84; 0.79; 0.79$). These results are sufficient enough for this measure to be used in psychological research.

Leadership competence, compared with the overall result of the SPCS and with policy control, was characterized by the highest correlations with the GSES ($0.46; p < 0.01$), D-15 ($0.64; p < 0.01$) and the SE subscale ($0.61; p < 0.01$). This result allowed us to consider the Sociopolitical Control Scale to be valid. As leadership competence refers to the ability to manage other people and to be dominant, the D-15 scale, the SE subscale, and the GSES were used to measure similar variables. In turn, policy control is not only dependent on an individual, but to a large extent on situational and systemic factors. Therefore, what is not surprising are the relatively low correlations between policy control and the variables, the definitions of which strongly emphasise the personal capabilities in social and task-oriented functions (cf. Table 3).

Table 3. Convergent Validity (GSES, D-15, SE).

	GSES	D-15	SE
Leadership competence	0.46**	0.64**	0.61**
Policy control	0.22*	0.28**	0.20*
SPCS (17 items)	0.41**	0.55**	0.47**

* $p < 0.05$, ** $p < 0.01$; (Pearson's r ; $n = 101$).

Both SPCS subscales are mutually correlated at the level of 0.29 (sample 1; $p < 0.01$), 0.40 (sample 2; $p < 0.001$), 0.43 (sample 3; $p < 0.001$). This result allowed us to believe that there was no interference between these two dimensions and that they measured other aspects of sociopolitical control. In all three samples both measures highly correlated with the overall result of the SPCS, namely leadership competence at the level of 0.75 (sample 1, $p < 0.001$), 0.78 (sample 2, $p < 0.001$), 0.81 (sample 3, $p < 0.001$) and policy control at the level of 0.86 (sample 1, $p < 0.001$), 0.88 (sample 2, $p < 0.001$), 0.88 (sample 3, $p < 0.001$). These results also provide convergent evidence for the SPCS.

Assessing the results distribution was needed for us to conclude the analysis of intergroup differences in sociopolitical control and in its two dimensions. By means of the Kolmogorov-Smirnov test, we established that both the Sociopolitical Control Scale results and its two subscales do not diverge from the normal distribution in sample two (SPCS $z = 1.23$, LC $z = 1.03$, PC $z = 0.53$; $p > 0.05$) and in sample three (SPCS $z = 1.34$, LC $z = 0.87$, PC $z = 1.20$; $p > 0.05$).

The involved participants (sample 2) are different from those uninvolved (sample 3) in policy control ($t(366) = 3.29$; $p < 0.01$). The effect size is small (Cohen's $d = 0.34$). The difference in sociopolitical control is at the statistical tendency level ($t(366) = 1.85$; $p = 0.065$). Policy control and sociopolitical control are higher among those involved in social activities (cf. Table 4).

Table 4. Means and Standard Deviations for Research Samples.

		Sample 1 <i>n</i> =101	Sample 2 <i>n</i> =184	Sample 3 <i>n</i> =184
Leadership Competence	<i>M</i>	26	27	27
	<i>SD</i>	4.31	4.58	4.32
Policy Control	<i>M</i>	27	32	30
	<i>SD</i>	5.55	6.03	5.30
SPCS	<i>M</i>	53	58	57
	<i>SD</i>	7.95	8.91	8.15

People who comprise sample two, in other words who are involved politically, religiously, or in humanitarian aid, differ with regard to both subscales (LC: $F(2, 181) = 7.407$;

$p < 0.01$; PC: $F(2, 181) = 33.966$; $p < 0.001$) and the SPCS general value ($F(2, 181) = 29.222$; $p < 0.001$). Those politically involved were characterized by a higher value than those involved religiously or in humanitarian aid. The size of the effect in relation to LC between the politically involved and the religiously involved is moderate (Cohen's $d = 0.65$), while in relation to PC and the SPCS it is substantial (Cohen's $d = 1.47$ and Cohen's $d = 1.35$ respectively) (cf. Cohen, 1992). As to the size of effect between the politically involved and those involved in humanitarian aid, it is moderate with regard to LC (Cohen's $d = 0.50$) and substantial for both PC (Cohen's $d = 1.14$) and the SPCS (Cohen's $d = 1.03$) (cf. Cohen, 1992). Means and standard deviations for the involved (sample 2) are shown in Table 5.

Table 5. Means and Standard Deviations for Involved Groups.

		P <i>n</i> =68	R <i>n</i> =54	H <i>n</i> =62
Leadership Competence	<i>M</i>	28	25	26
	<i>SD</i>	4.34	4.79	4.19
Policy Control	<i>M</i>	36	29	30
	<i>SD</i>	4.46	5.01	5.97
SPCS	<i>M</i>	64	54	56
	<i>SD</i>	7.02	7.69	8.63

P - politically involved; R – religiously involved; H – involved in humanitarian aid.

We observed differences between the involved and their groups of comparison, which included people similar to the involved with regard to gender, age, level of education and income. Those who were politically involved were characterized by higher PC ($t(134) = 6.68$; $p < 0.001$) and the SPCS ($t(134) = 5.05$; $p < 0.001$). The size of the effect was substantial in both instances, namely for PC: Cohen's $d = 1.15$ and for SPCS: Cohen's $d = 0.87$. Means and standard deviations for the uninvolved comparison group are shown in Table 6.

Table 6. Means and Standard Deviations for Uninvolved Comparison Groups.

		CP <i>n</i> =68	CR <i>n</i> =54	CH <i>n</i> =62
Leadership Competence	<i>M</i>	27	28	27
	<i>SD</i>	4.51	4.00	4.39
Policy Control	<i>M</i>	30	30	28
	<i>SD</i>	4.71	5.70	5.42
SPCS	<i>M</i>	58	58	55
	<i>SD</i>	7.70	8.75	7.94

CP – P comparison group; CR – R comparison group; CH – H comparison group

Discussion

Our study aimed to evaluate the quality of the measure developed by the Polish adapted SPCS. Since people in Poland are said to be relatively inactive socio-politically, every reliable measure of sources of civil activity and inactivity is valuable.

Adaptation of the Polish SPCS can be regarded as successful due to the fact that its statements do not contain any content specific for the American culture. The indices are high enough for the two-factor model to be considered fitted to the data in the preliminary study on a Polish sample. The values of the psychometric parameters allow us to claim that the SPCS is reliable and valid. The psychometric properties of the subscales – leadership competence and policy control as well as the whole Sociopolitical Control Scale – replicate across all three samples.

The whole group of involved participants (sample 2; $n=184$) differed from the whole group of uninvolved participants (sample 3; $n=184$) in policy control, but the effect size was small. The difference in sociopolitical control was at statistical tendency level. Policy control and sociopolitical control were higher among participants involved sociopolitically.

Taking into consideration people involved in various ways – politically, religiously and in humanitarian aid – those politically involved obtained the highest results. The differences were especially large in policy and general sociopolitical control. There were no statistically significant differences between those involved religiously and in humanitarian aid.

Our research has three major limitations. Firstly, the sample is not representative. However, this sample proved to be sufficient enough for the preliminary validation of the SPCS since Poland is an ethnically and religiously homogenous country. Further research is required to verify the psychometric parameters of the SPCS Polish version for bigger and representative samples. Additionally, for comparison purposes, using the revised SPCS (SPCS-R) would be valuable. Secondly, the results do not inform about validity based on participants' behaviour. They refer only to self-reporting tools: GSES, D-15 and ES. We would like to point out that wider presentation of Polish SPCS validity issues is planned in further articles. Thirdly, although all data were self-reported – acceptable in psychological research – it enabled us to understand the volunteers', activists', and isolates' psychological experiences.

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Polish Managers' Leadership Styles: Developing and Validating the Managerial Styles of a Leading Questionnaire

Abstract:

This article develops a new measure for assessing leadership styles. A six-factor solution was identified in exploratory factor analysis ($n = 139$) and then was verified in confirmatory factor analysis ($n = 477$). The final questionnaire encompasses 51 items grouped into six dimensions: *structuring*, *autocratic*, *participative*, *Machiavellian*, *rewarding*, and *distant*. The scales' internal consistency range from .61 to .79. Internal validity was initially supported by intercorrelations among six leadership styles. External validity was verified through correlation analysis between leadership styles and personality traits of the Costa & McCrae (1995) five-factor model.

Keywords:

leadership styles, managerial behaviours, questionnaire development, factor analysis

Streszczenie:

Niniejszy artykuł przedstawia konstrukcję nowej metody do pomiaru stylów kierowania. W wyniku eksploracyjnej analizy czynnikowej ($n = 139$) zidentyfikowano 6-czynnikowe rozwiązanie, które zostało zweryfikowane po przeprowadzeniu confirmacyjnej analizy czynnikowej ($n = 477$). Ostateczna wersja skali obejmuje 51 pozycji zgrupowanych w 6 następujących wymiarach: *strukturyzujący*, *autokratyczny*, *partycypacyjny*, *machiaweliczny*, *nagradzający*, *zdystansowany*. Spójność wewnętrzna skal waha się od .61 do .79. Trafność wewnętrzna została wstępnie potwierdzona w wyniku analizy interkorelacji między sześcioma stylami kierowania. Trafność zewnętrzna została zweryfikowana przeprowadzając analizę korelacji między stylami kierowania a cechami osobowości pięcioczynnikowego modelu Costy i McCrae (1995).

Słowa kluczowe:

style kierowania, zachowania menedżerskie, konstrukcja kwestionariusza, analiza czynnikowa

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Introduction

Systematic research on leadership styles dates back to the democratic/autocratic/*laissez-faire* distinction developed by Lewin, Lippitt, and White (1939). One- or two-dimensional leadership models, such as authoritarian-democratic, initiating structure-considerate, and task-oriented/–people-oriented have dominated early works on leadership (see Stogdill, 1974 for review). Since the early 80's research was mainly carried out within the so-called neocharismatic paradigm (House & Aditya, 1997), which resulted in developing new leadership theories, such as charismatic (Shamir, House, & Arthur, 1993), transformational (Bass & Riggio, 2006), and visionary (Kouzes & Posner, 2002). More recently, however, other conceptions have been introduced, which focus primarily on moral aspects of leadership, for example, ethical leadership (Brown, Trevino, & Harrison, 2005), servant leadership (van Dierendonck & Nuijten, 2011), and authentic leadership (Neider & Schriesheim, 2011). Researchers have also examined the “darker side” of leadership (Hogan & Hogan, 2001) focusing on such topics as toxic leadership (Steele, 2011), abusive supervision (Tepper, 2000), and destructive leadership (Einarsen, Aasland, & Skogstad, 2007). In every case, be it the classic approach, charismatic paradigm or destructive-dysfunctional conceptions of leadership, scholars were developing specific tools to measure leadership behaviour in accordance with a particular theory or model. However, there are some important concerns raised in the literature regarding the validity of existing leadership behaviour measures.

To begin with, the general weaknesses in the classic school of thought reside in an overly simplistic approach to measuring leadership styles. In classic models, namely, the autocratic-democratic (Tannenbaum & Schmidt, 1958), task-oriented–relations-oriented (Fiedler, 1971), initiation-consideration (Fleishman, 1953), and performance-oriented–maintenance-oriented (Misumi & Peterson, 1985), leadership is measured along a particular dimension. This two-tier approach to leadership has been criticized mainly for too superficially handling a very complex phenomenon (e.g. House & Aditya, 1997; Tracy, 1987; Yukl, Gordon, & Taber, 2002). To conquer this weakness, researchers introduced multidimensional models of leadership behaviour, most notably the transformational-transactional model validated with the Multifactor Leadership Questionnaire (MLQ) (Bass, 1990). While transformational leadership received substantial empirical support with respect to cognitive and personality correlates, as well as predictive power for performance and effectiveness criteria (see Bass & Riggio, 2006 for review), the structure of the MLQ measure has not been maintained in replication studies (e.g. Den Hartog, Muijen, & Koopman, 1997; Heinitz, Liepmann, & Felfe, 2005; Kanste, Miettunen, & Kyngas, 2006). Other multidimensional measures, such as the Leadership Profile Inventory based on the visionary leadership theory by Kouzes & Posner (2002), or measures

of authentic leadership (Neider & Schriesheim, 2011) have not been widely tested in empirical studies.

In addition, a large portion of measurement issues discussed in the literature pertains to the lack of cross-cultural validity of leadership models and their respective instruments (see e.g. Ayman and Korabik, 2010 for discussion). Concerns are raised with respect to methodological problems, ambiguous wording, cross-cultural variations in specific behaviours of generalized leadership styles (Smith, Misumi, Tayeb, Peterson, & Bond, 1989), or, as with MLQ, a lack of structural sustainability across cultures.

Leadership theories and many empirical findings suggest that diversified leadership behaviours often time cluster into general categories of person-oriented and task-oriented leadership styles. In other words, behaviours concerned with maintaining social settings such as consideration (Stogdill, 1974), concern for people (Blake and Mouton, 1982), and relations-oriented behaviours (Fiedler, 1971; Hersey, Blanchard, and Johnson, 2001) are strongly positively intercorrelated (Edwards, Rode, and Ayman, 1989). Similar conclusions hold for leading styles concerned with getting the job done, such as initiating structure (Stogdill, 1974), concern for production (Blake and Mouton, 1982), and task-oriented behaviours (Fiedler, 1971; Hersey et al., 2001). Also, it has been empirically demonstrated that both of these general leadership styles display positive (Jones, James, and Bruni, 1975; Judge, Piccolo, and Illies, 2004; Weissenberg and Kavanagh, 1972) and negative relationships with each other (Edwards et al. 1989). It seems that results about interrelationships between the two general leadership categories are still inconclusive. These differing results might point to the fact that leaders actively participate in organizational processes via various forms of leading styles (Bass and Bass, 2008), not one particular behavioural pattern. Nevertheless, it is worth investigating further how leadership behaviours relate to each other.

Leadership styles have also been widely studied in relation to various traits within the so-called trait leadership paradigm. It has been suggested that, among many different traits, personality characteristics, such as sociability, conscientiousness, dominance, adaptability, and proactivity (see e.g. Zaccaro, Kemp, & Bader 2004 for review), are predictive of various leadership criteria, namely, leadership styles, group performance, unit effectiveness, employee satisfaction, employee turnover rates, and so on. Among various personality inventories used in leadership studies, NEO-FFI's five-factor model (Costa & McCrae, 1995) for measuring personality (Big Five) has provided considerable explanatory and predictive power for the five different personality leadership style domains. Using the Big Five model, it's been demonstrated that extraversion is positively associated with transformational leadership or its components (e.g. Bono & Judge, 2004; Judge & Bono, 2000; Ployhart, Lim, & Chan, 2001) as measured by the Multifactor

Leadership Questionnaire (Bass, 1990), which encompasses such behaviours as serving as role models, motivating and inspiring followers, encouraging innovation and creativity, and individually considering followers needs and issues (Bass & Riggio, 2006). Openness to Experience has also been found to significantly correlate with transformational leadership components (e.g. Judge & Bono, 2000; Ployhart et al. 2001). Kaiser and Hogan (2011) have provided evidence that adjustment, a concept related to emotional stability, is positively associated with enabling leadership (interpersonally oriented), but was not related to task-oriented behaviours. In the most recent metaanalysis, DeRue and others (2011) demonstrated that agreeableness and extraversion predicted considerate leadership behaviours, which reflected the leader's interpersonal orientation. DeRue and others (2011) have also provided evidence, in agreement with earlier research, that conscientiousness is positively related to task-oriented behaviours. In all, research has suggested varying relationships of particular leadership behaviours with personality traits measured by the five-factor model.

As presented in the above overview of past and current empirical investigations, the research mainly concentrated on examining leadership behaviour along two grand dimensions of person orientation and task focus. There is insufficiency in conceptualising leadership behaviour as consisting of multiple and diverse behaviours. Also, there are different results as to the direction of relationships between general categories of person-oriented and task-oriented behaviours. In addition, many empirical studies prove that the universality of any leadership styles measure appears to be doubtful. Some agreement has been reached, however, in regards to the predictive power of certain personality traits in relation to managerial behaviour, but these results are not consistent across all studies. Thus, it seems justifiable to develop a new measure and validate it on a sample originating from a specific and distinct culture to address the above-stated problems of dimensionality, descriptive clarity of particular behaviours, and authentic behaviour exploration of current organization leaders outside Western cultures.

In an attempt to respond to the existing measurement ambiguities in assessing leadership styles, this study aimed at empirically substantiating the current state of leadership behaviours among Polish organizational leaders. I used classical and contemporary theories that is, autocratic, democratic, Machiavellian, charismatic, transformational, transactional, and *laissez-faire* (see e.g. Bass & Bass, 2008 for a review of leadership theories) as a theoretical framework for developing items in the new questionnaire to measure leadership styles among Polish managers. I believe that an attempt to operationalise leadership styles upon items drawn from well-established leadership theories will demonstrate to some degree the actual and current behavioural patterns among Polish managers. Since items were written specifically to reflect each of the six underlying

leadership theories, a multiscale measure is expected. It is important to emphasize that my intention was to explore the most salient leading styles of Polish managers using well-established leadership theories as a platform. Specifically, I wanted to move away from confining leadership behaviours into one using existing leadership models. Rather, I concentrated on exploring active managers' genuine responses. This, I believe, will allow us to make preliminary appraisals of Polish leaders' behavioural orientation in demonstrating their prevailing leadership styles.

In sum, the primary goal of our study was to identify patterns of behaviours of Polish organizational leaders and to organize these behaviours into more general leadership category styles. To achieve this goal, I first conducted an exploratory factor analysis on newly generated items. This made it possible to identify a factor structure of the new measure. Next, confirmatory factor analysis was applied to verify the measure's structure. Also, descriptive, reliability, internal validity, and external validity analyses were carried out to present psychometric properties of the new instrument.

