

A close-up photograph of a white monkey's face, looking directly at the camera. The monkey has a red collar around its neck. The background is dark and textured.

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Essays in Psychology & the
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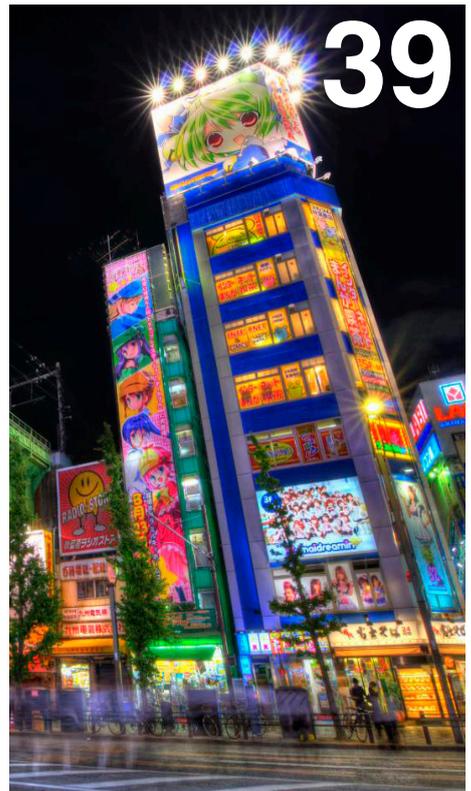
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The IAFOR Academic Review

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Editorial Committee Introduction

One of the central missions of The International Academic Forum or IAFOR is to provide avenues for academics and researchers to explore international, intercultural and interdisciplinary. One of the ways in which we do this is through our in-house magazine Eye, our various conference proceedings, our peer reviewed Journals, and now beginning in 2015 our special editions' of the IAFOR International Academic Review.

In this the first issue of the IAFOR International Academic Review we the editorial committee bring together a selection of the most interesting contributions from our recent Asian Conferences on Psychology and the Behavioral Sciences. The papers selected by the editorial committee for this special edition on Psychology and Behavioral Sciences certainly reflect the international, intercultural and interdisciplinary mission that IAFOR is fostering. They enable us to examine and reflect on critical areas for future discussion and intellectual inspiration.

Brian Birdsell, of Hirosaki University, Japan opens this edition with *Cornering the Muses: A Multifaceted Approach to Measuring Creativity*. In his paper Birdsell considers that creativity is far from a straightforward construct within the field of psychology. His paper attempts to uncover some of the complexity and uncertainty surrounding it. It provides an overview of creativity, it's importance in society, the various stereotypes and contradictory assumptions attached to it, and the search for a working definition of what the creativity actually means. The paper also focuses on a multi-dimensional approach to measuring creativity in order to grasp the many different aspects of it. Birdsell looks at ways to measure the creative process by using divergent thinking tests. He examines the creative product and subsequent assessment test, and also the creative personality test both from a personality trait perspective, as well as, from a biographical inventory of creative behavior and accomplishments. Birdsell considers, that though all the methods are rather standard within the field, they are most often administered in isolation. His view is that bringing them together into one study can broaden the concept of creativity and add understanding to how the different aspects relate to each other. The paper reveals that the creative process appears to be one area that can be developed and expanded further, especially by utilizing creative metaphors, as an instrument for measuring how people combine and connect highly dissonant concepts in both new and insightful ways.

Graham Pluck, from Chuo University, Japan and **Daniel Banda-Cruz**, from the Universidad San Francisco de Quito, Ecuador, in their study *Meta-analysis of*

Intelligence Scores of 'Street Children' in Developing Countries, reveals how unsupervised 'street children' spending much of their living in the inner city urban environments and in conditions of extreme poverty, are generally not attending school and are found to have high rates of psychological traumas and substance abuse. Their paper reveals that these children suffer multiple deprivations and exposure to factors mitigating their normal neurocognitive development. Pluck and Banda-Cruz suggest that because of this, the children's attainment of optimal intellectual functioning is hindered. They consider that this circumstance will have ongoing implications for any interventions aiming at bringing these children back into mainstream society, such as through reintegration into educational programs. Although limited by the dearth of research on the topic, the current results by Pluck and Banda-Cruz suggest that the multiple deprivations suffered by street children in developing countries tend to impair normal neurocognitive development, but that the extent of this varies by culture.

Matthew Escobido and Gillian Stevens from the Asian Institute of Management, Philippines '*Can Personality Type be Predicted by Social Media Network Structures?*' examine how social media platforms have become an integral part of how we live our lives. In particular for those generations who have grown up in the digital world and use these platforms to connect and communicate with many different individuals and groups. Escobido and Stevens show how personality profiling now underpins many facets of our lives. They use the example of digital marketing campaigns that target specific audience groups by using information gleaned from how a person actually engages with social media. Their paper presents an initial summary of work undertaken by them to explore the nature of structural patterns represented by an individual's Psychological Type, as defined by their MBTI type and specific aspects of their social network data, as defined within the context of their Facebook connections and usage. Their initial findings suggest that the virtual world is able to reflect personality differences that exist in the external world.