Study 1: Identifying the Factor Structure of the Managerial Styles in the Leading Questionnaire²

Development of Items

Preparation for drawing a pool of items for the questionnaire started with analysing thoroughly the classical and contemporary leadership patterns of behaviour, namely, the autocratic, democratic, Machiavellian, charismatic, transformational, transactional, and *laissez-faire* conceptions (see e.g. Bass & Bass, 2008 for review). Items were formulated to reflect different leading styles encompassed by the above-leadership models. They were written as present-tense statements, with each one referring to a specific leadership behaviour. The questionnaire was assumed as a self-assessment form to be filled out by the managers.

Twelve judges, six psychologists and six management professionals, evaluated the initial pool of 125 items in terms of language clarity and relevance to organizational leadership practices. It was decided to rephrase 20 items to attain better certainty in understanding. Also, words which seemed vague or too complex were substituted with synonyms so that they presented no difficulty in understanding. This way the items adequate face-validity was established. Lastly, Gunning's fog index was calculated and its score 9.21 indicated that the items could be understood by a wide audience.

² Managerial Styles of Leading and its acronym MSL is an English translation of the original Polish title: Style Kierowania Menedżerów (SKM). The questionnaire's English title will be used throughout this article.

The questionnaire starts with a brief introduction of its purpose and respondents are asked to provide information about their age, gender, professional tenure, tenure at their current managerial position, and type of current business entity (foreign, local, own company, not-for-profit, government institution). Then they are instructed to decide whether a specific behavioural item applies to their leading style. A five-point Likert-type scale – from 5 - ‘definitely applies to me’ to 1 - ‘doesn’t apply to me’ – was used.

Method for Study 1

Participants and procedure

Data using a 125-item preliminary version of the measure were obtained in 2008 from 139 Polish managers working at different hierarchical levels in various organizations. Study participants were enrolled in the executive MBA program at one of the private business academies in Warsaw. A majority of the participants were men (79.1%), 21.9% were women. Forty managers (28.8%) were top executives and managing directors. There were 39 middle-level managers (28.0%) and 60 first-line managers (43.2%). Mean work experience of participating managers was 11.67 years ($SD = 4.39$). The mean age in the sample was 36.44 years ($SD = 11.38$).

Exploratory factor analysis

In order to identify the factor structure of leadership behaviours, exploratory factor analysis using SPSS application was applied in the first step. This allowed us to examine groups of items (factors) underlying separate leadership style dimensions. The oblique (promax) method of rotation was selected since correlations between factors were expected. This is in line with a general argument by Costello and Osborne (2005), which advises social science researchers to use non-orthogonal rotations, for the sake of not losing valuable information if the factors are correlated.

Results for Study 1

Factor selection and item reduction

Factor selection was based on a scree plot criterion as well as on examining the content of each item (interpretability criterion) within a given factor (Worthington & Whittaker, 2006). As a result, six factors were retained with factor loadings greater than .4. The first factor accounted for 8.77% of the variance, second – 8.42%, third – 3.88%, fourth – 3.59%, fifth – 2.80%, and sixth – 2.72%.

The six-factor solution comprised 68 items and the variance explained was 30.18%. The modest amount of variance accounted for by the six factors is most probably results from a relatively large number of measured items in relation to the size of the initial sample. The six extracted factors were considered for further analysis.

Additionally, to refine the factor content, all items comprising individual factors were analysed with an aim to noticing any possible mixed content of an item or redundancy in items (see e.g. Worthington & Whittaker, 2006 on criteria for item deletion or retention). This analysis resulted in dropping 10 items, so that 58 items were retained for further verification of the measure's structure. Since confirmation of the identified factor structure was planned as the next step in the measure's development, I decided to define particular leadership styles after CFA analysis had been carried out and the individual items per scale finally accepted.

Study 2: Confirming the MSL Factor Structure

Method for Study 2

Participants and procedure

Data for this study were collected throughout 13 months starting in January 2009 and ending February 2010. Four hundred-and-seventy-seven organizational leaders ($n = 477$) took part in the survey. There were 332 men (69.6%) and 145 women (30.4%) in the sample. The organizations' upper echelon hierarchy (presidents, vice-presidents, managing directors) was represented by 140 (29.4%) managers, with 110 (23%) being middle-level managers, and 227 (47.6%) first-line managers. Mean work experience of participating managers was 15.11 years ($SD = 8.56$), and mean tenure at the managerial position was 6.08 years ($SD = 5.62$). The participants' mean age was 40.39 ($SD = 10.03$).

The questionnaires were administered at prearranged meetings with managers, during which any questions about the research study were answered. In most cases, the questionnaires were filled out at the time of administration. Any questionnaires that were completed at a later date were delivered to the researcher by registered mail.

Confirmatory factor analysis

In order to verify the MSL measure, SPSS AMOS 17.0 software was used to run the confirmatory factor analysis (CFA).

CFA is used when a researcher tests for a validity of a postulated model based on theory and/or empirical research (Byrne, 2001). Thus, the main focus is on determining the measurement impact of items on separate factors (latent variables), which is represented by the values of loading coefficients (path coefficients). Also, a researcher is interested in how well the entire model fits to the empirical data, which is tested by various fit indices (see e.g. Brown, 2006 for review on different indices assessing quality of fit used in specific measurement cases).

Results for Study 2

Current CFA model parameters were estimated based on the maximum likelihood (ML) estimation method. First, I tested the stability of the six-factor model with a 58-item exploratory factor analysis model. Six items with the weakest path coefficient and one item that cross-loaded on two factors were removed, thus shortening the measure to 51. The fit indices in the six-factor solution indicated an overall well fitting model ($\chi^2 = 2287.993$, $\chi^2/df = 1.986$, RMSEA = .05, GFI = .83, AGFI = .82). Also tested were a one-factor model where all items were loaded onto one leadership factor, and a two-factor model with all items loading onto two leadership factors. For the one-factor model the following fit parameters were obtained: $\chi^2 = 2912.288$, $\chi^2/df = 2.435$, RMSEA = .07, GFI = .75, AGFI = .71. For the two-factor model fit parameters were $\chi^2 = 2410.725$, $\chi^2/df = 2.06$, RMSEA = .05, GFI = .82, AGFI = .80. Even though the two-factor model and the six-factor model demonstrated a comparable fit to the data, theoretical criticism and empirical investigations (see Introduction) supported the multidimensionality of leadership styles. Thus, the six-factor solution for the MSL questionnaire was selected for further investigation. Table 1 presents standardized values for 51 path coefficient items in the six-factor solution along with the names of latent variables, that is, with the resulting leadership styles.

Table 1. CFA factor loadings for the MSL.

	Factor loadings					
Factor label and respective items	1	2	3	4	5	6
I: Structuring						
I frequently ask followers about tasks currently in progress	.57					
I demand followers to carefully analyse their tasks	.53					
I personally provide feedback to followers about their job	.52					
I clarify complex tasks so that they are completely understood by followers	.49					
I correct followers errors before a problem occurs	.49					
I prevent making mistakes by followers	.49					
I explain in detail what my followers should be doing	.47					
I assign tasks according to followers' skills and competences	.46					
I know who needs my help while working on tasks	.44					
I can foresee followers' mistakes	.43					
I do not tolerate mistakes at work, hence I hold on to the principle: "better to prevent than remedy"	.40					
I support taking on demanding tasks by followers	.38					

	Factor loadings					
2: Autocratic						
I make sure that at work followers stick to my directives	.62					
I believe that it is imperative to utilize well-tested methods in a work environment	.52					
I believe that exemplary punishment disciplines staff	.48					
My authority is a result of the formal position I hold within the organization	.47					
I provide followers with "step by step" instructions on how to accomplish tasks	.46					
I discuss followers' individual mistakes during departmental meetings	.45					
My followers realize that lack of goal attainment may result in being expelled from the department	.31					
3: Participative						
I make my decisions together with followers		.60				
It matters to me that followers support my ideas		.56				
Any of my decisions are preceded by a debate with followers		.54				
I encourage followers to come up with their own solutions		.42				
My followers identify with me		.34				
My followers are as close to me as a family		.33				
4: Machiavellian						
I manipulate my image			.62			
I lie if it's necessary to reach a goal			.59			
Not many people know what I truly think			.57			
I intentionally behave in unpredictable ways			.52			
My frequent achievements are the result of my cleverness			.50			
I can manage to hide my true intentions			.49			
There is always someone to blame			.49			
I'm convinced that the objectives of followers and those of superiors are different, but only I know this			.45			
I turn a blind eye, when my followers act "unethically", as long as they attain their goals			.42			
I impose my will on followers			.40			
I don't consult followers in regard to work matters			.22			
5. Rewarding						
I reward followers' efforts				.71		
My followers know that they will be rewarded for their achievements				.69		

	Factor loadings					
Successful accomplishment of assignments is associated with my acknowledgment					.45	
I often let my followers know that they are great					.34	
I often explain company's vision of development to followers					.34	
I spend time educating followers about the organization's vision and mission					.27	
6. Distant						
I see mistakes only after followers have completed the task						.49
I intervene only when a problem has already occurred						.46
I accept any result of the followers' work						.45
I only recognize followers' accomplishments						.45
I don't get preoccupied with followers' mistakes						.43
I consider working meetings as a waste of time						.39
I usually agree with the majority during decision making						.36
I am interested in the end-result of a task as opposed to its progress						.34
My daily communication with followers is "short and to the point"						.16

Note: Items are an English translation of the Polish version of the questionnaire. All parameter estimates shown are standardized and statistically significant at $p < .001$.

Two of the fit indices, χ^2/df , RMSEA, indicate an excellent fit. It needs to be noted however, that, according to some authors, the GFI index, in order to reveal a good fit, should achieve a value of .90 or be even closer to 1.00 (see e.g. Byrne, 2001 for discussion). Others (e.g. Cole, 1987) suggest that an adjusted GFI value greater than .80 usually indicates a good fit. In this model the GFI value is .83, which can probably be attributed to the model's complexity, that is, the relation of the sample size to the large number of parameters that needed to be estimated. Overall, the presented fit indices indicate a good fit of the six-factor MSL model to the empirical data.

Descriptive statistics for the six-factor outcome of CFA are displayed in Table 2.

Table 2. Descriptive statistics for MSL scales.

Scales	1	2	3	4	5	6
M	49.17	22.28	21.49	27.71	23.53	22.54
SD	5.66	4.73	3.54	6.98	3.62	5.10
Skew	-.29	-.03	-.55	.38	-.64	.43
Kurt	.05	-.37	.49	-.11	.69	.75

Note. $n = 477$. 1 = Structuring; 2 = Autocratic; 3 = Participative; 4 = Machiavellian; 5 = Rewarding; 6 = Distant.

As shown in Table 2 the values of symmetry coefficients, skewness and kurtosis, show that all parameters are between – 1 and 1. This indicates that the data are univariately normally distributed.

Reliability

Subscale reliabilities (see Table 3) weres estimated using Cronbach's α coefficient of internal consistency (Cronbach, 1951). These estimates are presented for the CFA outcome of six individual factors encompassing 51 items.

Table 3. Cronbach's α estimates of MSL scales.

Scale	α CFA ($n = 477$)
Structuring	.79
Autocratic	.68
Participative	.62
Machiavellian	.74
Rewarding	.64
Distant	.61

The scale score internal consistency coefficients range from .61 to .79 and reveal an acceptable level of internal consistency for individual factors. Nevertheless, internal consistency coefficients of four factors, namely, *autocratic*, *participative*, *rewarding*, and *distant* are lower than .70, a level regarded as good or adequate (Nunnally, 1978 as cited in Kanste et al., 2006). As suggested by Loewenthal (1996), however, reliability of .60 may be regarded as acceptable for scales with fewer than ten items, as is the case with the mentioned factors. The internal consistency coefficient represents and informs about the homogeneity of a given scale. In the cases of the four-mentioned scales, it appears that the corresponding measured construct is heterogeneous in nature.

Defining Leadership Styles

The CFA outcome is a 51-item measure consisting of six dimensions. These dimensions are the general leadership styles, which encompass the managers' diverse behavioural patterns. They were assigned names, or better said, labels, since one-word names given to a cluster of items is merely a tag, which differentiates one group of specific behavioural patterns from another. In order to get complete insight into a specific leadership style, it shall be examined with reference to all items comprising the style. The leadership styles' names and the resulting definition are the following:

Structuring leadership style embraces clarifying tasks, focusing on flawless execution of work, demanding careful task and duty analyses, and addressing high quality results; it also shows a close monitoring of, and good orientation about, the followers' professional capabilities.

The autocratic leadership style represents controlling and maintaining a high work discipline, focusing on task implementation, emphasizing power and authority, demanding compliance with standards, and demonstrates punitive behaviours.

Participative leadership style indicates supporting the followers' participation in decision-making processes, encourages proposing new solutions and ideas, emphasizes the importance of strong commitment, and also maintains close relationships with followers.

The Machiavellian leadership style denotes focusing on self-presentation techniques, manipulating information, demonstrating and accepting low standards of ethical and moral conduct, authoritatively communicating with followers, and imposing one's own will on others.

Rewarding leadership style focuses on recognition for achievements, praising, frequent rewarding, communicating vision, mission and organizational goals, sharing expert knowledge.

Distant leadership style represents low commitment to followers' work processes, focusing merely on work outcomes, ignoring importance of quality of work processes, evasive approach to meetings with followers, delegating all issues concerning work processes to followers.

Summarizing results of Study 2, the initial six-factor model the was tested with confirmatory analysis. The CFA results showed a very good fit of the six-factor MSL model to the empirical data. Thus, support was found for the factor structure from the exploratory phase in confirmatory analysis with a new sample of organizational leaders.

Validating the Managerial Styles of Leading Questionnaire

Internal validity

For the first phase of validation I used data from confirmatory factor analysis of $n = 477$ managers. Internal MSL validity was assessed by examining intercorrelations between subscales, which are presented in Table 4. As discussed in the Introduction, theoretical and empirical findings suggest that leadership styles are interrelated depending on the underlying general behavioural pattern. Thus, positive correlations were expected between MSL dimensions representing orientation towards maintaining social settings (person orientation), that is, among *structuring*, *participative* and *rewarding* leadership

styles. Also, positive relationships were expected between dimensions representing task orientation, namely, among *structuring*, *autocratic* and *Machiavellian* styles. In addition, I foresaw that person orientation behaviours of *participative* and *rewarding* leadership styles and task orientation behaviours of *autocratic* and *Machiavellian*, as well as *distant* leadership styles would correlate negatively. Results of this analysis are presented in Table 4.

Table 4. Intercorrelations among MSL scales (n = 477).

Scales	1	2	3	4	5	6	
1.	Structuring	–					
2.	Autocratic	.47** (.61)	–				
3.	Participative	.26** (.35)	.09	–			
4.	Machiavellian	.14**	.32** (.36)	-.11* (-.19)	–		
5.	Rewarding	.37** (.38)	.17**	.39** (.39)	-.01	–	
6.	Distant	-.14** (-.33)	.23** (.24)	.06	.31** (.40)	-.08	–

Note. ** $p < .01$, two-tailed. * $p < .05$, two-tailed. Correlations between latent factors are presented in parentheses.

Results

As expected, *structuring* leadership style revealed positive significant relationships with *participative* ($r = .26$), *rewarding* ($r = .37$), *autocratic* ($r = .47$), and *Machiavellian* styles ($r = .14$). Also, *structuring* behaviours negatively significantly correlated with the *distant* leadership style ($r = -.14$). As predicted, significant relationships were found for the *participative* leadership style and *rewarding* ($r = .39$), and for the *participative* relationship with the *Machiavellian* ($r = -.11$) style. Results in Table 4 are consistent with expectations regarding positive significant correlation of the *autocratic* and *Machiavellian* ($r = .32$) behaviours. Surprisingly, the *autocratic* leadership style was positively related to *distant* ($r = .23$) and *rewarding* ($r = .17$) leadership styles and did not relate significantly to the *participative* ($r = .09$) style. *Machiavellian* leadership positively significantly correlated with *distant* ($r = .31$) behaviours. Also, the *rewarding* style displayed negative correlation with the *distant* leadership style, but the relationship was weak and not significant ($r = -.08$).

In sum, correlations between variables displayed in Table 4 are consistent with expectations of the relationships between MSL leadership styles. This is in line with earlier theoretical claims and empirical findings (e.g. Judge, Piccolo, & Illies 2004) that different leadership behaviours will show tendencies to cluster via intercorrelations into task-oriented and people-oriented behaviours.

External validity: personality correlates of MSL leadership styles

As presented in the Introduction, the NEO-FFI five-factor personality model (Costa & McCrae, 1995) has provided considerable evidence to explain and predict the five personality domains for different leadership styles (e.g. Bono & Judge, 2004; DeRue et al. 2011; Judge & Bono, 2000; Ployhart et al. 2001).

Thus, to ascertain the MSL measure's external validity, the relationships between six MSL leadership styles and the Big Five personality dimensions (Costa & McCrae, 1995) were examined. According to the findings I expected positive relationships between interpersonally-oriented behaviours reflected in *structuring*, *participative and rewarding* leadership styles and extraverted personality traits – openness to experience, agreeableness and emotional stability. Moreover, I expected that conscientiousness would be positively related to task-oriented behaviours of *structuring*, *autocratic* and also *Machiavellian* leadership styles. Also, I expected that *distant* leadership style would be negatively associated with extraversion, openness to experience, agreeableness, and conscientiousness, and positively related to neuroticism.

Method for Study 3

Participants and measures

For this phase, data were gathered together with the above-presented CFA study (see Study 2). Thus, along with the MSL questionnaire, 333 managers filled out a 60-item Polish adaptation of NEO-FFI (Costa & McCrae, 1995) by Zawadzki, Strelau, Szczepaniak, & Śliwińska (1998). In this sample 218 (65.5%) were men and 115 (34.5%) were women. Ninety-nine managers in the sample were executives and managing directors (29.7%). There were 70 middle-level managers (21%) and 164 first-line managers (49.20%). Mean work experience of the managers was 16.54 years ($SD = 8.82$). The mean age of the participants was 41.53 ($SD = 10.29$).

Results for Study 3

Table 5 presents correlations between personality traits and leadership styles, Cronbach's α estimates for MSL and NEO-FFI measures, and descriptive statistics for the current sample.

Table 5. Correlations between personality traits (NEO-FFI) and leadership styles (MSL), Cronbach's α estimates and descriptive statistics for MSL and NEO-FFI ($n = 333$).

Measure	N	E	O	A	C	
	a	.82	.72	.65	.66	.77

Structuring	.77	-.11	.24**	.05	.03	.39**
Autocratic	.62	.20**	-.03	-.26**	-.14*	.16**
Participative	.57	-.01	.32**	.12*	.16**	.20**
Machiavellian	.74	.23**	-.01	-.13*	-.41**	-.06
Rewarding	.59	-.16	.34**	.22**	.08	.25**
Distant	.60	.33**	-.15**	-.29**	-.08	-.18**
M	26.51	45.33	40.24	43.25	47.75	
SD	8.12	5.96	6.62	5.71	5.10	

Note. $n = 333$. N = Neuroticism; E = Extraversion; O = Openness; A = Agreeableness; C = Conscientiousness; * $p < .5$, two-tailed. ** $p < .01$, two-tailed.

Consistent with the expectations, interpersonally oriented behaviours i.e. *structuring*, *participative* and *rewarding* leadership styles positively significantly correlated with extraversion ($r = .24$; $r = .32$; $r = .39$, respectively). As expected *participative* leading style was positively significantly related to openness to experience ($r = .12$) and agreeableness ($r = .16$); however, it was not related to neuroticism ($r = -.01$). *Rewarding* leadership style was, according to expectations, positively significantly correlated with openness to experience ($r = .22$), and negatively, not significantly with neuroticism ($r = -.16$). However, *rewarding* displayed a virtually nonexistent relationship with agreeableness ($r = .08$). Also, as expected, task-oriented behaviours of *structuring* and *autocratic* leadership styles positively significantly correlated with conscientiousness ($r = .39$; $r = .16$, respectively). Contrary to expectations, though, *Machiavellian* behaviours did not correlate positively with conscientiousness ($r = -.06$). *Distant* leadership style was, as predicted, positively significantly related to neuroticism ($r = .33$) and negatively significantly to extraversion ($r = -.15$), openness ($r = -.29$) and conscientiousness ($r = -.18$); it was, however, virtually not related to agreeableness ($r = -.08$).

In sum, consistent with other empirical findings, Study 3 shows that interpersonally-oriented behaviours defined by MSL dimensions of *structuring*, *participative* and *rewarding* leadership styles were positively related to the Big Five traits of extraversion, openness to experience, emotional stability and agreeableness. Task-oriented behaviours, that is, *structuring* and *autocratic* styles were positively related to conscientiousness. *Laissez-faire* behaviours, reflected by the *distant* leadership style in MSL terms, exhibited a positive relationship with neuroticism and negative relationships with extraversion, openness

and conscientiousness. Thus, the above-presented results suggest that the MSL questionnaire has external validity.

Discussion

The purpose of this research was to present the development, factorial structure, and internal and external validity of the Managerial Styles of Leading (MSL). Having gathered 477 self-assessments from Polish managers working at different hierarchical levels, a preliminary version of the managerial leadership styles questionnaire was successfully developed. An assumption was made (see Bass & Bass, 2008 for review) for the multidimensionality leadership behavioural patterns. Six factors were identified in exploratory factor analysis and the six-factor model was supported by confirmatory factor analysis. Internal consistency estimates were acceptable; however, their values indicate that four factors are heterogeneous. Internal validity of the MSL leadership styles supports the notion that diversified leadership behaviours stem from two fundamental leadership responsibilities, that is, they focus on task completion and on maintaining positive relations with followers. Correlating the MSL dimensions with personality traits measured by NEO-FFI provide initial confirmation that the MSL questionnaire is externally valid. Considering the above, it may be concluded that MSL holds promise as a valid and reliable measure of leadership styles.

The MSL leadership styles - *structuring*, *autocratic*, *participative*, *Machiavellian*, *rewarding*, and *distant* - represent diversified behaviours of Polish organizational leaders captured by scaled items. Theoretically this research makes an important contribution. Polish organizational leaders' self-assessment has yielded unique leadership behaviours. These leading styles are different from the charismatic, transforming, servant or mentoring types, which are currently predominant in the literature. Obviously it would require a separate empirical investigation to determine the causes for the specific behaviours yielded in this research. However, it may be carefully implied that the identified styles reflect current and very specific organizational circumstances of leadership in Poland. It seems that leaders' self-assessed behaviours seem to mirror their adjustment to present economic and operating demands. Thus, this research has made a first attempt at empirically identifying unique managerial behaviours, different in nature from the ubiquitous charismatic-transformational orientation. However, factors that display particular behaviours of Polish organizational leaders need to be substantiated in a separate empirical investigation.

In general, the MSL measure indicates that *structuring* leadership style, in other words, an active leading style orientated towards achieving organizational goals, correlates

with other leadership behaviours concerned with both task completion (*autocratic* and *Machiavellian* behaviours) and with development of constructive, professional relationships with followers (*participative* and *rewarding* behaviours). In fact, *structuring* leadership style represents behaviours, which encompass attitudes and activities mainly corresponding to concern for task completion, but also, to a lesser extent, though, concern for people – the two dimensions well known from classical work on leadership styles (Stogdill, 1974). These preliminary findings parallel Bass and Bass's (2008) conclusion that leaders rarely manage *via* one particular, unchangeable style. Rather they may choose from an array of behaviours, which fall into two general categories of person- and task-oriented managing styles depending on the situation. Thus, the MSL internal inventory presented in this research supports the existing conclusion that leadership is manifested through behaviours facilitating authentic interpersonal relations as well as goal focused and structuring style of managing.

In leadership literature, primary attention is paid to leader traits, among which personality has been the major and ever-current focus (e.g. DeRue et al. 2011; Kaiser & Hogan 2011). Assessing correlations between six MSL leadership factors and five personality dimensions (the Big Five model) has provided preliminary support for external validity of the MSL questionnaire. Agreeableness and conscientiousness exhibited the strongest significant correlations with MSL leadership styles, followed by extraversion and neuroticism. Results of this analysis show some similarities to what has been found in other studies so far. In the current research agreeableness demonstrated the strongest negative correlation with *Machiavellian* leadership style, that is, manipulative, authoritarian, yet task-oriented behaviours. In meta-analysis by Judge, Bono, Ilies, and Gerhardt (2002) agreeableness exhibited the weakest relationship to the aggregate leadership index comprised of leadership emergence and leadership effectiveness. In a longitudinal study by Ployhart, Holtz, and Bliese (2002) agreeableness demonstrated a somewhat stronger relationship with displays of leadership adaptability. On the other hand, the most recent metaanalysis by DeRue and colleagues (2011) has demonstrated positive relationships of agreeableness with consideration and transformational leadership styles and the strongest relationship, in comparison to other personality traits, with contingent rewards. It may be thus inferred that in the Polish sample agreeableness is a managerial attribute manifesting itself in cooperative, trustworthy, and empathetic behavioural patterns. In addition, this research study, similarly to numerous other studies (DeRue et al. 2011), has demonstrated positive relationships of conscientiousness and extraversion with fundamental leadership behaviours oriented towards achieving goals and maintaining a good social environment among followers. Although causal inferences cannot be made, it might be assumed that, among Polish leaders, cooperative (high in agreeableness),

sociable (high in extraversion) and well organized, disciplined individuals (high in conscientiousness) engage in constructive leadership behaviours, labelled here *structuring* leadership style. These relationships have been well documented in metaanalysis by Judge and others (2002) where extraversion exhibited the strongest relationship to aggregate index of leadership and by the latest metaanalysis by DeRue and others. (2011), which concluded that conscientiousness is the most consistent predictor of leadership.

The practical implication gained from the current study is such, that, given future validation studies of the MSL questionnaire, leadership assessment styles for selection and/or advancement may be based on the most current, culturally adjusted leadership style questionnaire. Particular leadership styles, especially *distant* and perhaps *Machiavellian*, may not be desirable in most leadership situations. Such early diagnosed tendencies would reduce the possibility of selecting or promoting individuals with potentially destructive behavioural tendencies. Also, it seems essential to repeatedly verify managerial leadership behaviours, for they are changing and becoming more diversified along with external conditions influencing leadership.

In sum, Managerial Styles of Leading is a new measure, which assesses representative Polish managerial leadership styles. Its psychometric properties support the multidimensionality notion of organizational leadership behaviours.

Limitations

Although MSL holds promise as a good measure of leadership styles, further research is needed to conquer this study's several limitations.

First, convergent and discriminant MSL validity should be examined by assessing relationships between MSL scales and well established leadership styles, like initiating leadership structure consideration, transformational leadership, servant leadership and destructive leadership behaviours. Also, future research should be directed at conducting criterion-related validity studies to relate the identified leadership styles with criteria of leadership performance and effectiveness.

Second, stability of the six-factor structure with a questionnaire rating form should be examined. It should be noted again that the current research approach was based on managers' assessment of their own leadership styles. Leadership, however, does not lie only within the person holding a leadership position but also in the followers' minds (Lord & Emrich, 2000), making it necessary to focus on followers' leadership behaviour perceptions in future research.

New research is required with items added or altered in the four scales – *autocratic*, *participative*, *rewarding*, and *distant* – to improve their internal consistency values. Also,

temporal validity of the scales needs to be assessed. It would provide evidence for managerial behaviour stability over time as self-assessed and rated.

At last, in order to empirically replicate the structure of the questionnaire, a larger and more diverse sample is required in future studies. The aim here was to generate current, genuine responses to behavioural items with no attempt to enclose them into a pre-supposed scheme of charismatic, transformational, transactional or any other leadership behaviour structure provided by existing leadership measures. Since this is merely preliminary research to empirically examine leadership styles based on the leader's own perception, interpretations should be done with caution.

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The Parenthood's intergenerational transmissions in adapting to modern life challenges

Abstract:

The study was undertaken to identify intergenerational transmission in the patterns of early adulthood developmental tasks, with particular emphasis on parenthood. We attempted to explain how intergenerational values are transmitted to young adults when they become parents and how they realize those parental values that are expected of them. The study was performed on 109 three-generation families, N=407 persons. The results illustrated the diversity of intergenerational transmission, depending on a certain cohort's sex and membership. Women were found to be more susceptible to transmitting family models.

Keywords:

developmental task, parenthood, changes in family life patterns, intergeneration transmission, young adult

Streszczenie:

Celem prezentowanych badań było poszukiwanie przejawów transmisji międzypokoleniowej w zakresie wzorców realizowania zadań rozwojowych wczesnej dorosłości ze szczególnym uwzględnieniem rodzicielstwa. W ramach zbudowanego modelu badawczego, starano się wyjaśnić wpływ transmisji międzypokoleniowej na podejmowanie i realizowanie rodzicielstwa przez młodych dorosłych w obszarze: wartości przypisywanym zadaniom oraz kolejności i oczekiwanym czasie ich realizacji. W trakcie postępowania badawczego przebadano 109 trójpokoleniowych rodzin (N=407osób). Wyniki badań zobrazowały różnorodność procesu transmisji międzypokoleniowej głównie w zależności od płci i przynależności do danej kohorty. Wykazano także częstsza podatność na transmisję rodzinnych modeli zachowań wśród kobiet oraz silniejsze procesy transmisji między sąsiednimi pokoleniami.

Słowa kluczowe:

transmisja międzypokoleniowa, wczesna dorosłość, podejmowanie rodzicielstwa, relacje trójpokoleniowe

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Introduction

Exploring different intergenerational transmission aspects and conditions in respect to parenthood was inspired by discussions on the adequacy of analysing and assessing developmental tasks as a construct (Arnett, 2004, 2007; Trempała, 2000). Taking a decision to become or not become a parent or postponing parenthood (called ‘delaying syndrome’) may indicate that the hitherto prevailing model for realizing early adulthood tasks has collapsed or changed considerably.

The studies of intergenerational transmission studies usually relate to three areas. The first one concerns describing and emphasizing continuation (similarity) in a family treated as a transmittable indicator. This area includes studies of moral norms and religiousness in the family, conducted by Dyczewski (1981); Hoge, Petrilo, Smith (1982), or parental attitudes studies by Hiltin (2006); Parsons, Adler, Kaczala (1982); Tyszkowa (1988); Werner (1991); Ziemska (1975, 2009). There are also numerous studies concerning similar values and expectations towards the future. This aspect has been discussed by Gans & Silverstein (2006); Liberska (2004, 2006); or Trommsdorf (1994); Tyszkowa, (1985); and Valk (2008). Furthermore, there are noteworthy intercultural studies concerning transmitting (similarly) life satisfaction (Katz, 2009); the level of democracy in the family (Miklikowska, Hurme, 2011); or identity and national values (Muldoon, Mc Laughlin, Trew 2007). Problems frequently studied in this area are inappropriate, risky behaviour, or certain patterns of addiction. They have been discussed by, for example, A. Doliński (2002); G. Lowe, R. Foxcroft, Sibley (2000); Thornberry (with team, 2003) or Ryś (2002). Their studies indicate and emphasize of certain family behavioural continuity patterns, especially patterns of addictions.

The second area focuses on the search for mechanisms of dependencies in similarities, (not always sameness), between parents and children, and their conditioning (factors favourable to this process’s effectiveness). The search relates to the influence of birth order and gender (Kulik, 2004, Farnicka, 2013), the climate of family communication (Grygielski, 1999), different ways in performing parental roles (Hiltin, 2006, Tyszkowa, 1990, Rostowska, 1995, Czerwińska – Jasiewicz, (1997), ethnic status (Valk, 2008), marriage satisfaction (Braun-Galkowska, 1985, 1992, Galkowska, 2002), sex identity (Rawa–Kochanowska, 2004), or different ways in coping with, for example, divorce (Wallerstein, 1986), and experiencing and transmitting trauma (Hamm, La Broque, Brennan, 2011; Gans, Silverstein; 2006, Lev – Wiesel, 2007). An example is spreading cohabitation. Two generations ago a person living in an illegitimate relationship was a concern for their family. Today such a person does not feel their behaviour is unusual, and their way of life is treated as an alternative to marriage. This area of studies

concerns the search for behavioural conditioning (especially unwelcome behaviour), which might be used in therapy and prevention. It includes the already mentioned studies by J. Bailey (2009) and studies concerning unhealthy behaviour (Curtis, Stapleton, James, 2011), a tendency to overuse intoxicants (Hartmann, Lessem, Hooper, Crowley, Stallings, 2006), antisocial behaviour (Verona, Sachs-Ericsson, 2005), and concerning violence (Baker, 2011; Ehrenschaft, Cohen, Brown, Smailes, Chen, 2003; Hines, Saudino, 2002; Thornberry, Freeman– Galant, Lizotte, Krohn, Smith, 2003).

When we investigated conditioning of intergenerational transmission we also observed instances of continued behaviour. Our studies involved measuring behavioural frequency as a factor which reveals change in their function and conditions a change in behaviour. The studies explore patterns, such as drinking, spending free time, learning, or aggressive behaviour. Apart from transmissive psychologists, the subject has been explored by anthropologists, sociologists, biologists, and evolutionary psychologists (Benedict 1999; Buss, 2001; Cashmore, Goodnow, 1985; Quadrello, T., Hurme, H., Menzinger, J., Smith, P. K., Veisson, M., Vidal, S., & Westerback, S. 2005).

The aim of the study

The aim of this study was to find out similarities between generations respecting individual experience and expected experience connected with parenthood. The study assumed the model for formulating temporal perspectives (Trampała, 2000), which made it possible to examine the role played by intergenerational transmission in inducing the expected behaviour.

The areas explored in order to find intergenerational transmissions were developmental tasks connected with parenthood. Exploration concerned assessing and placing early adulthood developmental tasks in the planned structured actions of three generations; the tasks included: starting a career, achieving financial independence, loosening bonds with one's parents, finding a life partner, parenthood and taking responsibility for providing for oneself and one's family. According to the assumptions about intergenerational transmissions (Aronson, 2005; Bronfenbrenner, 1976; McGoldrick, Carter, 1980; Radochoński, 1986; Rostowska, 1995; Tyszkowa, 1987, 1993), and on the basis of earlier findings (Fajkowska – Stanik, 2001; Sitarczyk, 1994; Rostowska, 1995), which indicated important characteristics of the of family environment for intergenerational transmission, our study assumed a link between intergenerational transmission in the family and a positive indicator of family closeness.

Similarity between individual and expected generational experiences were examined, which made it possible to compare intergenerational transmissions in two areas of family life: found (knowledge about the world and oneself) and expected. This model permitted us to examine the role of intergenerational transmission in creating temporal perspectives, which are connected with shaping one's further life, since humans do not only react to reality and its challenges, but also shape it actively (Tyszkowa, 1996).

Basis on the theoretical assumptions about the family's primary socializing role and the individual's own activity in acquiring experience, the following questions were formulated.

Is there – and if yes, to what extent – any similarity in biographic experience related to realising developmental tasks in three subsequent generations?

What are the future expectations held by young adults from the grandparents' and parents' perspective regarding the realisation of early adulthood developmental tasks?

Is there – and if yes, to what extent – any similarity in normative development regarding parenthood's developmental tasks and expected experience?