In her paper *Applying Culture Bound Theory to Acute Social Withdrawal (Hikikomori)*, **Maree Sugai** from Tohoku University of Community Service and Science in Japan, highlights the identification of factors that implicate a cultural bound theory, both in the socio demographic orientation of Hikikomori, and in the physical manifestation of 'opting out' by 'shutting in.' Sugai includes a comparison of those factors from a control culture with the related social expectation withdrawal of a

runaway. It uses as a baseline for analysis, Japan's position in three of the cultural value indices as defined by Hofstede, namely the dimensions of: individualism (IDV), power distance (PDI), and uncertainty avoidance (UAI). Through this Sugai seeks to analyse how, in conjunction with educational norms, peer behavioural patterns, employment expectations within a society, and cultural values can determine how an individual's social withdrawal and 'opting out' may be present. It is Sugai's contention that Hikikomori is not a social situation that is disappearing in Japan, even though it is no longer the hot topic it was over a decade ago. Sugai believes that as popular interest wanes and the media inevitably moves its attention on to the next cult like phenomenon among young people who behave differently, the growing Hikikomori population of over one million suffers should not be forgotten. Sugai considers that educators are in a prime position to facilitate change and questions that often teaching styles that may actually play a critical role in the responsibility for such a huge, national, culturally specific, social epidemic that is not vanishing like its members, but is instead rampant and growing.

Pierluigi Diotaituti, Angelo Marco Zona, and Luigi Rea, of the Department of Human, Social and Health Sciences, University of Cassino and South Latium, Italy, provide a fascinating article titled '*Influence of Emotional Induction and Free or Forced Affiliation on In-group and Out-group Trust Attitude.*' Their paper revisits prior studies on social categorization that understands Emotional Induction as a determinant of intra-group favoritism and inter-group discrimination. Diotaituti, Zona and Rea studied 100 college students and administered to them the two scales taken from the MPP test to assess empathy, pro-sociality, sociability, interpersonal trust, self-esteem, social desirability, cynicism, management of their own impression. They then divided the participants into four experimental conditions: positive and negative emotional induction, free or forced social categorization. Diotaituti, Zona and Rea also submitted to the subjects an IAT so as to measure the change in the attitude of trust or distrust towards the in-group and out-group with respect to the

Michael Liam Kedzlie

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administration of the emotional stimuli. Diotaituti, Zona and Rea reveal that social and emotional intelligence of the subject is a factor that mediates between the induction and trust in the in-group and the out-group, and that negative induction reduces confidence in the members of their own group in a much more significant way than in the out group members and yet more in the forced social categorization.

William Baber, of Kyoto University, Japan is the final paper presented in this special Psychology and Behavioral Sciences edition. Titled '*Cognitive Change among Foreign Managers in Japan's IT Sector,*' Baber considers that though there is a large volume of research on foreign worker adjustment in Japan, little research has taken on the issue of cognitive change. His study opines that Japan is considered a "difficult" culture for foreigners to access, and has been lagging as a topic of business study since the end of the Bubble Era two decades ago. However Baber argues that Japan is nevertheless a major employer of foreign IT workers and is increasingly innovative within that sector. The paper is based upon an original qualitative study taken between Winter 2012 and Spring 2014, which included nine cases interviews. According to Baber these interviews reveal the changes that have occurred in cognitive style and management style preferences. The case studies presented and discussed by Baber were based on Nisbett's (2003) holistic and analytic cognitive styles, Berry's (1980) acculturation scheme and Adler and Gundersen's (2007) concept of synergy with implications for foreign workers and their managers in Japan.

Finally the editorial committee of the IAFOR International Academic Review would like to thank our conference chairs Professor Monty Satiadarma from Tarumanagara University, Indonesia and Professor Dexter De Silva from Keisen University, Japan for their continual guidance with our Psychology and Behavioral Sciences conference program and publications. We also would like to thank the many delegates who attended our conferences and who submitted academic papers to our previous proceedings.

Cornering the Muses: A Multifaceted Approach to Measuring Creativity

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Abstract

Creativity is far from a straightforward construct within the field of psychology, and this paper attempts to uncover some of the complexity and uncertainty around it. The paper first provides a brief overview of creativity, its importance in society, various stereotypes and contradictory assumptions attached to it, and the search for a working definition of what the terms actually means. It then focuses on a multi-dimensional approach to measuring creativity in order to grasp the many different aspects of it. Ways to measure the creative process using the highly popular divergent thinking tests, the creative product and subsequent assessment, and the creative personality both from a personality trait perspective, as well as, from a biographical inventory of creative behavior and accomplishments are all examined. Though all the methods are rather standard within the field, they are most often administered in isolation. Bringing them together into one study can broaden the concept of creativity and add understanding to how the different aspects relate to each other. The creative process appears to be one area that can be developed and expanded, especially by utilizing creative metaphors, as a further instrument for measuring how people combine and connect highly dissonant concepts in new and insightful ways.