Procedure

In order to answer the above questions, a three-stage analysis was undertaken. The first stage focused on checking the conditions of transmission. The conditions considered were: a family's positively perceived emotional climate and each family member's assessed material status. Statistical analyses at this stage included tests of significant differences, a statistical description and intergroup comparisons. The second stage concentrated on defining transmission variables, in the area of individual and expected experience. The statistical analysis at this stage included an analysis of variance, and tests of significant differences and correlations. The third stage concerned searching for predictions of relations between variables. Analysis of variables permitted us to determine the existing relations among interculturally transmitted areas of on parenthood realization. Multiple regression analysis was used at this stage. Assumed model, in different areas of individual and expected experience, the following variables were distinguished: emotional climate and relations with other people in family, assessing material status of close relatives, normative development in three generations, especially concerning parenthood, intergenerational distance, especially concerning parenthood, self-evaluation, influencing one's own life, experiencing parenthood and the number of one's children, assessing the influence of different events on one's life, especially parenthood, and expectations towards the future concerning when parenthood would be realized.

The course of research

We conducted our research in three stages and planned it in such a way as to ensure the least intervention from the the family itself. Representatives of the young adult generation, age between 22 and 35, took part in the first stage. Conditions for participating in the research were agreed upon,, with the possibility of having personal contact with one's parents and grandparents. The second stage focused on parents and grandparents of the people who agreed to participate further in the the research. The third stage consisted in collecting opinions and impressions from the research, and subjects were informed about the research results and their interpretation.

Research tools

The research involved standardized conversation and the following questionnaires and tests:

- Test of Family Relations, the version for adults, by E. Bene – J. Anthony, prepared by A. Frydrychowicz (1986). The degree of closeness between family members was assessed in the way proposed in the book. Particular feelings were assigned with measures from the range -3 to +3; strongly positive feelings were assigned with +3, strongly negative - with -3, intermediate positive +2, intermediate negative -2 and weak positive +1 and weak negative -1. The measures assigned to the feelings directed to a given person and directed from a given person were summed up. The final result was a positive or negative number which illustrated the emotional climate perceived in a given family, the higher the positive number the better the emotional climate). The results from the range up to 10 were assumed as indicating a moderately positive emotional climate, while those higher than 10 indicated a strongly positive emotional climate. The values from the range <0 to -10> were interpreted as indicating a moderately negative emotional climate and those below minus 10 as indicating a strongly negative emotional climate in a family.
- The tool for assessing how different events influenced human life, based on the Questionnaire of Life Experiences by Boszkiewicz (1997, α Cronbach=0.85); The version proposed by the author used in our study includes 20 inquires concerning mainly from early adulthood. The respondents were asked to assess the influence of these events (e.g. graduation from school, getting the first job) on their life on a 7-degree scale, from very positive (6) to very negative (0).

- The tool for examining the level of normativeness and values ascribed to various developmental tasks, and perceived normative order of task realization (method Q-sort, $W - Kendall = 0.87$); In the first stage the respondents were shown 26 tasks written on separate cards and were asked to choose the life tasks that should be - according to them - realised between 22 and 35 years of age. In this way the perceived normativeness regarding the developmental tasks to be realised in the period of early adulthood was established. The results were transformed into ranks; rank 1 was assigned to the most frequently chosen task and so on to 26. At the next stage the respondents were asked to order the tasks according to their personal significance, from the most important to the least important. The instruction was: "Please order the cards you selected earlier according to their significance for you; the most significant put as the first, then the other cards up to the one representing the task you consider as the least important". In this way, data on the normative significance of developmental tasks for the respondents were obtained. The results were transformed to ranks, the first task chosen was assigned with rank 26 and the last with rank 1.
- SES - The self-evaluation test by Rosenberg (SES 1965).
- Tool for studying the sense of influence on events, modelled on Trempała (2000, $\alpha_{Cronbach} = 0.765$). The test includes eight items and with each referring to a different sphere of life. The respondents were asked to evaluate their own influence on their own material status, health, relations with a partner, with family and with other people, professional life, looks and the way they spend leisure time. The evaluation was made on a 7-degree scale, with the numbers corresponding to the following evaluations: "always" 7, "usually" 6, "often" 5, "rarely" 4, "scarcely ever" 3, "rather no" 2 and "I have definitely no influence" 1.
- Tool to investigate the time expected to realise a task ($\alpha - Cronbach = 0.767$). A special questionnaire was constructed to collect the data on the preferred temporal scheme for realising particular early adulthood developmental tasks, from the perspective of grandparents, parents and young adults (personal temporal perspective). The questionnaire was called "The tool to investigate the expected time of task realisation". The respondents were asked at what age the young adult representing the youngest generation would finish their education, start the first job, gain a stable professional and family life, choose a partner, give birth to the first child and possibly subsequent children.

Participants

The study was performed on 411 people from 109 families represented by three generations, with each of the three generations being represented by at least one member. The criterion of positive emotional climate in the family was met by 335 people from 86 families. The 86 Young adults included 63 women (74.1%), and 22 men (25.9%). Average age in this group was 24.57. The most numerous subgroup were people between ages 23 and 29 (49%). The second most numerous subgroup were people between 19 and 22 (38.5% people). The least numerous subgroup were people between 30 and 35 years old (12.5%). The parents' generation included 145 people (77 mothers and 68 fathers), and the grandparents' generation – 104 people (72 women and 32 men).

Results

Presentation of intergenerational similarities

All subjects had a sense of punctuality with their own generation, which indicates their personal perspective. Data analysis revealed intergenerational transmissions and similarities between generations in such areas as: assessment, evaluation and the sense of normative events connected with parenthood. The similarities were mostly noticed in two successive generations (between parents and children).

However, the findings also confirmed the existence of differences between generations respecting behaviour concerning the number of children one has (and expects), the educational level, and the age for starting one's first job. The findings indicate intergenerational changes, but also areas which undergo changes within family systems. These changes may also be called intergenerational transmission processes, because they do not cause emotional estrangement, but occur in a supportive atmosphere. Thus, this is a case of inverse intergenerational transmission, which is connected to changing conditions of expressed behaviour (economic, cultural and mental climate concerning one's actions). In many areas intergenerational similarities were noticed. These similarities and differences are presented in Table. 1.

Table 1. Areas of similarities and differences between generations.

Kind of Experience			full intergenerational transmission	transmission between two generations	no intergenerational transmission p<0.05
Individual experience	Social knowledge on normativeness	value attributed to developmental tasks	preparing for life with partner, having first and second child, looking after children, focusing on home		choice of life partner
		order of tasks in developmental sequence	choice of life partner, having first and second child, looking after children, focusing on home	preparing for life with partner, differences apply to YA - G	
		concept of realizing parenthood	age of procreation, number of children, conditions favourable to becoming a parent, motives for becoming a parent		
	system of self-knowledge	self-description	activity, resourcefulness, protectiveness, responsibility, forbearance, self-reliance, fidelity	attractiveness, intelligence, diligence, thrift – differences apply to YA – G	
		sense of influence	on relations with one's family	one's health - differences apply to YA – G	material status, career, relations with friends, appearance, ways of spending free time
	assessment of different life events	influence of events	moving to one's own home, choosing a life partner, wedding, one's own or partner's pregnancy, having first child, having second child, looking after children, spending time with children,	taking care of home – differences apply to YA - G	
	family biographies	biographical data	age of having first child		number of children, place of growing up and living, level of education, marital status, age of starting first job
Excepted	expectation of future events	expected age of	having second child, achieving financial and work stability	finding a life partner, having first child (differences apply to YA – P)	First job

Relations between variables in selected areas of social knowledge and expected experience. In order to recognize specific relations between normative development variables and variables from the area of expected experience, we made models that explored structures of expected experience; these models were made using multiple regression analysis. Due to the research's exploratory character, the progressive model of multiple regression analysis was used. Each time, relations between explored quantitative variables and normal distribution were verified. In order to define covariance, only models with a predictive value higher than 50% ($R > 0.5$) were taken into account.

In the constructed multiple regression models, parenthood expectations have been explained by the expected experience variables and those connected with assessing the influence of realized early adulthood developmental tasks on the subjects' lives.

The most common three-generation model involved Young Adult Women, Parents, Mothers' Mothers, Mothers' Fathers and Fathers' Mothers (without Young Adult Men and Fathers' Fathers). It concerned variables such as: normative order for choosing a life partner, normative value for choosing a life partner, expected age of a young adult in finding a life partner, and having the first child.

The collected research material reveals the role of women in intergenerational transmission (Young Adults – Mothers – Mothers' Mothers and Fathers' Mothers). In the female line, the transmission fully includes expectations concerning realization of parenthood. Among men (Young Adults and Fathers' Fathers), on the other hand, no characteristic relevant model for expected experience was found. This means the conditioning is different for young males than for young females. It also shows different conditioning of expected experience depending on one's role in the family.

The observed models of transmission conditioning recurred in two and three generations. This leads to the conclusion that intergenerational transmission concerns not only the content of one's family experience, but also its conditioning. The most important conditionings for the expected age to having their first child were: expected age in choosing a life partner ($r_{\text{semi}} = 0.578$), assessing the influence leading to choosing a life partner ($r_{\text{semi}} = -0.236$) and the pregnancy influence ($r_{\text{semi}} = -0.314$, relevance of the regression equation for all models $p < 0.001$, r stands for semi-partial r). On the other hand, selected conditioning models for variables concerning the young adult's expected age for having a second child were: expected age for having the first child ($r_{\text{semi}} = 0.5$), assessing the influence of having the first child ($r_{\text{semi}} = 0.236$), assessing the influence in having the second child ($r_{\text{semi}} = -0.279$), and material status ($r_{\text{semi}} = -0.271$, relevance of regression equation for all models $p < 0.001$).

Discussion

The above findings indicate numerous transmission areas between generations in a family. The research method revealed the significance of similarity in respect to expected experience, which, after being recognized and accepted by an individual, may be incorporated into their life concept, thus creating a structure for temporal-future content. As a result, it may function later as a future normative developmental task, defined by one's future expectations regarding planned concepts of one's children's and grandchildren's lives (through the ordering and timing of certain events). This assumption is theoretically possible, because the model for reversing the direction of transmission is included in the family development model, proposed by Tyszkowa (1996), and is consistent with the systemic approach. This model also characterises postmodern societal bonds (Mead, 1978, Bauman, 1998, Giddens, 2001). It confirms the thesis that intergenerational transmission participates in assimilating the structures of experience among all generations in a family, and this effect at least partially coheres their concept of developing parenthood.

The life schemes expected by today's Young Adults only slightly differ from their Parents' and Grandparents' schemes. The differences concern: expected time for choosing a life partner and when the first child will be born, as well as the order in preparing for life with a partner / spouse in sequencing early adult developmental tasks, and the importance attached to choosing a life partner. The differences observed in the study show the process of assimilating a changing life context and adapting to that context (both mental schemes and behaviour), rather than to the intergenerational pressure on copying hitherto prevailing patterns.

Table 2. Order of expected developmental tasks.

<i>Young Adults Mother's Mother Father's Father</i>	<i>Mother</i>	<i>Father, Mother's Father, Father's Mother</i>
Starting first job		
Finding life partner	Finishing school	Finishing school
Finishing school	Finding life partner	Finding life partner
Having first child		
Having professional stability		
Having financial stability	Having financial stability	Age of having second child
Age of having second child	Age of having second child	Having financial stability

Expectations towards the future, differences in the roles played in the family can be noticed (Tab. 2). Parents, Fathers' Mothers and Mothers' Fathers expected the following tasks to be realized: starting the first job, then leaving school, and next – finding a partner. On the other hand, Young Adults, Mothers' Mothers and Fathers' Fathers expected a little different sequence: they expected finding a partner before leaving school. However, both groups put expectations connected to starting a career at the beginning of the sequence. This expectation is coherent with the aforementioned crucial role played by young adults, namely, independence².

It is worth noting that no differences in expectations were found regarding young adults' gender. This confirms a uniform model of life which has become common among both young men and women, a model in which involvement in one's professional development precedes involvement in close permanent interpersonal relationships. The model is different from the dynamic model of female development common in the second part of the 20th century, in which involvement in her professional career gradually overtook involvement in her family activity, through the stage of their equivalence and simultaneity. In the present model, on the other hand, starting a professional career took the lead in the sequence of tasks, followed by finding a life partner or finishing formal education. The change, in all generations, may result from the specific job market, and the older generations' experiences in searching for work. Common experience in this area could account for similar expectations related to starting a job before leaving school, and the necessity for constantly improving oneself and developing one's qualifications after leaving school.

The findings concerning expected time for having one's first and second child reveals a specific dichotomy in early adulthood development. The first child is generally expected after finding a life partner and starting the first job. On the other hand, the second child in a Young Adult's family is expected by Fathers, their Mothers, and Mothers' Fathers to occur before achieving financial security by the Young Adult. The other subjects (Young Adults, Mothers, Mothers' Mothers and Fathers' Fathers) expect it after achieving financial security.

The findings might be the basis for a thesis about two models for realising basic early adulthood tasks – becoming a parent and achieving financial security. In the first one, procreation and parenthood can be perceived as a traditional 'stabilizer' on the way to family stability, including financial security, whereas in the second model – it is rather the effect or culmination of achieved prosperity (Bee, 2004, Matuszewska, 1993).

The process of intergenerational transmission is present in families and concerns tasks connected with becoming a parent. It may be concluded that expected and normative

² Obviously, it results also from previous developmental tasks and needs.

events, as well as some developmental tasks in different periods of life, especially early adulthood, undergo evolutionary and discreet adaptive processes every day (Sunker, 2007). In this approach, intergenerational transmission relates to the transfer of widely understood experiences between family generations (as knowledge and ready behaviour models, but also as values and a system of expectations and fears), and also relates to giving support, which enables tasks considered as valuable to be realized, even tasks which were not accomplished by previous generations. According to this model, intergenerational transmission may have a direct influence on individual experience, and indirect – in motivation, evaluation and planning – on expected experience, which is significant as it takes part in forming one's concept of life, and also in transforming the sociocultural context over time (Levinson, 1978; Liberska, 2004; McGoldrick, Carter, 1989; Tyszkowa, 1988; 1993; Rostowska, 1995; Skolnick, Skolnick, 2011).

Summary and practical implications

The research findings revealed a diversity in the process of intergenerational transmission mainly in respect to one's gender and belonging to a specific cohort. In the explored area, it has been shown that:

- structures of social knowledge on normativeness do not have a relevant influence on expected experience,
- women are more prone to transmit family behaviour models,
- the pace of realizing tasks and the order of tasks change, but developmental directions respecting parenthood and life stability remain constant.

It should be emphasized that in recognizing a transmission model, young adults build their own specific, postfigurative, autonomous way of life. This thesis is confirmed by specific ways support is given and by modifying existing models. The change in young adults' behaviour has created an alternative model for realizing parenthood, owing to close emotional contact.

Radicalism and dynamic changes in a socio-economic context have not disturbed the hitherto prevailing cultural prototype of life in the family system. This confirms the importance of intergenerational transmission, and also its constancy and adaptability. It might also indicate links between transmission and the balancing of different generational mental structures, and the relatively limited influence of external changes in one's normative parenthood concept, which applies to all three adult generations in a family (it concerns both the content and the structured form).

In a wider perspective, the research findings have revealed the importance of intergenerational transmission for psychological support between generations. It is significant

not only because it determines the directions of a pro-family policy, but first of all, because families function as small social groups which, in changing times, will naturally transform and support successive generations in the difficult task of accepting challenges from, and dispensing challenges to reality³. The oldest generation, owing to its experiential transmission in the family, might understand ongoing changes better⁴, integrate their own experience and adapt to new challenges.

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³ They create developmental contexts for each other.

⁴ It seems necessary to develop emotional and communication competence in families (Harwas–Napierała, 2006).

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Coping with anxiety in patients undergoing hip replacement

Abstract:

Our research aim was to answer whether temperament traits could predict the anxiety experienced by osteoarthritis patients before and after arthroplasty; we analyzed if coping styles moderated the relationship between temperament and perioperative anxiety, and examined the fluctuation of perceived stress and anxiety.

In the longitudinal study (N=61, mean age 70.9) we measured temperament traits (EAS-A), coping styles (Brief-COPE) and changes of perceived anxiety (STAI) and stress (PSS-10), before and after arthroplasty.

Anxiety and stress decreased significantly after the surgery. Temperament correlated with the anxiety state. Positive correlates were anger, negative affectivity, and fear while negative correlates included sociability and vigor. Regression analyses indicated the predictors of preoperative anxiety which included vigor and negative affectivity. The regression model for the variation of postsurgical anxiety indicated that negative affectivity explained the variance of this variable ($R^2=0.57$). Moderation analyses confirmed that the temperament and anxiety relationship depended on: active coping, acceptance and planning.

Vulnerable patients with temperamental emotionality and ineffective coping report heightened perioperative anxiety, while effective coping moderates the temperament and anxiety relationship.

Keywords:

anxiety, coping behavior, osteoarthritis, temperament, chronic disease

Streszczenie:

Celem było określenie, czy cechy temperamentu warunkują nasilenie lęku u osób z chorobą zwyrodnieniową stawu biodrowego przed i po endoprotezoplastyce, zweryfikowanie czy style copingu pośredniczą w ewentualnym związku uwarunkowań temperamentalnych z poziomem lęku oraz ocena fluktuacji lęku i stresu.

W badaniu podłużnym (N=61, średnia wieku 70.9) dokonano pomiaru cech temperamentu (EAS-D), stylów radzenia ze stresem (Mini-COPE) oraz zmian w poziomie odczuwanego lęku (STAI) i stresu (PSS-10).

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Nasilenie lęku i odczuwanego stresu istotnie zmalały, cechy temperamentu korelowały z odczuwanym lękiem. Do dodatnich korelatów należały: złość, niezadowolenie i strach; towarzyskość i aktywność korelowały ujemnie. Metodą analizy regresji wyodrębniono predyktory lęku: aktywność i niezadowolenie. Niezadowolenie wyjaśniało znaczny procent wariancji odczuwanego lęku w czasie rehabilitacji ($R^2=0,57$). Analiza moderacji wykazała, że aktywne radzenie, akceptacja i planowanie wpływały na związek związku temperamentu z lękiem.

Cechy temperamentu mają umiarkowany wpływ na nasilenie lęku okołoperacyjnego, chociaż style zaradcze (planowanie, akceptacja, aktywne radzenie) łagodzą negatywny związek uwarunkowań temperamentalnych z odczuwanym lękiem w badanej grupie.

Słowa kluczowe:

lęk, radzenie sobie, koksartroza, temperament, choroba przewlekła

Introduction

Our paper concerns the influence of coping styles on temperament traits and the level of perceived anxiety in patients with hip osteoarthritis (OA, coxarthrosis, osteoarthrosis) undergoing arthroplasty. Literature on the subject suggests that OA is related to difficulties in everyday functioning, fulfilling life roles, it also combines the disease with the development of premature physical disability, as well as in various mental illnesses (mostly affective, anxiety and adjustment disorders) (Ender, 2005; Dutka et al., 2008; Klimiuk & Kuryliszyn-Moskal, 2012; Talarkowska-Bogusz et al., 2006; Riediger et al., 2010; Badura-Brzoza et al., 2008). A negative relationship between OA with the level of life quality is observed especially in weak and moderately developed countries; where life expectancy is extended, there is an increase in the percentage of older people in those societies, while the budget expenditures for OA treatment are incomparably lower than in developed countries. It seems that some Central European countries, including Poland, are in such a situation, where the double growth of the population above 65 years of age is predicted by 2029, and osteoarthritis particularly worsens among older-age people (Stanisławska-Biernat, 2010; Woolf & Pfeger, 2003).

Restrictions in implementing daily tasks (*daily activities*) and chronic pain (exercise, rest) are two of the more distressing symptoms which may cause patient depression, as well as anxiety reactions, which in a longer perspective heighten the patient's social withdrawal (Ender, 2005; Dutka et al., 2008; Klimiuk & Kuryliszyn-Moskal, 2012; Talarkowska-Bogusz et al., 2006; Blackburn et al., 2012). Patient anxiety and negative experiences connected with the disease causing additional tension is considered as a bad prognosis for the patient's condition in the perioperative period, improvement of life quality after the treatment, and progress in rehabilitation (Riediger et al., 2010; Blackburn

et al., 2012). Additionally, in late adulthood there significantly increases the prevalence of mental disorders including affective, adjustment and anxiety disorders, which are connected not only with experiencing the approaching developmental crisis but with the multi-morbidity and deterioration of living conditions (Małyszczak et al., 2008).

Researchers point out the occurrence of perioperative stress in patients undergoing surgical treatments; this stress may, depending on the nuisance associated with hospitalization and the patient's secondary reactions, hinder the decision about undergoing surgical treatment, worsen the mental state during hospitalization, and reduce tolerance to pain (Blackburn et al., 2012; Feeney, 2004; McKnight et al., 2010).

The interactive model of coping with stress (Fresco et al., 2006) assumes that the range of coping resources is to some extent conditioned by personality traits which might affect the tendency to use specific ways of coping. This model assumes also that the utilization of coping resources, which are constructive from the patient's perspective, may modify the perceived severity of stress and anxiety. Wrzesniewski (2000) defines coping process as the concatenation of strategies (cognitive and behavioral) that may change in time and are determined by numerous factors including psychophysiological states, situations and dispositional coping styles. However, Carver and others (1989) claim that the idea of "stable coping dispositions" is "somewhat controversial" (p.270). Apart from coping, the researchers pay attention to perceived social support as a factor supporting mental balance in OA (Luong et al., 2012).

Flexibility in coping may also depend on perceiving the situation as very threatening, which is connected with the cognitive appraisal made by the person facing the stress transaction and evaluation, and whether he or she has sufficient resources to cope with it. It turns out that people with a high intensity of anxiety – understood both as a trait (anxiety as a personal characteristic) and state (anxiety about an event) (e.g. in the case of operational stress) – are less flexible in selecting a strategy (Fresco et al., 2006; Endler, 1997). According to the coping style concept, it may be concluded that the individual with vulnerability to react with anxiety would develop a specific coping pattern.

Previous studies have already assessed the relationship between personality and stress tolerance of OA patients subjected to hip implantation (Badura-Brzoza et al., 2008); however, the dependency between temperamental features and susceptibility to stress and a coping style, as a medium in these conditions, have not been analyzed so far. Evaluating such dependencies could enable more effective therapeutic and rehabilitative adaptations in this clinical population.

Aim of the study

In connection with the reports about the dependencies between temperamental traits and low tolerance to anxiety, we considered it important to assess coping styles and their influence on the experienced emotions of the patients in the perioperative period and during rehabilitation. Coping might in fact influence the subjectively experienced anxiety and stress, conditioning helplessness and fear, or maintaining the internal locus of control and homeostasis. The basic goal of our paper was, therefore, to evaluate the influence of coping styles between temperament and anxiety before and after total hip replacement (THR), and to determine what the character of this influence is. We hypothesized that if there was a relationship between temperament and perioperative anxiety, this relationship would be moderated by coping styles.

Materials and Methods

Out of 102 patients scheduled for the longitudinal study, eight were ineligible due to poor contact and cognitive problems. Of the remaining 94, 15 declined to participate. Of the 79 who joined the study, 61 subjects (34 women and 27 men) treated for OA, undergoing THR in the age of 57-88 (mean 70.9 ± 6.5) completed the posttest examination three months after the THR.

Of all test participants, 57.3% came from a large city above 500 thousand residents, 14.8% came from medium-size cities (50-500 thousand residents), 27.9% from small towns or villages. Most of the patients, 63.9%, did not have secondary education; 26.3% finished education in high school and technical school, 9.8% received higher education. There were slightly more people “strongly dissatisfied” and “somewhat dissatisfied” with the financial situation (32.8%). Approx. 39.3% assessed their own financial situation moderately, 27.9% of the respondents were “rather satisfied” and “definitely satisfied”. Neither economic situation, educational background, nor place of residence were related to the psychological indicators (chi-square $p > .05$).

Temperament traits were measured using the adult version of the *Temperament Questionnaire EAS* by A. Buss and R. Plomin. The tool recognizes temperament as a group of inherited personality traits with a relatively constant character. The theoretical base for EAS was the genetic theory of temperament (Oniszczenko, 1997); EAS is self-descriptive, and one of its advantages is its simple structure understood by older people and those less educated. Another advantage is that it takes a short time to administer, which makes this instrument cost-effective. Results in five gradations for each of 20 questions, allow the participant to specify the level of: emotionality-distress (discontent), fear, anger, activity and sociability. The respondents rate each item (on the Likert

scale from 1: “not at all characteristic of me”, to 5: “very characteristic of me”) describing how they consider themselves (e.g., “Usually I seem to be in a hurry”). The questionnaire is reported to have satisfactory psychometric values: the internal reliability coefficients range from 0.57 (sociability) to 0.74 (dissatisfaction).

We determined the patients’ coping style by using the shortened version of the *COPE Inventory (Brief-COPE)*, invented by Carver and adapted by Juczyński (Juczyński & Ogińska-Bulik, 2009a). It is a tool successfully used to study clinical populations due to its good psychometric properties and small patient load during the procedure (28 questions). The tool enables one to evaluate the tendency to use such coping styles as: Active Coping, Planning, Humor, Positive Reframing, Use of Emotional Support, Use of Instrumental Support, Substance Use, Denial, Self-Distraction, Self-Blame, Turning to Religion, Venting, Acceptance, and Behavioral Disengagement. The response reflects the individual’s evaluation about how often in general he or she would act in certain ways while experiencing a difficult event, for example, “I turn to work or other substitute activities to take my mind off things”. Carver and Scheier constructed their own concept of dealing with stress, but did not discuss whether the individual could modify the coping strategies or could be characterized by a coping style; thus two versions of the COPE tool were developed (situational and dispositional). Alpha Cronbach’s coefficients computed in the sample varied from 0.71 to 0.90 excluding venting (0.57) and self-distraction (0.30).

State-Trait Anxiety Inventory (STAI), developed by CD. Spielberger, R.L. Gorsuch and R.E. Lushene, is a worldwide tool used to examine anxiety understood as a generalized predisposition to experiencing tension. It also tests situational anxiety of a temporary nature. Each of two scales consists of 20 questions, where the respondent evaluates on a four-point rating scale (from 1: “not at all”, to 4: “very much so”) the degree of worry, tension, fear, lack of security and other symptoms of anxiety, for example, “I feel comfortable”. The higher the obtained result (in the range of 20 to 80), the higher the intensity of state anxiety or trait anxiety. The latest Polish validation was performed by Wrześniewski and others (2011). Satisfactory internal reliability alpha coefficients (0.84-0.94) were computed in the Polish validation (Wrzesniewski et al. 2011). Trait anxiety was measured to compare the magnitude of patients’ temporary anxious reactions with their dispositional anxiety. However, the main focus was laid on the relationship between temperament and state anxiety moderated by coping.

Stress experienced by the patients was measured using the *Perceived Stress Scale (PSS-10)* created by S. Cohen and others (1983) and consisted of ten questions in a five-point Likert scale. The questionnaire, in the Polish adaptation by Juczyński and Ogińska-Bulik (2009b), is a short form of the evaluation of subjective feelings connected with personal events and issues during the previous month. The person indicates his or her

judgments by circling the frequency of his or her feelings or certain thoughts, for example, “In the last month how often have you been able to control irritations in your life?” The general result (0-40) reflects the intensity of the perceived stress. The derived alpha Cronbach’s values in the sample ranged from 0.87-0.90 (negative and positive statements) in the pretest and from 0.82-0.88 (negative and positive statements) in the posttest.

Statistical methods

Statistical methods included Pearson’s correlation, linear regression followed by a one-way analysis of variance for comparing the results between subjects. Consequently, we tested the presence of moderator effects in the relationship between temperament and state anxiety. In order to do so, we performed the multiple regression model advocated by Baron and Kenny (1986) so that we could investigate whether the association between temperament and anxiety depends on coping styles. We performed simple-slopes analyses to show in plots how coping affected the relationship between temperament and presurgical anxiety.

Results on scales of temperament, anxiety, perceived stress and some dimensions of coping with stress reached normal distributions; therefore there were applied analyses with parametric tests and r-Pearson correlations. Results of other stress coping scales were assessed by using rho-Spearman rank correlations and non-parametric tests.

Procedure

We conducted the study in the Clinic of Orthopedics, Traumatology and Post Traumatic Rehabilitation of the Military Teaching Hospital in Lodz after obtaining the positive opinion of the Committee of Bioethics. Inclusion criteria were: referral for THR surgery due to OA, qualification to the treatment for the first time (people with revision did not participate in the study), total contact with the examinee. We assessed the patients by administering self-report questionnaires in two time points: the day before implantation and three months after the treatment, during orthopedic rehabilitation.

Psychological variables were measured with standardized questionnaires validated in Poland. We provided the patients with the program’s goals and obtained written consent prior to participation. We interviewed and collected the subjects’ data with a trained psychologist.

Results

A high level of anxiety (sten score of more than 6) before surgical treatment was noted in 57.4% of the sample (32.8% after treatment). With regard to the percentage of respondents with high generalized anxiety, which was 27.9%, both situations taken into consideration in the test were connected with an increased intensification of reactive anxiety. It was especially clearly manifested in the preoperative period. A high stress level (sten score of more than 6) measured with the PSS scale was noted before surgery in 21.3% of the sample and in 19.7% after the prosthetic implantation. Average results obtained in psychometric tests are presented in Table 1. Females reported higher preoperative anxiety and trait anxiety. According to the instrument, males were known to display lower scores in self-reported anxiety; however, the differences between subjects were no longer valid once they were adjusted to the standard sten score.

Table 1. Average results in temperament, anxiety and perceived stress scales in patients with OA.

Variable	Scores			
	F n=34	M n=27	N (61)	
			Mean	σ
Dissatisfaction ¹	9.71	9.22	9.49	3.44
Fear ¹	11.15*	9.33*	10.34	3.40
Anger ¹	9.53	9.78	9.64	2.89
Vigor ¹	10.18*	11.70*	10.85	2.73
Sociability ¹	13.74	12.63	13.25	3.08
Trait anxiety	44.38*	37.93*	41.53	11.57
State anxiety before surgery	50.41*	43.89*	47.52	11.07
State anxiety after surgery	40.06	37.81	39.07	11.77
Stress before surgery	16.21	13.52	15.02	7.17
Stress after surgery	15.21	13.04	14.25	6.54

*Difference of average results between F and M ($p < 0.05$).

¹Temperament dimensions measured by EAS-A scale.

The next step was to determine the relations between temperamental features, and the severity of reactive anxiety before THR, which allowed us to define whether biologically conditioned personality traits that increased vulnerability to experience negative emotions existed before THR. Analysis of correlations indicated significant dependencies ($p < 0.01$) between scales of Dissatisfaction ($r = 0.80$), Fear ($r = 0.61$), Anger ($r = 0.47$), Activity ($r = -0.39$) and Sociability ($r = -0.41$), and preoperative anxiety. Similarly, statistically essential relations occurred in cases where there was state anxiety after treatment: Dissatisfaction ($r = 0.76$), Fear ($r = 0.59$), Anger ($r = 0.43$), Activity ($r = -0.32$), Sociability ($r = -0.49$). These EAS scales are complementary and create a comprehensive profile of

temperament, and therefore were included in linear stepwise backward regression analysis, explaining the changeability of situational anxiety in the sample. Models 1 and 2 described predictors of preoperative anxiety, while models 3 and 4 described predictors of postoperative anxiety. Results of regression analysis (models 1 and 3) showed that preoperative and postoperative anxiety is determined by sensitivity to stimuli causing dissatisfaction and difficulty in maintaining self-control. Alternative models (2 and 4), which did not include dissatisfaction in analyses, showed that the tendency to react with fear and to manifest anger and aggression moderately explained the variance of preoperative anxiety.

Table 2. Linear regression models characterizing the change in anxiety before and after THR.

Model	Dependent variable	Adjusted R ²	Predictors	Beta	Standardized β	T	p
1	STAI-S pretest	0.67	Dissatisfaction	2.41	0.75	9.85	<0.0005
			Activity	-0.83	-0.21	-2.70	<0.01
		Constant		33.65		7.31	<0.0005
2		0.50	Fear	1.52	0.47	4.73	<0.0005
			Anger	1.30	0.34	3.63	<0.01
		Activity	-0.85	-0.21	2.18	<0.05	
Constant		28.5		4.18	<0.0005		
3	STAI-S retest	0.57	Dissatisfaction	2.61	0.76	9.05	<0.0005
				14.32		4.93	<0.0005
4		0.42	Fear	1.78	0.51	5.05	<0.0005
			Anger	1.27	0.31	3.08	<0.01
Constant		8.41		1.72	0.09		

Model 1: F=62.63, p<0.0005; Model 2: F=21.15, p<0.0005; Model 3: F=81.83, p<0.0005; Model 4: F=22.31, p<0.0005.

Since dissatisfaction turned out to be a significant predictor of pre- and postoperative anxiety in the examined group, as well as results of dissatisfaction that strongly correlated with anxiety, the evaluation of coping styles was performed among three groups depending on the severity of vulnerability to react with dissatisfaction. The results on EAS-A dissatisfaction transformed into a sten scale (low, medium high sten scores) were the criterion of categorization. A more apparent predisposition to task-oriented and active coping through planning, plus manifesting a positive revaluation is visible in people with low dissatisfaction. Patients with high dissatisfaction were characterized with the coping styles focused on: venting, self-blame, denial, substance use (Table 3).

Table 3. Mean values of coping styles and level of dissatisfaction (variance analysis and post-hoc).

	1 Small Dissatisfaction N=18		2 Average Dissatisfaction N= 30		3 High Dissatisfaction N=13		Intergroup comparisons			Post-hoc (for F) In Mann-Whitney (for H) Group numbers		
	M	SD	M	SD	M	SD	P	F	H	1-2	2-3	1-3
Brief-COPE												
AC	5.22	0.94	4.60	1.07	3.31	1.38	***	11.49		NS	**	***
PR	4.17	1.38	3.33	1.80	1.92	1.19	**	7.68		NS	*0.03	**
V	1.28	0.90	1.83	1.21	2.92	1.32	**	7.83		NS	*0.02	**
SB	1.11	0.90	2.27	1.39	3.46	1.33	***	13.45		*0.01	*0.02	***
P	4.89	0.90	4.40	1.25	3.38	1.39	*0.01		9.28	NS	*0.03	**
D	0.56	0.86	1.40	1.40	3.00	1.73	***		15.37	*0.03	**	***
SU	0.22	0.55	0.87	1.20	2.38	1.90	***		15.41	*0.01	*0.01	**

AC-Active Coping; PR-Positive Reframing; V-Venting; SB-Self-Blame; P-Planning; D-Denial; SU-Psychoactive Substance Use; $p<0.05^*$, $p<0.01^{**}$, $p<0.0005^{***}$ NS-statistically insignificant.

Correlation analysis allowed us to identify the coping styles mostly associated with perceived stress and preoperative anxiety. R-Pearson and rho-Spearman coefficients for the relationship between preoperative anxiety and coping among women showed that the strongest significant ($p<0.01$) relations occurred for: Denial ($\rho=0.87$), Self-Blame ($r=0.73$), Behavioral Disengagement($r=0.73$), with the strongest negative relation obtained for Positive Reframing ($r=-0.62$). In the tested group of males, main correlations ($p<0.01$) were as follows: Active Coping ($r=-0.60$), Behavioral Disengagement ($r=0.59$) and Self-Blaming ($r=0.56$). Coefficients values indicated that the intensity of correlations was lesser in males, while the direction of relationships was the same as in females.