Introduction

Research into creativity is very much an interdisciplinary endeavor spreading across such diverse fields as business (Amabile, Conti, Coon, Lazenby, & Herron, 1996) (Amabile, 1996) (Andriopoulos, 2001), linguistics and language education (Carter, 2004) (Albert, 2006) (Maybin, 2007), psychology (Eysenck, 1993), and naturally the fine arts (Mace & Ward, 2002) just to name a few. Creativity has also been widely studied from a cross-cultural perspective (Lubart, 1990) (Lubart, 1999) (Lubart, 2010) (Kaufman & Sternberg, 2006) (Morris & Leung, 2010), analyzed historically (Simonton, 1999), and examined to find what kind of relationship it has with intelligence and personality (Barron & Harrington, 1981) (Batey & Furnham, 2006).

In addition, creativity has a broad and all-inclusive lure, as something essential to the well being of society. As Toynbee (1964) states, giving "a fair chance to potential creativity is a matter of life and death for a society" (p. 4). Florida (2002) describes it as the most important

resource of the 21st century, and this importance is quite visible in the European Commission's declaring 2009 to be the "Year of Creativity and Innovation" (European Commission, 2008). This view is not restricted to the West, as the Singaporean government, too, has described creativity as a necessity for the advancement of the nation's economy, technology, and education (Tan, 2000).

The Many Sides of Creativity

Creativity, though, is bound by numerous stereotypes and misperceptions and often people believe that to be creative one needs to be "mad, weird, neurotic or at least unusual" (Isaken, 1987, p. 2). Many researchers label this the "mad-genius stereotype" (Kaufman, Bromley, & Cole, 2006) or the "lone nut" stereotype (Plucker, Beghetto, & Dow, 2004). Despite those who are trying to disentangle creativity from this lone genius myth (Montuori & Purser, 1995), these stereotypes still seem to be part of the common folk belief in society and popularized by the media, which often writes about linking madness and depression to genius and creativity (Adams, 2014). Most research that looks at the connection between madness and creativity (Andreasen, 1987) (Jamison, 1993), however tends to focus on eminent creators, those whom have made a significant impact in their field. On the other hand, everyday creativity has actually been shown to be an important part of the mental health of the individual for it involves important characteristics such as having a willingness to take risks, being open to new ideas, and being flexible (Cropley, 1990).

Another area with contradicting views towards creativity is its association with a certain naiveté popularized by Picasso's famous quote, "Every child is an artist. The problem is how to remain an artist once we grow up." Gardner (1993) also details the blend of childlike and adultlike characteristics in many of the leading creative minds of this past century noting how Einstein tried to preserve such childlike features as curiosity and defiance of convention. Following in Einstein's proclivity towards childlike features for enhancing creativity, it is believed that "When Richard Feynman faced a problem he was unusually good at going back to being like a child, ignoring what everyone else thinks and saying, 'Now, what have we got here?'" (Feynman, 1995). Yet at the same time creativity requires a certain amount of

cognitive complexity. This cognitive complexity enables one “to integrate conflicting, ambiguous or novel information” (Charlton & Bakan, 1988, p. 318), which is also essential to avoiding functional fixedness. Avoiding functional fixedness is the ability to see multiple responses to a question or alternative solutions to a problem and not being fixed in seeing only one single answer. So the concept of creativity seems to be terribly loaded with contradictions and myths, with science and popular media, viewing it either as a mental process that regresses to some primordial state or a highly evolved process that pushes the boundaries of complexity.

The actual word creativity is commonly used in such broad contexts from describing Picasso’s *Guernica* to a wordplay in a daily tabloid that the critic and historian, Jacques Barzun stated, “... in contemporary culture, no idea is so appealing, no word put to more frequent and varied use, than creativity.” He goes on to say that creativity “extends over all of art and science, naturally, and it takes us beyond these to the basic conditions of modern society, to education, to our view of the human mind and what we conceive to be the goal of life itself” (Barzun, 1989, p. 338). To better differentiate this wide-ranging use of the term creativity, researchers distinguish between the magnitude of creativity by calling the work of geniuses on one side of the cline, eminent creativity, and the other side, everyday creativity (Richards, 1990). Often these will be expressed as “Big-C” creativity and “little-c” creativity, respectively. Though helpful in distinguishing the wide contrast that the word creativity can exemplify, it does not clarify what creativity actually is.

Framing Creativity in a Definition

Defining creativity may seem straightforward on the surface, but in reality it has been one of the more difficult and tumultuous undertakings within the field of creativity research. A decade after Guilford (1950) advocated a call to arms for more researchers to look at the neglected subject of creativity, a place where many psychologists “have feared to tread” (p. 444), Rhodes (1961) stated that the “The profusion (of definitions) was enough to give one the impression that creativity is a province for pseudo-intellectuals” (p. 306). This outpouring of definitions for creativity, which some have estimated to number close to 60 that can be found in the psychological literature (Taylor, 1988 in Furnham, Batey, Anand, & Manfield, 2008), has left the term rather ill-defined and unformed. As Sternberg (1988) further states, “Few psychological constructs have proved more elusive to define” (p. 126). Such is the elusiveness of this term that one of the leading scientists of the time, David Bohm, along with the physicist David Peat (2010), reinforces its ambivalent nature by stating that “something relevant may be said about creativity, provided it is realized that whatever we say it is, there is also something more and something different” (p. 226).