In order to verify the hypothesis about the moderating role of coping, we performed a linear regression, as aforementioned in the statistical analyses section. It turned out that the character of changeability between temperamental traits and the level of experienced state anxiety before surgery depended on the intensity of particular coping ways. Figure 1 presents the directly proportional dependencies between temperament traits and anxiety, where the moderator influenced the proportional change. Simple slopes for the association between temperament and preoperative anxiety were tested for low (-1 S.D. below the mean), moderate and high (+1 S.D. above the mean) levels of coping style. One standard deviation below and above the mean for predictor and moderator was used to plot the variables and to test the statistical significance for each of the simple slopes. For instance, in Figure 1 (A) it is suggested that active coping is a significant moderator of the relationship between dissatisfaction and preoperative anxiety. The higher the results

reported on active coping, the weaker the relationship between dissatisfaction and preoperative anxiety. Preoperative anxiety was less related to emotionality when it came to high levels of planning (Figure 1 C). The tendency toward coping with accepted difficulties reinforced the negative relationship between sociability and state anxiety (Figure 1 B).

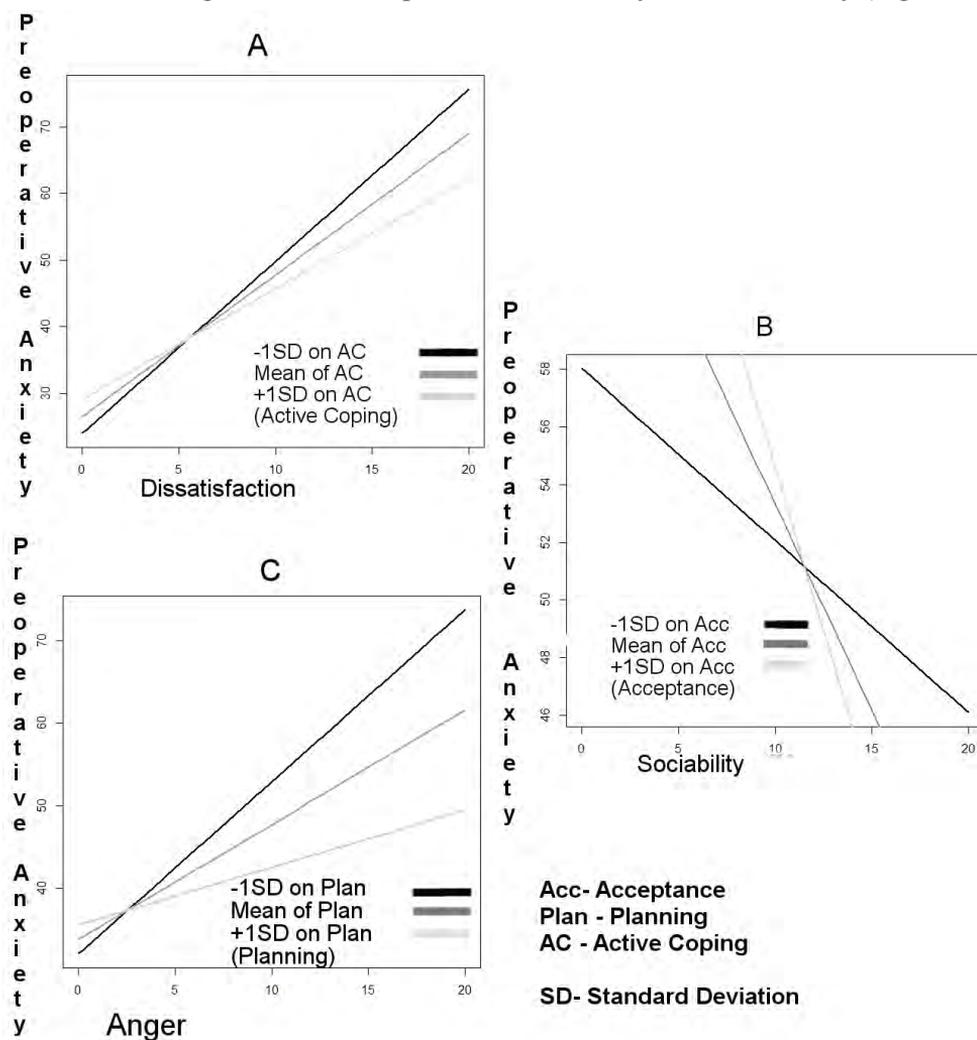


Figure 1. Relationship between temperament and preoperative anxiety moderated by coping.

A: Independent variable: dissatisfaction, moderator: active coping;

B: Independent variable: sociability, moderator: acceptance;

C: Independent variable: anger, moderator: planning.

The regression equations including moderation were constructed according to the guidelines proposed by Baron and Kenny (1986). The dependent variable was perioperative anxiety, while the independent variables were the temperamental traits. The moderators included the coping styles, measured by the Brief-COPE.

Table 4. Regression analyses between temperament and anxiety moderated by coping.

Temperament trait ¹	Moderator	Independent variable	Moderator	Interaction ³	R ²	F	p
State Anxiety before THR ²							
Dissatisfaction ¹	Active Coping	1.16***	0.23	-0.47*	0.68	43.8	<0.005
Anger ¹	Planning	0.97**	0.16	-0.86*	0.50	20.73	<0.005
Sociability ¹	Acceptance	0.22	0.86	-1.30*	0.17	5.08	<0.005
State Anxiety after THR ²							
Dissatisfaction ¹	Behavioral Disengagement	1.28***	0.74**	-0.90**	0.62	33.02	<0.005
	Planning	1.26***	0.34	-0.66*	0.66	39.65	<0.005
Anger ¹	Behavioral Disengagement	0.90***	0.96*	-1.01*	0.23	6.83	<0.005
	Planning	0.94**	0.17	-0.84*	0.45	17.39	<0.005

¹Independent Variable

²Dependent Variable ³Interaction between independent variable and moderator

p<0.05* p<0.01** p<0.0005***

The results of multiple regression analyses indicated that interaction between temperament and perioperative anxiety was moderated by coping styles. We observed that high scores in planning minimized the level of anxiety after the surgery in patients with a tendency to experience negative emotionality (anger or dissatisfaction).

The stronger the severity of negative emotionality in patients (high scores on the anger and dissatisfaction scale), the more intense anxiety they experienced three months after the arthroplasty. The described association moderated by behavioral disengagement weakened the relation (Table 4).

Discussion

The average level of preoperative anxiety in patients with hip OA was found to be high. Referring to the findings of Gammon (1996), one of the ways to reduce anxiety is to provide OA patients with outpatient clinic staff who have psychological re-education and health education. This may prepare the person both mentally and emotionally to function better in the following procedures. These actions focussing on developing a patient's personal resources are considered to enhance his or her behavior physically and psychologically, namely, they may lead to pain reduction (McKnight et al., 2010). Another observed regularity connected with anxiety is the relatively long time of waiting for surgical treatment, which was reported by a considerable part of the participants and is treated as a systemic problem (Dutka et al., 2008). According to data obtained in interviews, the patients stated that the fact of waiting caused their frustration and anger, but

on the other hand, paradoxically, some felt relief connected with the end of this difficult period. This could partially distract attention of the hospitalized from preoperative anxiety.

State anxiety studies indicate that it results from the individual's dispositions and situational variables; thus there is no clarity as to the adaptability of coping style values (Luong et al., 2012; Endler, 1997; Smith & Wallston, 1996). It seems that the results presented by the authors confirm certain positive aspects of task-oriented coping and the orientation to give positive meaning to difficulties. King and others emphasize that sick people who treat their condition as a challenge can achieve a higher level of adaptation (King et al., 2003). Coping styles have properties that may catalyze the influence of personality predisposition on the reaction with anxiety states, which was also revealed in the reports by Ziarko and others with reference to neuroticism (Ziarko et al., 2011). Neuroticism in the Big-Five paradigm and emotionality in the Buss & Plomin theory seem to have similarities in describing characteristics of human behavior, despite differences in explaining its foundation (Ormel et al., 2012). The results that Ziarko and others (2011) obtained, showing the positive relationship between neuroticism and situational anxiety in patients with arthritis, can be interesting, considering the present study. These authors have also observed that arthritic patient neuroticism was not related to anxiety anymore if it was controlled (mediated) by coping styles: avoidance-oriented coping and social distraction. Their finding suggests that avoidance orientation could be advantageous; however, in our sample we did not confirm the moderating effect of any avoidance-oriented style (behavioral disengagement, self-distraction) that would be either positive or negative with respect to state anxiety. In contrast, we have found that the emotionality-anxiety relationship might be weakened by a disposition to use planning and active coping. This disparity could be that we used different paradigms (temperament vs. personality), diverse instruments to measure coping (Brief-COPE vs CISS Coping Inventory in Stressful Situations), and the patients were dealing with different types of stressors (a rather short term stressful event related to the illness vs a long-term illness). Even so, avoidance-oriented coping among individuals with degenerative joint disease is argued to bring negative foresight (Benyon et al., 2010).

Besides coping styles, there are many other important psychological variables influencing the outcome. The network of social support as well as personal resources together with self-efficacy were found to determine patient functioning. Low self-efficacy is considered a predictor of the patient's entry into the role of a disabled person due to a lack of faith in their own abilities, low motivation for change and greater vulnerability to mood disorders (Miller & Cronan, 1998).

Evidently, a number of participants reported a heightened level of psychological stress before surgery and at the middle-stage of rehabilitation, which was self-reported

in more than 20% of the sample. Although the intensity of distress decreased slightly after THR, the results suggest that end-stage OA patients generally displayed long-term difficulties in everyday living so that they might be exposed to negative outcomes. Heijmans and colleagues' (2001) observations confirmed that stress accompanying OA is an important struggle faced by patients.

A policy for an OA patients' mental health once they qualify for arthroplasty should be considered, starting from the moment of properly communicating the need for surgery. Secondly, there is a substantial patient management issue including controlling his or her stress during hospitalization. Finally, the patient's motivation to undertake actions for recovery during rehabilitation should be facilitated. Intervention and prevention programs should be based on different theoretical models, usually assuming active patient coping and plan-oriented coping (Klimiuk & Kurylczyn-Moskal, 2012; Feeney, 2004). Some interventions consider selected dispositional variables, such as searching-avoiding-information (Case et al., 2005), and indicate alternative recommendations depending on the individuals' dispositions and preferences.

Etiology of OA is ambiguous, and degenerative joint changes may be slightly delayed; therefore it is recommended limiting the number of risk factors (e.g. obesity) (Klimiuk & Kurylczyn-Moskal, 2012). Generally, it may be acknowledged that the patient suffering from coxarthrosis struggles with a chronic disease, where the development of somatic symptoms are not possible to be restrained. It seems difficult in cases of people with high internal loci of control and task-oriented coping. Reports from some studies indicate low controllability in stressful situations and maladaptive patterns of coping in some patients (Endler, 1997). Patients with a problem-oriented coping style may suffer increased psychological costs, if their actions are not accompanied by improvement in health. A study by Smith and Wallston (1996) of osteoarthritic patient profiles revealed that a percentage showed a tendency to blame themselves, which could be the consequence of an incorrect assessment. Our results might explicate this issue. We found that emotionality differentiated patients regarding coping styles (subjects with negative emotionality were oriented toward self-blame but also toward denial). Analyses performed by Connor-Smith and Flachsbart (2007) have shown that personality traits predict moderately dispositional coping; to be more accurate, neuroticism focuses on negative emotions (including self-blame). Our findings regarding the linkage between negative emotionality and denial may indicate that they show type C (denying negative emotions) or, in some instances, type D symptoms (negative affect, repression of negative emotions, self-blame). The combination of negative emotionality, denial and self-blame can therefore have psychosomatic outcomes; hence this problem seems to deserve further exploration.

Another group of coping patterns concerns concentration on emotions. Miller reports that emotional coping is connected with negative adaptation, in the form of anxiety and depression disorders and maladjustment to the disease (Miller & Cronan, 1998). It is believed that a person focuses on difficult emotions in crises and situations where disease is a common phenomenon (Endler, 1997). In conclusion, results of studies concerning relations between coping and mental states in somatically ill patients are inconclusive, although it seems that the task-oriented style brings relatively modest benefits (McKnight et al., 2010; Miller & Cronan, 1998).

Generalizing the results of the study group should be done with care, as an elderly person's emotionality depends on many other factors. Moreover, a significant variable conditioning mental discomfort is the intensification of pain and mobility due to the disease (Talarkowska-Bogusz et al., 2006). An additional difficulty was how to hinder contact with many people, for whom participation in this type of study could be fatiguing. The study group was a small section of the population, and therefore the characteristics of the sample allowed us only to make initial generalizations, especially with regard to the elderly who were in an advanced stage of OA and who experienced difficulties associated with surgical treatment and then with a long-term rehabilitation. Undoubtedly, comparing the general results of a heterogeneous group of males and females in most of our findings was the limitation. This weakened the observed tendencies and did not bring answers related to particular gender groups regarding the moderating effect of coping styles.

To conclude, our paper discussed whether temperament traits determine the severity of anxiety directly before THA and during rehabilitation. It concluded that the intensity of stress and anxiety decreased after the treatment regardless of personality traits; however, it remained prevalent in a fraction of patients. We have shown evidence that planning and an active coping style will moderate the negative influence of temperament traits to the level of anxiety in the study group.

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Why insight in psychotherapy does not always lead to behaviour change?

Abstract:

The purpose of this review was to come closer to answering the question why insight gained in psychotherapy does not necessarily lead to a change in patient's behaviour. The review of literature on the subject of insight allowed us to distinguish two types of insight: "more intellectual than emotional" (*I-e*) and "more emotional than intellectual" (*E-i*). In addition, we differentiated *E-i* insight with a component of negative emotions (*aversive*) and with a component of positive emotions (*corrective*). We assumed that each type of insight would motivate the patient to change their behaviour in a different way. The *I-e* insight makes it easier for the patient to achieve concrete adaptive goals, the *E-i aversive* insight discourages them from attaining maladaptive goals, while the *E-i corrective* insight encourages them to form and follow adaptive goals. We also analysed the influence on behaviour change of some other factors, co-occurring with insight: the therapeutic relationship, the actions of the patient and his narrative motivation. Insight does not always lead to a change in behaviour because: 1) the type of the insight does not match the type of patient's motivation; 2) insight occurs in the context of a weak therapeutic relationship or is not reinforced by the patient's actions; 3) insight is not a key factor of change, but rather its effect or indicator.

Keywords:

insight, behaviour change, goal-oriented motivation, impulsive motivation, narrative motivation

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Streszczenie:

Celem opracowania było zbliżenie się do odpowiedzi na pytanie, dlaczego wgląd uzyskiwany podczas psychoterapii nie zawsze prowadzi do zmiany zachowania pacjenta. Eksploracja literatury na temat wglądu w psychoterapii pozwoliła wyodrębnić wgląd „raczej intelektualny, niż emocjonalny” (I-e) oraz „raczej emocjonalny, niż intelektualny” (E-i). Dodatkowo wyróżniliśmy wgląd E-i z komponentą emocji negatywnych (awersyjny) oraz z komponentą emocji pozytywnych (korektywny). Uzasadniliśmy, że każdy rodzaj wglądu w inny sposób motywuje pacjenta do zmiany zachowania. Wgląd I-e ułatwia pacjentowi realizację wyraźnych celów adaptacyjnych, wgląd E-i awersyjny zniechęca do realizacji celów nieadaptacyjnych, natomiast wgląd E-i korektywny zachęca do przyjęcia i realizacji celów adaptacyjnych. Poddaliśmy też analizie wpływ niektórych, współwystępujących z wglądem, uwarunkowań zmiany zachowania: relacji terapeutycznej, działań pacjenta oraz jego motywacji narracyjnej. Wgląd nie zawsze prowadzi do zmiany zachowania dlatego, że: 1) typ wglądu jest niedostosowany do typu motywacji pacjenta, 2) wgląd pojawia się w kontekście zbyt słabej relacji terapeutycznej lub nie jest wzmocniony działaniem pacjenta, 3) wgląd nie jest kluczowym czynnikiem zmiany, tylko jej efektem bądź wskaźnikiem.

Słowa kluczowe:

wgląd, zmiana zachowania, motywacja celowa i impulsywna, motywacja narracyjna

A thirty-year-old man started to show signs of panic disorder after breaking up with his partner. This man has already been in therapy several times, and thanks to that he understood that he tended to react with anxiety to any separation in his life. He was also aware of the source of his anxiety, which was a separation from his mother, who was hospitalised for many months when he was barely four years old. Even though in the course of his therapy he achieved many more insights into the nature and source of his anxiety, he did not eliminate it. Another patient, a high-earning financial analyst, understood through his therapy that his depressive reactions are associated with his non-autonomous choice of career path. In therapy he realised that he chose his career in order to please his critical and demanding father, which required him to abandon his artistic passions. When he realised how much he has lost in his life, his depressive reactions intensified – he began to blame himself for not standing up to his father and not following his own path.

Both of the above examples (see Friedman, 2011) seem to reflect a phenomenon occurring in psychotherapeutic practice. Some clients, even though they understand more and more of their life, do not introduce positive changes into it, or even experience some negative ones. Why? In order to come closer to answering this question we should first clarify what type of concrete benefits, if any, the patient can gain from insight, as well as what such a process might consist in.

Insight has long been deemed to be one of the key therapeutic factors by therapists from various orientations (Mahoney, Norcross, Prochaska, & Missar, 1989). Nonetheless, in the last sixty years there were just a dozen or so studies carried out which explored its relationship with change in psychotherapy. Relationships between insight in

psychodynamic psychotherapy and improvements in the patients' functioning were found in six of the eleven studies (research reviews: Gibbons, Crits-Christoph, Barber, & Schamberger, 2007; Johansson et al., 2010). In the context of cognitive-behavioural therapy this association was found in three out of four studies, whereas in another study, exploring the effectiveness of marriage therapy, it was not found at all (research review: Grosse Holtforth et al., 2007).