Though slippery as this construct may appear, recently researchers have narrowed down this medley of definitions and have shown some accord in reaching an agreed upon description of this term. Stein (1953) provides one of the earlier working frameworks for a definition of it, as he states, “The creative work is a novel work that is accepted as tenable or useful or satisfying by a group in some point in time” (p. 311). Novelty without being useful is simply something bizarre and odd, while something useful without being novel is something common, everyday and conventional. These two concepts must come together for something to be considered creative. Later the word “appropriate” and “useful” replaced the words “tenable” and “satisfying.” Sternberg and Lubart (1995) describe novelty as being statistically unusual, original, unpredictable, with the power to surprise, which Bruner (1962) calls an “effective surprise” and states that it is a distinctive feature of creativity. This element of surprise has also been labeled the “nonobvious” (Simonton, 2011). Boden (2004) further elaborates on the meaning of surprise, which is either the state of seeing this creative product, such as an innovative idea, as fitting into a way of thinking that you already had, but failed to ever realize or, as seeing the idea as an impossibility and yet contrary to this impossibility someone has come up with it. Others have added one other key element to creativity and that is “adaptability,” which is the “ability to respond adaptively to the needs for new approaches and new products” (Barron, 1988, p. 80).

Recently, the definition has emphasized the interaction of domain specific knowledge, the overall creative process, and the importance the environment has on the individual (or group) in the creation of this “creative product.” There is also the influence of the social context in determining the novelty and usefulness of this creative product. The following definition is one of the more thorough and all encompassing definitions of creativity and will be used as the working definition of creativity in this paper.

“Creativity is the interaction among aptitude, process, and environment by which an individual or group produces a perceptible product that is both novel and useful as defined within a social context” (Plucker et al., 2004, p.90).

A Multifaceted Approach

Creative insight into a problem is often said to occur through an “Aha experience” or “eureka effect,” something that Poincaré wrote about happening to him while waiting for a bus or for Archimedes while sitting in a bathtub. A new creative idea or thought that has never occurred to one before will metaphorically be compared to some kind of illumination, as can be viewed in the numerous light bulb visual metaphors that are often associated with a creative idea. The thought that one

could actually measure such a thing as creativity has often been clouded with doubt and suspicion for how would one go about measuring the “disordering of all the senses” as stated by Arthur Rimbaud or the “impenetrable aspect of human existence” (Hausman, 1976, p. 3) and from these perceptions of creativity; it was often assumed to be something immeasurable (Khatena, 1982). The early attempts to measure it were often approached with some skepticism, and the complexity of undertaking such a task has been reviewed extensively and critiqued (Hocevar, 1981).

Despite the suspicion surrounding the measurement of creativity, research into this trait continues to grow and thrive in many different academic disciplines. A developing consensus among researchers views creativity as being made up of multiple components (Amabile, 1996) (Batey et al., 2006) and therefore a multi-faceted approach is the best method for trying to measure it. Rhodes (1961) described the four dimensions of creativity to be person, process, product, and press. This has been labeled the four P's of creativity. Using these various dimensions of creativity may provide the researcher a blueprint to better understand what it means to be creative. In the following sections, I will first look at the historically enduring measurement of Divergent Thinking tests, which aim to measure creative potential and part of the creative process; then look at the creative product and ways to measure such products; and finally the creative person.

Divergent Thinking Tests

Guilford (1968) emphasized the importance of divergent thinking where “the thinker must do much searching around, and often a number of answers will do or are wanted” (p. 8). The divergent thinking tasks he developed in his SOI (structure of intellect) Model (Guilford, 1967) looked to measure ideational fluency or the ability to come up with many different ideas to solve a problem, which is an important part of the creative process. Divergent thinking can be contrasted against the more standard IQ tests or convergent thinking tests, which require the test taker to provide one right answer to the question. Due to the pervasiveness of this latter style of test in the environmental setting, E. Paul Torrance (1970, p. 86) stated, “Children are so accustomed to the one correct or best answer that they may be reluctant to think of other possibilities.” Torrance (1966) (2008) developed these divergent thinking tasks into what he called The Torrance Test of Creative Thinking (TTCT), which became one of the most widely used tests to measure creativity (Baer, 1993) (Kim, 2006). Though even Torrance himself was cautious to conflate creativity directly with divergent thinking (Torrance, 1988, p. 46), it became the psychometric template for measuring creativity for many years and still up to the present day seems to be frequently used as the measurement of creativity. Recently, though Runco

(2008) reemphasized the point that creativity and divergent thinking are by no means identical terms, and divergent thinking should be seen as just one aspect of a more complex creative process (Runco & Okuda, 1988).