The research evidence so far provides initial support for the hypothesis that insight may lead to therapeutic results. Nevertheless, the clear ambiguity of the obtained results makes it difficult to formulate generalised conclusions. This ambiguity may stem from differences in, for example, the adopted definition of insight, specification of its key aspects, methods of measuring insight, the type of disorders, the choice of the indices of effectiveness of therapy, or the importance attributed to insight across different therapeutic modalities (see: Connolly Gibbons et al., 2007, Hill et al., 2007).

The concept of insight

With regard to the differences in the understanding of insight it is worth noting that in psychodynamic therapy the patients are encouraged to discover the inner conflicts and their associations with interpersonal relationships, while in the cognitive-behavioural therapy they are encouraged to discover new cognitive schemas and new meanings of interpersonal situations (Elliott et al., 1994). In experiential therapy insight most often relates to the increasing self-awareness and understanding of one's feelings, and in the systemic therapy – to the discovery of cycles of reciprocal reactions within relationships and to understanding “how” (not “why”) they become problematic (Rubinstein-Nabarro, 1996). The differences in the definition of insight within different therapeutic orientations also imply markedly different methods of its measurement. For example, the PCCS scale (Patient Cognitive Change Scale), used in a study of patients taking part in cognitive-behavioural therapy, includes such aspects of insight as, for example, “becoming aware of one's beliefs” or “identification of errors in thinking” (Tang & DeRubens, 1999). In turn, the measurement of the “psychodynamic” insight with the use of the IS (Insight Scale) is based on the estimate of, for example, the patient's understanding of his “internal conflicts, associated problems, reoccurring behaviours and associations with previous experiences” (Johansson et al., 2010).

Because of the diversity of definitions and measurement methods a group of twenty eight researchers and practitioners (Hill et al. 2007), all of whom were co-authors of the book “Insight in Psychotherapy” (Ed. L.G. Castonguay & C. Hill), attempted to coin a common definition of this term. The majority of them agreed that insight is usually

conscious in character and is associated with both the feeling of novelty (that is, with the client understanding something in a new way), and the formation of new connections (that is, with discovery of new relationships between past and present events, the therapist, the significant persons, cognition, emotions or contradicting statements). Eventually, the majority of authors agreed that insight can be defined as a “conscious meaning shift involving new connections (i.e. ‘this relates to that’ or some sense of causality)” (Hill et al., 2007, p. 442). This definition was adopted as a starting point in our further analyses.

The concept of behaviour change

In psychoanalytical tradition, which attributes a considerable therapeutic potential to insight, behaviour change was for a long time seen as a natural consequence or even an integral part of a “true” insight (Sandler, Dare, & Holder, 1973). This way of thinking is currently difficult to uphold, as an observable therapeutic change often occurs only after some time after achieving insight (see Høgland et al., 1994). In such cases it is unclear to what extent the change was brought about by insight alone, and to what extent by other, mediating factors, initiated by the insight or co-occurring with it. Another extreme is the reduction of the change influenced by insight to a change of a first and foremost “internal” character, for example within the area of thought and experiencing. In this case, potential consequences of insight may be confused with its indicators. Therefore, according to Gelso and Harbin (2007), a valid examination of therapeutic consequences of insight requires the separation of the concepts of change and insight. The authors proposed that change influenced by insight should be described in its most visible, “external” manifestations, that is, in the actions or in another observable way of functioning of the patient. For instance, the process of the lowering of the level of anxiety can be analysed on the cognitive, emotional, verbal and motor levels (see: Wachtel, 1997). However, only the latter two levels are observable and can be differentiated from the cognitive and emotional aspects of insight. In our further discussion we will, following Gelso and Harbin (2007), use the term behaviour change in relation to verbal and motor reactions, as an “external” (manifested through widely understood action) expression of the changes of a more “internal” character.

In the context of the above definition, an adequate indicator of behaviour change would be, for example, a reduction in psychopathological symptoms or a change in interpersonal functioning (see: Johansson et al., 2010). Consequently, the inadequate indicators of behaviour change would include a sense of change, experience of positive emotions or of change in cognitive schemas (see: Grosse Holthfort, et al., 2007).

Insight and motivation to change behaviour

Assuming that all behaviours are motivated (Franken, 2002), we can infer that the behaviour change is dependent on either conscious or unconscious motivation of the person to modify their behaviour. Further, we can assume that the stronger the motivation to change behaviour brought about by insight, the greater the probability of the change actually occurring. Therefore, does insight, understood as a conscious change of meanings, accompanied by formation of new connections, actually induce motivation to change behaviour?

In order to better estimate the motivational potential of insight, we will examine more closely the mechanisms underlying the “conscious change of meanings” as well as the “new connections” that might be related to this change. We will base our discussion mostly on two contemporary conceptualisations of insight: psychodynamic and cognitive-behavioural.

Psychodynamic and cognitive-behavioural conceptualisations of insight

In psychodynamic perspective, the “conscious change of meanings” consists in becoming aware of or understanding the “connections” between one’s feelings, thoughts and actions or between the internal processes (thinking, experiencing) and the past and present events (Gelso & Harbin, 2007). However, just the intellectual understanding, or the so called *intellectual insight* – which is emphasised also by researchers from other orientations than psychodynamic (for research review see: Elliott et al., 1994) – is not sufficient to bring about a change in behaviour. This change occurs mostly due to *emotional insight*, that is, understanding accompanied by emotional experiencing. Intellectual insight plays an important role of an “initial map” of the problematic areas and their reciprocal connections, which prepares the person for the experience of emotional insight. The patient first identifies his conflicts internally, connects them to a series of experiences from his childhood, and even comes to understand their destructive influence on his present relationships, feeling that “there is something to that”. In time he begins to experience emotions of which he was not previously aware in parallel with the continuing analysis of associated intellectual material. For example, he might realise how his strong feelings of worthlessness are associated with his early, difficult relations with caregivers, and how much he wanted and still wants to live differently. Gelso and Harbin (2007) believe that it is this kind of internal change (the conscious change of meanings) which brings a series of benefits to the patient: a) it increases his ability to differentiate the pain situated in his past relationships and his present experiences; b) it limits generalisations of

maladaptive, fixed in the past reactions to present situations, and c) it increases motivation to abandon the maladaptive actions and initiate new, more constructive ones.

In the cognitive-behavioural perspective, the “conscious change of meanings” indicates gaining new understanding of self or others (e.g. of the causes, limitations or consequences of behaviours, thoughts, intentions and feelings of oneself or of other people). The patient understands himself or others in a new way when she becomes aware of the “connections” between mental representations which she previously did not perceive to be connected with one another or associated in other ways (Grosse Holtforth et al., 2007). This new understanding of self and others is, to a larger degree than in the psychodynamic approach, intellectual rather than emotional in character. Intellectual insight functions not as much as a “map”, preparing the person for the change influenced by emotions, as it is seen as a potential for change in itself. This potential stems from the cognitive therapy’s greater emphasis on the search for “connections” based on logical thinking (e.g. discovering errors in thinking about a relationship with a loved one). In psychodynamic therapy the search for “connections” (e.g. discovering similarities in one’s attitude to the therapist and to the loved one) is based to a greater extent on associative thinking (see, e.g. Gabbard, 2010). A patient working with a cognitive-behavioural therapist may, for example, become aware that her maladaptive attitudes did in fact make sense in her earlier life and that many people in such circumstances as the ones she was in would react to rejection in a similar way to her – but also that at present such reactions are not justified. Conclusions drawn from past experiences (for example, “people cannot be trusted”), even though they seemed true in the past, are no longer true. They cannot be generalised onto present relationships, since there are people in the patient’s surroundings, including the therapist, who care about her and value her just as she is. Grosse Holtforth and colleagues (2007) believe that this type of conscious change of meanings (they call it *clarification of meanings*): a) increases the sense of efficacy and control in life; b) facilitates the experience of freedom from past and present limitations in functioning; c) expands the repertoire of behaviours towards self and others.

In summary, even though the potential effects of insight in psychodynamic and in cognitive behavioural therapies turned out to be comparable (on the level of the reduction in psychopathological symptoms, see Ablon & Jones, 1999; Jones & Pulos, 1993), they may rely on separate mechanisms of insight. This hypothesis is supported by a comparison by Elliott and colleagues (1994), who analysed the experiences of insight of three persons participating in psychodynamic-interpersonal therapy and three persons taking part in cognitive-behavioural therapy (the insight was estimated according to the following criteria: metaphorical imagery, perception of patterns and connections, suddenness, and novelty). Insights gained by patients in cognitive-behavioural therapy did not include

– contrary to insights in psychodynamic therapy – an awareness of emotional pain. What is more, the “cognitive-behavioural” experiences of insight were mostly related to reattribution, while the “psychodynamic” ones – to the discovery of connections between key conflicting interpersonal themes, emerging during subsequent sessions.

Also, results obtained by Jones and Pulos (1993) seem to correspond to the above conclusions, as they indicate the prevalence of processes of either rather intellectual, or rather emotional character, depending on the type of therapy. The researchers, using a 100-item tool describing processes occurring in therapy (Psychotherapy Process Q-set), compared the recordings of sessions of 30 patients undergoing brief psychodynamic therapy and 32 patients participating in cognitive-behavioural therapy. The results have shown that – regardless of many common elements – there were significant differences in the process of therapy depending on its type. Cognitive-behavioural therapy facilitated the development of control over negative emotions through the use of intellect and rational thinking by the patients, in the context of conscientious encouraging, supporting and comforting by the therapist. On the other hand, in psychodynamic therapy the emphasis was laid on evoking emotions, becoming aware of problematic feelings as well as integration of present difficulties with past experiences, using the therapeutic relationship as a factor of change.

The specific character of “psychodynamic” insight, as compared to “cognitive-behavioural” one, is also indicated in the research by Connolly Gibson and colleagues (2009) as well as by Kallestad and colleagues (2010). One of the common elements of both studies was the use of insight measurement tools based to a larger or lesser degree on psychodynamic conceptualisation of insight. Even though in both studies the improvement in symptoms occurred in patients in both psychodynamic and cognitive-behavioural treatment, the association between the achievement of insight and the reduction in symptoms was present only for patients in psychodynamic treatment.

Type of insight and motivation to change behaviour

The outlined conceptualizations of “psychodynamic” and “cognitive-behavioural” insight, as well as the currently still limited number of obtained results which indicate differences in the process of insight in different types of therapy, suggest that it is possible to initially distinguish two types of insight: 1) *E-i* insight, with a larger component of emotional (or associative) processes than intellectual processes; 2) *I-e* insight, with a larger component of intellectual (or causal) processes than emotional ones.

Specifying this distinction further, we can assume that the distinctive characteristic of availability of emotions in both cases regards not only their intensity, but also their

valence. The *E-i* insight is more often accompanied by mental pain and negative emotions (see Elliott et al., 1994). On the other hand, the *I-e* insight is more typically associated with emotions such as joy, which is related to the process of learning (Grosse Holforth et al., 2007). It is worth noting that the feeling of joy accompanying insight may result from both positive reinforcement (insight into new, concrete possibilities gives hope of solving one's problems) (see Grosse Holforth et al., 2007) as well as negative reinforcement (insight into emotional nature of one's problem, evoking a desire for change and hope for a positive breakthrough in life). Still, it can be assumed that joy derived from positive reinforcement (stronger?) is more characteristic of insight of the *I-e* type, while joy coming from negative reinforcement (weaker?) is more typical of the *E-i* type insight.

Further, we can presume that the two types of insight differ with regard to the material subjected to the conscious, intellectual analysis. The *I-e* type of insight concerns the connections between elements which were already present in one's awareness, while the *E-i* insight is associated with the connections between the material one is already aware of and that which has not yet reached awareness (see: Grosse Holforth et al., 2007). In the language of the dual process theory, that is, of the reflexive-impulsive processing (Smith & DeCoster, 2000; Strack & Deutsch, 2004; see Bargh, 1997; Epstein, 1990), we can say that reflexive processing (based on declarative memory) in case of the *E-i* insight, includes more of the material typical to the impulsive system (contained in associative memory) than in the case of the *I-e* type insight.

The last of the aforementioned differences is very important for the understanding of the motivational mechanisms in both types of insight – that is because the reflexive and the impulsive systems use different types of motivations. Motivation in the reflexive system is goal-oriented. It relies on a conscious, intentional pursuit of goals, which are based on particular values and representations of future, desirable states. On the other hand, motivation typical for the impulsive system is affective in character and is based on pre-conscious or unconscious approaching or avoiding (Strack & Deutsch, 2004). It is not difficult to imagine a situation in which a patient consciously strives for a beneficial change (e.g. wants to become more independent), while simultaneously subconsciously sabotaging his endeavours (e.g. by seeking safe dependence) (see Greenwald, 1973; Yalom, 1980).

In somewhat simplistic terms, we can say that if the goal-oriented motivation is a key part of an insight, then most probably the *I-e* insight will be sufficient to initiate action towards change. For example, the patient can, through the *I-e* type of insight, come to an understanding of how his beliefs up till now had limited his ability to solve his problem. He may also understand what other beliefs might be better adjusted to his

present situation and what new capabilities he now has which can help him cope with his problem. Because the conscious motivation for change does not seem to be undermined by the competing impulsive-affective motivation, the patient can participate in therapy with a view to coming to understand his problem and learning new strategies of coping with it, rather than in order to, for example, prove to the therapist that he is incompetent and prove to himself that he is “worthless”. In such case the patient actually (not just in pretense) cooperates with the therapist and gains new competencies, which increases his sense of self-efficacy and further motivates him to introduce desired changes (see Grosse Holforth et al., 2007). In general, the benefits of the *I-e* insight stem from the expansion of resources necessary to achieve the desired, relatively unambiguous goals.

However, if for the given patient the impulsive-affective motivation is more important, then she will most probably benefit more from the *E-i* type insight. Through the *E-i* type insight the patient may become aware of the highly frustrating fact that she is directed by, for example, aggressive or symbiotic motivations, which do not agree with her image of herself. What is more, she can notice the connections between these motivations and the often painful experiences from her past, as well as with problems in her present relationships – including the relationship with her therapist. Taking into account the fact that reflexive processing exhausts the resources of attention and working memory faster than associative thinking (see, e.g. Barrett, Tugade, & Engle, 2004), the *E-i* type of insight would probably be facilitated by minimisation of logical analysis in order to enhance the systematic exploration of associative connections. If the parts of material which act against change, and which are often associated with impulsive-affective motivation, are introduced into the field of attention and kept in the working memory for a prolonged time, the patient will have a chance to process them reflexively and thus subject them to her conscious control. She can then make a decision to abandon the pursuit of goals which prevent the desired change (see Greenwald, 1973; Yalom, 1980), or to reformulate them to agree with the goals she wants to achieve during therapy. In summary, the benefits of the *E-i* type insight stem from clarification or disambiguation of the desired goals.

In case of patients showing relatively unambiguous motivation for change (goal-oriented motivation relatively integrated with impulsive-affective motivation), work directed at achieving the *E-i* type insight seems inadequate and too costly emotionally. Such patients usually cooperate well with the therapist, quickly learn new skills with regard to analysis and control of their own states and are efficient in introducing them into their lives (see the so called “clients”; DeShazer, 1985). Because of that they do not need insight as an aid for their motivation for change. On the other hand, in case of patients with clearly ambiguous motivation for change (goal-oriented motivation in opposition to the

impulsive-affective motivation), work directed at achieving the *I-e* type insight may be ineffective. Such patients appear to be doing everything they can to prevent success in therapy (see the so called “especially difficult clients”; Kottler, 1992). Thus, insight which expands awareness of the “tools” that can be used to solve problems will most probably not motivate them to make use of those tools.

Factors co-occurring with insight and behaviour change

As we have shown earlier insight, regardless of its type, may motivate behaviour change. Not detracting from the importance of insight in psychotherapy, we must however point out several other factors, without which the type of insight that motivates the patient to change may not occur at all or may not be potent enough. Moreover, we would like to suggest that insight can be just one part of a more complex process of therapeutic change and may not always be its necessary part.

Insight and the therapeutic relationship

One of the most important moderators of the relationship between insight and behaviour change may be the therapeutic relationship (Gelso & Harbin, 2007; Hill et al., 2007). A good therapeutic relationship provides the patient with support needed for insight work and for behaviour modification. Gelso and Harbin (2007) assume that existence of such a therapeutic relationship is indicated by: mutual trust, emotional bond and cooperation between the patient and the therapist. When the patient trusts the therapist (and her intentions and skills) more than he is afraid of his therapist, it is much easier for him to allow himself to “observe” his threatening experiences and thoughts (see the buffering effect of therapeutic relationship in this study: Gelso, Hill, Mohr, Rochlen, & Zack, 1999), as well as to risk a change of his previous patterns of functioning. The therapeutic relationship should therefore facilitate: a) the achievement of the *E-i* type insight into the emotional nature of problems, as well as the *E-i* type insight into dysfunctional thinking schemas and new solutions; b) initiation of attempts to change behaviour, which are motivated by the *E-i* type insight or discovered through the *I-e* type insight.

The role of the therapeutic relationship in the process of making changes in the patient’s life is not limited just to providing safe environment, which encourages self-exploration and testing of new behaviours. The therapeutic relationship in itself presents an attractive subject for insight. Assuming that it consists of three components (that is, therapeutic alliance, transference and the real relationship; Gelso & Harbin, 2007), it can constitute a basis for exploration of both the relational patterns revealed through transference

(and countertransference) and of the processes occurring within the developing real relationship between the patient and the therapist (Yalom, 1980).