Divergent thinking tasks are usually figural or verbal. Common figural tasks ask the participants to complete an unfinished picture or draw as many pictures as possible from many pairs of circles or lines (for example: “o o” or “x x”) on the page. Common verbal tasks ask the participants to list alternative uses to a common everyday objects like a brick, describe possible causes to a situation in a picture, provide possible consequences to an unlikely situation (just suppose everyone in the world only spoke one language), or provide possible improvements to a product like a bicycle (see Kaufman, Plucker, & Baer, 2008 for an outline of such activities).

The figural tasks can be scored with such measurements as fluency (the number of pictures), originality (the statistical uniqueness of the picture), elaboration (the amount of detail provided in the picture), and the abstractedness of the title. Verbal tasks can be scored for fluency, originality, and elaboration (Kaufman, et al., 2008). The TTCT, however, recommends training for those who use that test for administrative and scoring purposes, yet many researchers will use their own form of divergent thinking tasks and some have tried to simplify the scoring scales by using a more subjective scoring method (Silvia, et al., 2008).

The model of the creative process, though, is not simply analyzing a problem and then coming up with many ideas, as represented in these divergent thinking tasks. Zeng, Proctor, and Salvendy (2011) show that it also involves evaluation, and thus these types of divergent thinking tests fail to assess the integrated general creative process. Another issue these authors raise concerning these types of tests to measure creativity is the construct validity of them, since divergent thinking tests neglect one important criterion in the working definition of creativity and that is “appropriateness” (Zeng et al., 2011). Though Kim (2006) provides a detailed review of the TTCT and concludes that if properly administered it has benefits for identifying gifted children, but also encourages everyday creativity, and, most importantly for this paper, she too recommends that any measure of creativity involve multiple measures. Divergent thinking tests may provide only a small window into a more complex creative process, but can also provide important information about ideational fluency, functional fixedness, and originality seeking, which all are important at some level to creativity. Zeng et al. (2011) bring up another key point concerning these divergent thinking tests and the merits of tailoring them to a specific domain, in their case a professional domain, but also in other educational areas like science or foreign language leaning.

Another popular way to look at creativity, which seems rather natural and directly addresses the criticism of the divergent thinking tests and their lack of construct validity, is to focus more on an actual creative product. The next section examines possible ways to get the participants to actually produce such a product and then suggests ways to measure the creativity of the product within a social context.

Creative Products and Consensual Assessment Technique

There are numerous tasks that one can use to measure a creative product such as writing a story about a picture (Wolfradt & Pretz, 2001), completing a photo essay (Dollinger & Clancy, 1993) (Dollinger, Urban, & James, 2004), designing an invention, making a collage (Baer, 1993), writing a scientific poem (SciFaiku) (Kaufman, Baer, Cole, & Sexton, 2008), and so on. Though creativity, as mentioned earlier, is the production of a “perceivable product” that is defined within some social context as being “novel” and “appropriate” or “useful.” The question one might further ask is who determines this social context and decides the novelty and appropriateness of this product? While divergent thinking tests attempt to be more objective in the scoring, the scoring of a creative product tends to be more subjective. The Consensual Assessment Technique, first developed by Amabile (1983) (1996), systematically set forth a way to assess such a creative product by using judges. These judges are to be people “who have at least some formal training and expertise in the target domain” (Amabile, 1996, p. 73). They are not provided any kind of scoring rubrics, but rather are to rely on their own subjective opinions of creativity to rate these products. These judges are supposed to mirror, on a small scale, the group of experts in the real world world who act as gatekeepers, deciding what is considered creative and what is not. Nonetheless, any researcher attempting to study creativity will naturally feel the constraint of finding this group of experts to act as judges for the research.

One will begin to question this rather ambiguous word, “expert.” What exactly constitutes an expert? According to Simonton (1997) this would involve over 10 years of purposeful practice in a certain domain. Finding these experts can be a major challenge for the researcher, so Dollinger and Shafran (2005) looked at the reliability of using novice judges and found that novices and experts scored fairly similar to each other. One thing to note about their study is that these novices received some training before they assessed the creative product, so technically it is a little different than using the Consensual Assessment Technique, which rejects the use of such training. Kaufman and Baer (2012) mention the possible use of quasi-experts, an individual that is neither expert nor novice. In one study using psychology

graduate students as judges, Kaufman, Lee, Baer, and Lee (2007) found consistency among their scores. So there seems to be a growing amount of data that supports the use of quasi-experts, those who have certain knowledge of the specific domain, but are not considered so-called “experts.” Additionally, this will alleviate some of the burden on the researcher in recruiting a group of judges for the study. The following section moves away from a tangible product and looks more closely at the individual or the creative personality and the importance of the trait labeled “openness to experience.”

The Creative Personality

A commonly used past measurement of the creative personality is the creativity personality scale (Cps) (Gough, 1979), which is a 30-item adjective checklist of personality traits. The respondent checks the items that he/she feels answers the following question, “What kind of person are you?” Eighteen items positively correspond to a creative personality and 12 items negatively correspond to it. Some of the positive items seem rather obvious such as intelligent, wide interests, inventive, original and unconventional while others seem rather dubious such as; informal, sexy, and snobbish. Similarly, a few of the negative traits are also a little puzzling such as; sincere, honest, and suspicious. Many of these positive creative traits, especially the less puzzling ones, are components of one of the broad Big Five personality traits identified as openness to experience (McCrae & Costa, 1985). Current research suggests five high-level traits: openness to experience (O), conscientiousness (C), extraversion (E), agreeableness (A) and neuroticism (N), (McCrae & Costa 1997) which have been found to be prevalent in over 50 different cultures (McCrae & Terracciano, 2005).

Costa and McCrae (1992) developed a 240-item NEO Personality Inventory, Revised (NEO-PI-R) that looks at each of the five personality traits and within each trait further specifies six facets. The six facets for the openness to experience trait are imagination, artistic interests, emotionality, adventurousness, intellect, and liberalism. Utilizing this Big 5 measurement (Costa & McCrae, 1992) to measure individual personality, the trait, openness to experience, is highly related to various measures of creativity such as divergent thinking tests (McCrae, 1987), a life course creativity study spanning 45 years (Soldz & Vaillant, 1999) a creative product based on a photo essay (Dollinger et al., 1993), as well as, a creative product based on the ratings of written stories and creative hobbies (Wolfradt et al., 2001). More recently a public-domain personality measure called the International Personality Item Pool (IPIP) (Goldberg, 1999) (Goldberg, et al., 2006) freely allows researchers to access a personality measure without the constraints of being bound to copyrighted material.

Another possible way to look at the creative person is to straightforwardly ask the participants to answer items that correspond to certain creative behaviors and past creative achievements. This sort of self-reflective questionnaire acts as a creative biography for the individual and provides additional insight into one's overall creativity.

The Self-rated Creative Person

Creative behaviors span quite a wide range of varying domains of experience and there has been much debate as to whether creativity is more specific to these differing domains or if creativity is a more general ability (Baer, 1998) (Plucker & Beghetto, 2004) like Spearman's "g" or the measure of general intelligence developed in 1904 by Spearman see (Spearman, 1904), which could then be called "c" (Kaufman & Baer, 2004). So, for example, if one person were creative in math, like Poincaré, would he also be creative in a completely different discipline like cooking or painting or is his creativity in math specific only to the domain of mathematics? Amabile (1996), in her componential theory of creativity, views it as both general and domain specific, which work together with a third component, task motivation, and it is this convergence that affects the overall creative performance on a specific task. Gardner (2003) divided up intelligence into multiple intelligences that extend from spatial intelligence to interpersonal intelligence. Could creativity likewise be divided up into multiple creativities? Similar perhaps to Greek mythology, where there were nine muses and each one represented a different form of divine and creative inspiration from epic poetry (Calliope) and tragedy (Melpomene) to astronomy (Urania). Obviously these would not hold in the modern context, but many researchers have attempted to put together a classification of differing domains where one can be creative, which I will go into more detail next, reviewing the development of these self-reported creative inventories.

Hocevar (1980) developed one of the earlier versions of an inventory of creative behavior, which he called the "Creative Behavior Inventory." This inventory is made up of 77 items of creative activities and accomplishments such as "Received an award for acting," "Gave a recital," and "Made jewelry" in which participants respond by using a 6 point scale from "never" to "more than 6 times." These activities and accomplishments range from acting, writing, fine arts, craftwork, science, math, cooking, dance, music, and humor. These differing creative domains, though, are not clearly distinguished, while the Creativity Achievement Questionnaire (CAQ) (Carson, Peterson, & Higgins, 2005), which is also a self-reported measure of creative achievement, clearly distinguishes between 10 differing domains of creativity. These differing domains then are further subsumed into two distinct dimensions. The first dimension, "Arts," has the domains of drama, writing, humor, music, visual arts,

and dance, while the other dimension, "Science," has the domains of invention, science, and culinary. The domain of architecture does not fall under either of the two dimensions. In this questionnaire each domain has eight items numbered from "0" to "7" and to score this questionnaire each item is weighed by the corresponding number (the number "0" denotes not having any recognizable talent in this domain). In the domain of "Music," for example, number 1 is "I play one or more musical instruments proficiently" while number 6 is "Recordings of my composition have been sold publicly." From looking at the range of the eight items in each domain, one could naturally assume that this type of measure is more designed for eminently creative people and not very applicable to everyday creativity for use with university students or more adolescent populations. In another study, Kaufman, Cole, and Baer (2009) developed the Creativity Domain Questionnaire (CDQ), consisting of 56 items, which initially was found to have seven factors. A shortened version of this questionnaire, reduced to 21 items revealed four factors namely; 1) Math/ Science (algebra, literature, computer science, biology, logic, mathematical); 2) Drama (acting, literature, blogging, singing, dancing, writing); 3) Interaction (leadership, money, playing with children, selling, problem solving, teaching); and 4) Arts (Craft, decorating, painting) (Kaufman, Waterstreet, Ailabouni, Whitcomb, Roe, & Riggs, 2009). The important point in these questionnaires is to try to capture the broad dimension of creativity in various possible domains rather than restricting it to the typical arts. Batey (2007), specifically investigating everyday creativity, developed his own compact version called "The Biographical Inventory of Creative Behaviors," made up of 34 items. The participants are simply asked to put an "X" in the corresponding box if they have been involved in such an activity in the past 12 months. Some examples of these activities are; "Drawn a cartoon," "Made someone a present," and "Delivered a speech." Most of these inventories rely on the thinking of Hocevar (1981) who stated "Past behavior is generally the best predictor of future behavior" (p. 459).