Insight into transference reactions allows the recognition of distortions in perception of the relationship with the therapist and of analogous distortions in perception of relationships with one's loved ones. Becoming aware of maladaptive patterns from the past which are repeated in present relationships increases the patient's readiness to abandon them (see Kuncewicz, 2009) and to try out new patterns instead (Gelso & Harbin, 2007). On the other hand, insight into the real relationship with the therapist relates more to the patient's knowledge of how she experiences and understands her therapist as a person as well as how each of them experiences the other. If the therapist takes care to make the relationship authentic and adequate (without distortions from countertransference), the experiences of the patient in such relationship are mostly positive, associated with liking and mutual care (see Gelso, 2002). According to Gelso and Harbin (2007), this type of understanding can be successfully generalised onto other close relationships outside of therapy. For instance, a patient who discovers that the therapist likes him as a person may also discover that he is liked by some other people close to him. A patient who had courage to trust the therapist as a person a bit more, and experienced the positive consequences of this decision, may come to understand that it is this taking of risk to trust others despite fear of rejection that forms the basis of close relationships (see: model of risk regulation in close relationships: Murray, Holmes & Collins, 2006).

Transference insights, as well as the real aspects of the relationship with the therapist, are highly emotional in character; thus, to all appearances they resemble the *E-i* type insight. However, each of them seems to play a different role in the therapeutic process. Insight into transference aspects of the relationship functions more as a negative reinforcement (the patient realises which patterns she would rather not repeat in her relationships) – and thus it corresponds closely to the *E-i* insight, described earlier in this work. On the other hand, insight into real aspects of the relationship with the therapist acts more as a corrective experience, which increases hope (Hartman & Zimberoff, 2004). Such experience is a strong positive reinforcement (the patient discovers which relationship patterns she would like to repeat). With regard to its association with positive emotions as well as being an opportunity for discovery of new possibilities, insight into the real relationship with the therapist is similar to the description of the *I-e* type insight, although with regard to emotional intensity it more closely resembles the *E-i* insight. Thus, insight into the real aspects of the relationship with the therapist combines beneficial aspects of both types of insight: the depth of emotional processing (*E-i* insight) and learning new solutions (*I-e* insight). It provides the patient with an opportunity to modify the ways of reacting rooted in the affective-impulsive system on the spot,

within the session and within the safe relationship with the therapist. Possibly for this reason Gelso and Harbin (2007), as well as Yalom (1980), believe that work on insight into the real relationship between the patient and the therapist carries the greatest potential for constructive change.

The therapeutic relationship may also constitute a stand-alone change factor, independent from insight (see the results of a metaanalysis by Grencauge & Norcross, 1990). This is because the changes influenced by corrective experiences within a relationship with an emotionally engaged, supportive therapist occur also on the level of procedural memory. The patient acquires in this way new implicit knowledge (without a symbolic representation) regarding appropriate ways of behaving, feeling and thinking in contexts of different relationships (Gabbard, 2010; Lyons-Ruth, 1998). Thanks to this knowledge he unintentionally “restructures” his previous relational schemas, and in parallel with this restructuring he also modifies his behaviour (Amini et al., 1996).

Insight as a consequence of behavior change

Our analysis so far regarded the mechanisms of behaviour change due to insight. However, a reverse process is also possible, that is, insight may be brought about by a change in behaviour. This effect has been repeatedly observed by behavioural therapists (see Cautela, 1993; Powell, 1986, 1996). For instance, in a university clinic run by Powell (1986), the “unplanned” insight turned out to be an important factor of therapeutic change for as many as 15% of patients participating in behavioural therapy due to, for example, migraines, symptoms of Raynaud’s disease or fear of public appearances. Case analyses have shown that insights achieved during behavioural therapy regarded the understanding of the relationship between the symptoms and their causes or consequences (Cautela, 1993), as well as of the associations between symptoms and emotions or events that were previously unconscious (Powell, 1996). With regard to their content, these insights can be included in both groups – *I-e* or *E-i*. Taking into account the “randomness” of the insights it is more difficult to estimate their motivational function. The *I-e* insight could have, for example, expanded the understanding of the causes and ways of coping with anxiety, which might have encouraged the patients to introduce more effective control in intrapsychic and interpersonal threatening situations. On the other hand, the *E-i* insight could have, for example in the case of psychosomatic symptoms, increased awareness of emotional experiences associated with them as well as provided an opportunity for verbal expression and increased the patients chances of reflexive processing (see Niederhoffer & Pennebaker, 2002; see Cozolino, 2002). It is likely that the combined process of expression and reflexive processing of emotions increases the effectiveness of internal mechanisms of emotion regulation (see Rottenberg & Gross, 2007), and

thus lowers the chronic emotional tension – subsequently reducing somatisation. Therefore, a behaviour change (reduction of symptoms) in the context of the *E-i* type insight can also be explained in the “non-motivational” categories.

Hill and O’Brien (1999), as well as Gelso and Habrin (2007), suggest that the relationship between insight and behaviour change is more synergic, rather than automatic, in character (see Wachtel, 1997). This means that the benefits from an insight-oriented therapy may be greater when the therapist also focuses on the work on behaviour modification, which directly stems from insight. What is more, insight detached from action may turn out to be temporary, and therefore of limited usefulness. Action in some sense “expands” insight, broadening it to include additional modalities (e.g. motor-verbal), thanks to which insight can take a form of a more stable mental schema and be better integrated with the patient’s concept of self (see *ibid.*).

Insight and the narrative motivation

What if insight “in and of itself” does not fulfill a motivational function? We will attempt to answer this question in the context of the narrative approach. This approach seems especially useful for our analyses due to its compatibility with contemporary models of memory (especially the connective, schematic and thematic models; for review see Niedźwieńska, 2004), neural network models (e.g. Cozolino, 2002), as well as with the “natural” language of psychotherapy (Frank & Frank, 1993). From the narrative perspective, according to which an individual interprets events and experiences as particular stories (see: e.g. Bruner, 1986), insight can be seen as a mediating factor in the more fundamental process of therapeutic change. This fundamental therapeutic process is the construction of a story about oneself (autonarration), which structures experiences in areas of life important for the individual (Harber & Pennebaker, 1992; McLeod, 1997).

From the teleological perspective of Trzebiński (2002) the autonarrative schemas are constructed around key themes, goals, values or intentions of the person (What do I want? What is important to me? What do I fear?). Complete autonarrative schemas consist of four sub-schemas: 1) intentions (aims, goals) important to the person; 2) other persons – partners of the subject; 3) possible complications, which befall the subject and her partners on the way to realise the intention; 4) conditions and methods of overcoming the complications and realising the intention (Trzebiński, 2002). The key motivational mechanism stems from the attempt to construct a coherent, complete and meaningful story about oneself in the context of experienced events. If autonarration in one of the important areas of life is not constructed, the motivation to create it is sustained and interferes with other autonarrations. This phenomenon resembles the Zeigarnik effect (1927/1983), which indicates a better memory (greater cognitive availability) of unfinished tasks as compared to

finished ones, as well as the fact that the motivation to finish the unfinished tasks is sustained on the unconscious level and interferes with execution of current tasks. The presence of the motivation to “finish” or to create a complete and coherent story in narrative therapy is indicated by the so called “fragmented stories” (see Angus & Bouffard, 2004), and in the experiential therapy – the so called “unfinished business” (see Greenberg, 2002). Let us imagine an adult patient who behaves in a childish way in an attempt to force his partner to give him the care he did not receive from his parents in childhood. It is possible that the expectations of care (intentions of the subject), due to a difficult childhood relationship with his parents (complications involving the partners of the subject) have not been fulfilled (the conditions for realisation of intention have not been met). The inability to organise one’s experiences regarding the receiving of care into a coherent, satisfactory narration may act to sustain the motivation to receive care in the state of hyperactivity, making it difficult to engage more deeply in an equal relationship with one’s partner.

Incoherence or fragmentation of autonarrative schemas may also depend on the degree of crystallisation of their fundamental sub-schemas, that is, intentions (see: Trzebiński, 2002). The more crystallised – that is, developed in the cognitive and affective aspects – the “intention”, the more it takes on the character of goal-oriented motivation (conscious and controlled) and the less of the impulsive-affective motivation (unconscious and automated).

In the former case, when the intention is well crystallised, the incoherence of autonarration regards rather its schematic level. The individual components (subschemas) of the autonarration are not sufficiently well developed or integrated with the subschema of intention for the person to understand herself and consequently to undertake adequate actions. For example, the person knows very well what she wants (clearly outlined intention), understands the obstacles (clearly outlined complications), but does not know how to overcome them (poorly developed conditions for the realisation of intention). Another possibility: the person knows what she wants (clearly outlined intention), but does not understand the obstacles well enough (poorly outlined complications), and so she does not know how to cope with them (poorly outlined conditions for the realisation of intention). In both above cases the person is sufficiently motivated to try to better understand the mechanisms which block the realisation of intention (e.g. the mechanisms of anxiety or depression) or to explore strategies for the desired change and to introduce them into her life. It is therefore likely that in the construction of a coherent, hope-inspiring and meaningful story of oneself as a protagonist, who effectively copes with the challenges of life (see: Bauer, McAdams, & Sakaeda, 2005), the *I-e* type insight will be the most useful – although not as much with regard to its motivational function, as the cognitive

one. In the narrative perspective insight is a tool “in the service” of the autonarrative motivation. It can also be said that an interest in achieving the *I-e* insight is a result of the narrative motivation (anchored in the content of the sub-schema of intention) to create a coherent story, whereas the presence of insight is an indicator of the process of constructing this story (see understanding of insight as an epiphenomenon: Grosse Holtforth et al., 2007).

In yet another case, the intention may be poorly crystallised and the incoherence of autonarration may concern mostly the elementary, sub-schematic level. A person with a poorly developed sub-schema of intention does not know “what he wants”, and in extreme cases does not even know “who he is” or even “if he is at all” (see McWilliams, 1994). As a consequence the person may not only not have the “intentional” bases for constructing coherent narrations about important life issues at his disposal, but he may in general have trouble with narrative formulation of elementary events in his life. If we assume that the ability to narrate events is a prerequisite for experiencing emotions, especially the complex ones (Lazarus, 1991), we can speak of the difficulty in experiencing of oneself and of others. Thus, the person does not initiate appropriate actions because he experiences neither the motives nor the emotions associated with them, which direct towards these actions (Trzebiński, 2002). It seems that to such patients the *E-i* type insight may be more beneficial, since it is directed at experiencing the self and at “expanding” the sub-schema of intention. It is possible that both the “positive” insight (stemming from a corrective experience of the therapeutic relationship) as well as those insights which constitute a negative reinforcement (related to becoming aware of life losses) may be useful in this case. Interestingly, in the context of problems with experiencing one’s self, even a “painful” insight of the *E-i* type can be highly rewarding. For example, experiencing one’s previously ignored feeling of loneliness may be one of the few experiences, available at this stage in therapy, which provides the person with a sense of identity. It is also possible that some autodestructive behaviours may as well reflect the narrative motivation to construct a coherent story, although they are associated with its more fundamental level, that is, the attempt to achieve a sense of self. Thanks to the *E-i* type insight patients with considerably fragmented autonarrative schemas can have a better “sense of self”, can gradually clarify their desires (intentions) and in time can use them as a basis for building more complex autonarrations, which will give them better understanding of themselves. Nonetheless, the expansion of the narrative sub-schema of intention may occur without the presence of the *E-i* insight. The fundamental sub-schemas of intention (identical to experience schemas), which are coded in procedural memory, may develop as a consequence of implicit learning of rules of experiencing within

the supportive therapeutic relationship. In this case the *E-i* insight may serve as an indicator of the process of expansion of the narrative sub-schema of intention.

Summary

The basis of our analysis was the question why some patients do not change their behaviour despite having achieved insight. To answer it, we began with an attempt to identify mechanisms associated with insight, which might be responsible for the change in the patient's behaviour. Thus, we distinguished two types of insight: "more intellectual than emotional" (*I-e*) and "more emotional than intellectual" (*E-i*), and we subsequently explored how and under what circumstances each of them could lead to a behaviour change.

We have shown that the *I-e* type insight expands the understanding of the mechanisms underlying the problem and of possible solutions, as well as that it can be especially useful for those patients whose desire to introduce a constructive change into their lives is based on the goal-oriented (conscious, intentional) motivation. Thanks to the *I-e* insight patients acquire adequate resources for implementing change, which makes them feel more competent and more ready to modify their behaviour. The *I-e* insight, often associated with positive emotions of moderate intensity, may also be treated as a learning experience, which in itself is rewarding and motivating towards change.

On the other hand, the specific characteristic of the *E-i* type insight is its expansion of the impulsive-affective (unconscious, automated) motivation. This type of insight may be especially beneficial for patients with a conflicted or ambiguous motivation for introducing change into their lives. Thanks to the *E-i* insight these patients can clarify their motivation and thus pursue the behaviour change in a more intentional and effective manner. The *E-i* type insight, with a component of strong, negative emotions, acts as an aversive factor, which motivates the patients to review their previous life goals and to abandon those which may be maladaptive. The *E-i* type insight with a component of strong positive emotions acts as a corrective experience, motivating the patient to develop new, more adaptive goals.

Moreover, we also analysed the influence that other factors, such as therapeutic relationship, patient's actions and narrative motivation, may have on behaviour change. We have shown that the therapeutic relationship buffers the negative emotions associated with the *E-i* type insight, and that it can also be a subject of insight as well as a "non-insight" (based on modification of procedural memory) factor of behaviour change. What is more, the patient's actions may not only be a result of insight, but also a cause of it or a factor deepening and consolidating insight. It is also justified to treat the (auto) narrative motivation as a primary factor in the process of behaviour change, in which

insight merely mediates or indicates this process. We have shown – which corresponds with our previous conclusions regarding the applications of both types of insights – that patients with smaller deficits in the ability to construct autonarrations (having crystallised intentions, but not the conditions for their realisation) may find the *I-e* insight more beneficial, while those with greater deficits (with no crystallised intentions) might gain more from the *E-i* insight.

Conclusion

Basing on our above discussion we can conclude that insight does not always lead to behaviour change for one of at least three reasons. First, the type of insight may be inadequate to the type of the patient's motivation; second, other factors may not sufficiently support the process of insight; and third, insight may not in itself carry the potential for change (although it can be a result of a change or an indicator of another process, which in turn leads to change).

The *I-e* type of insight in the case of patients with impulsive-affective motivation prevailing over goal-oriented motivation, or with considerable deficits in autonarration, will most probably not lead to the necessary changes on the motivational level. On the other hand, the *E-i* type insight in the case of patients with goal-oriented motivation dominating over the impulsive-affective one, or with smaller deficits in autonarration, will most likely not lead to changes – also necessary ones – on the level of analysis and planning. It may also be assumed that some patients with major autonarrative deficits, and being at a certain stage in their therapy, might benefit more from the *E-i* type insight with a component of negative emotions (aversive insight), while others could gain more from the *E-i* type insight with a component of positive emotions (corrective insight).

Change-facilitating insight may be prevented by a weak therapeutic relationship. On one hand it does not provide the patient with sufficient amount of safety and encouragement to explore emotionally difficult material or new solutions; on the other, it limits the opportunities for work on the corrective insight into the real relationship between the patient and the therapist, which carries great potential for change. Insight may also not imply change if its mental representation is not sufficiently “reinforced” by new actions of the patient, resulting from the insight.

Finally, it may turn out that insight might not lead to behaviour change because for some groups of patients it is not a key factor of change. According to Blatt (2004), some patients benefit more from a good quality therapeutic relationship than from developing the concept of self. They may “restructure” their autonarrations without the use of consciousness – in their implicit memory, and possibly to a larger degree on the fundamental

level of the sense of self rather than of constructing the mental meaning of events. The occasional insight may in such cases indicate the ongoing process of change rather than initiate it.

The hypotheses about different motivational functions of the *I-e* and *E-i* type insights (including the “aversive” and the “corrective” insight), as well as about their distinctive usefulness in case of different groups of patients, require empirical verification. A first step towards it could be a construction of an insight scale with several dimensions (see Johansson et al., 2010), while further steps might include carrying out studies on the benefits of insight depending on its type and the type of patients. In the construction of the insight scale it might be worth to include dimensions allowing for determination of the type of insight, such as, for example: a) “novelty” of material vs. “novelty” of connections between elements of material; b) presence of associative vs. logical connections; c) emotional saturation; and d) positive vs. negative valence of the content of insight. Verification of the hypothesis according to which patients, depending on the depth and kind of autonarration deficits, benefit more from the *I-e* or *E-i* type of insight, requires the use of methods of structural analysis of narration (see e.g. Trzebiński, 2002). To estimate the autonarrative deficits it might be useful to analyse the patient’s utterances regarding their “most important life issues” with regard to the degree of crystallisation of individual components of autonarration, including intentions, complications and conditions for realising the intentions.

Further, it will be worth examining which type of insight might be the most beneficial to the patients with differing degrees of personality organisation (Gabbard, 2010; McWilliams, 1994). In the context of the above discussion it can be assumed that the *I-e* type insight might more often be beneficial to persons on the neurotic level of personality organisation, while the *E-i* insight might be more useful to patients on the borderline level. This assumption corresponds to the results of several studies, which show better effects of transference interpretation (aimed at the *E-i* type insight) in patients with a low score on the scale of maturity of the object relation than in patients with a high score (Connolly et al., 1999; Høglund, 1993, Høglund et al., 2006, Johansson et al., 2010). Separate predictions need to be made regarding the aversive and corrective types of the *E-i* insight. Most probably the aversive *E-i* insight could prove harmful to patients on the psychotic level of personality organisation due to the risk of decompensation under the influence of strong negative emotions (Butzlaff & Hooley, 1998; c.f. McWilliams, 1994). Thus, we can speculate that the aversive type of the *E-i* insight may be more beneficial to the “healthier” patients with borderline organisation, while the corrective insight might be more useful to the borderline patients placing closer to the psychotic end of the spectrum.

Finally, we would like to point out that the typology of insights, proposed as an attempt to answer the question in the title, appears to carry potential for explanation of mechanisms of therapeutic change in different groups of patients. However, it is at the moment exploratory in character. It is necessary to further develop it theoretically as well as confirm it through empirical studies.

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