Another approach to these self-report inventories is not to reflect on past behavior and accomplishments, but to compare oneself to others of the same age on a 5 point scale from "1" "much less creative" to "5" "much more creative" in various creative behaviors. Kaufman (2012) recently designed the Kaufman Domains of Creativity Scale (K-DOCS), which covers a wide range of activities from interpersonal behavior such as , "Helping other people cope with a difficult situation," to computer science, "Figuring out how to fix a frozen or buggy computer," to more traditional domains of creativity like the arts, "Sketching a person or object." (See Silva, Wigert, Reiter-Palmon, & Kaufman, 2012 for a more detailed review of the various self-report scales and their reliability, validity, and structure). Deciding on what

measurement to use may be rather troubling to the researcher, for each assessment tool is more specific towards a certain creativity such as; everyday creativity (Batey, 2007) or eminent creativity (Carson et al., 2005), while others expand the domains from the typical arts, math, and sciences to more unconventional creative domains like social relationships and interaction with others (Kaufman et al., 2009). Another issue to consider is the sociocultural environment where these measurements were developed and administered, namely the USA and the UK. Further research is needed to look at their translatability into and applicability to other diverse cultural and linguistic settings.

Conclusion

Utilizing multiple approaches to assess creativity provides the researcher a more holistic representation of what creativity is and the possibility to analyze the relationships between the different components such as process, product, and person. Approaching creativity with a broad array of assessment tools can provide a more complete picture of how individuals differ in respect to creativity, how this trait relates to other variables like intelligence and school achievement, and possible ways to enhance creativity in the classroom or work environment.

Ways to more accurately measure the creative process is the dimension that appears to need the most refinement and development. Divergent thinking tests may have the longest history and perhaps are the most widely used tests, though at the same time they are probably the most misunderstood, in terms of what they are actually measuring (Runco, 2008). This makes it an opportune time to restructure and expand the measurement for

assessing creative thinking in order to incorporate a more comprehensive picture of the overall creative process. More research needs to look at ways to measure how individuals are able to form associative elements into new combinations, much like the early work of Mednick (1962) and his remote association tests (Mednick, 1968). In these tests participants are given three words (sore, shoulder, sweat) with seemingly no relationship and are asked to find a fourth word that somehow links them all together (answer: cold). These tests have gone out of fashion in the field of creativity, mostly because they constrain the respondent to come up with only one right answer, relying more on convergent thinking than ideational fluency. One area that could prove to be beneficial is the incorporation of metaphorical thinking and imagery activities into such an assessment, which has begun to be used by some researchers (Silvia & Beaty, 2012). Metaphor, like creativity, combines two seemingly disparate and unrelated concepts in new and innovative ways, providing insight and deeper understanding. Metaphorical imagery is highly prevalent in the field of advertising (Forceville, 2002) and creative marketing and could possibly be incorporated into creative thinking tasks. Such tasks could ask the respondents to provide interpretations to metaphorical ads or to provide their own metaphors for a product. Then, these metaphors could be consensually assessed for both novelty and aptness. As Albert Einstein mentioned “combinatory play seems to be the essential feature in productive thought” (West, 1997, p. 26) and tapping into this combinatory play may provide greater insight for the researcher into this complex and often thorny human ability called creativity.

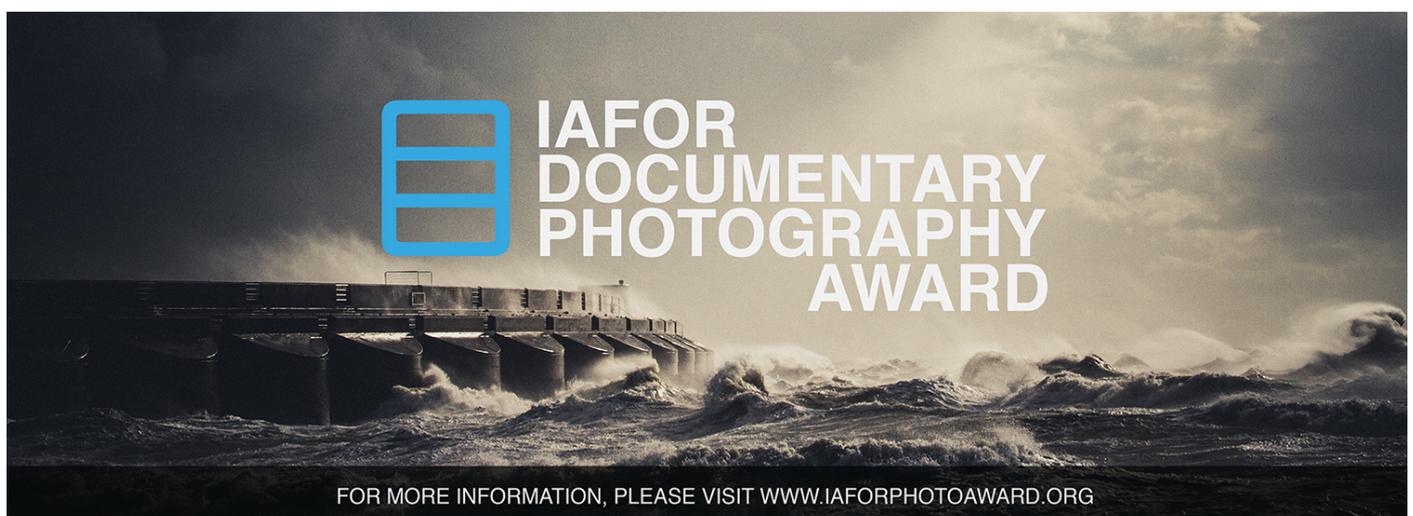
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Meta-analysis of Intelligence Scores of 'Street Children' in Developing Countries

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In many developing countries, unsupervised children spend much of their time in the urban environment and in the context of extreme poverty. These 'street children' are generally not attending school, psychological traumas are common and rates of substance abuse are high. The multiple deprivations suffered and the exposure to factors mitigating normal neurocognitive development would suggest that attainment of optimal intellectual function would be hindered. This would have implications for interventions aimed at bringing these children back into mainstream society, which generally favour reintegration into educational programs. Despite this, there is scant published material on intelligence testing of samples of street children. A systematic review and meta-analysis of the existing academic literature was conducted in English and Spanish. Only five studies of street children that included data on intelligence tests or proxy measures of intellectual functioning could be identified. These reports, from Colombia, Bolivia, Indonesia, Ethiopia and South Africa, described 201 different children. Mean scores from the street children were compared with control sample means or population norm estimates, in the latter case adjustments were made for cross-cultural comparisons and for the Flynn effect. The adjusted means were used to calculate effect sizes (Cohen's d). In all five samples, performance was below that which would be expected from the normal population, though there was much variation. The sample from Indonesia showed the smallest effect size ($d=.25$) and the sample from Ethiopia showed the largest effect size ($d=2.87$). The mean weighted effect size was 0.99. Although limited by the dearth of research on the topic, the current results suggest that the multiple deprivations suffered by street children in developing countries tend to impair normal neurocognitive development, but that the extent of this varies by culture.

The concept of 'street child' refers to those young people who spend much of their time unsupervised in the urban environment in a context of extreme poverty. A formal definition has been developed by UNICEF: *"any girl or boy who has not reached adulthood, for whom the street (in the broadest sense of the word, including unoccupied dwellings, wasteland, etc.) has become her or his habitual abode and/or sources of livelihood, and who is inadequately protected, supervised or directed by responsible adults"* (Black 1993).

In addition to UNICEF, various other charities and NGOs worldwide exist to help the street children of developing countries. These frequently publish estimates of the size of the problem, generally quoting figures of 100 million or 150 million children globally. However, the true extent of children living in the urban centres of developing countries is largely unknown. No reliable systematic surveys are available and the estimates of tens or hundreds of millions are essentially guesses (Thomas de Benitez 2011).

The reasons that children are spending much of the time in the urban environment are complex. Some may be homeless, but others, perhaps the majority, will have families to whom they return at night. Some will be begging or engaged in criminal activity and many will be child labourers, e.g. earning money by entertaining motorists or selling small items in cafes and bars. Poverty and an imperative to obtain money is a critical feature of their presence in the cities of developing countries. Street children are often demonised by the more privileged classes, by the media and security forces. In Brazil, street children are commonplace in the large cities and receive very little protection from the police. Furthermore, they may be victim to violence or assassination from local vigilante groups and even rouge police units (Inciardi & Surratt, 1998). Exposure to violence and trauma is thought to be a very common feature of the lives of street children worldwide (Thomas de Benitez 2007).

There is further health related research with street children that has often focused on substance abuse, particularly 'glue sniffing'. Indeed this form of substance abuse appears to be a common feature globally of homeless and street connected youths (e.g. Vega & Gutierrez 1998). Other research topics have been food access and undernourishment (e.g. Patriasih et al. 2010) and blood levels of lead and other toxins caused by urban pollution (e.g. Samaniego & Benítez-Leite 2002). Furthermore, there is a reasonable body of academic studies of street children stemming from sociological and anthropological work (e.g. Aptekar 1991). Academics working with and investigating the NGO sector have focused on rehabilitation efforts to move children from reliance on street living and to reengage them with educational services (e.g. Lusk 1989). Despite all these efforts, cognitive function and development of street

children has been a generally neglected topic. This is something of an omission because many of the features described above (e.g. trauma, substance abuse, pollution or malnutrition) have the potential to impair cognitive functions and prevent normal neurocognitive development. In turn, this could hinder attempts at reintegrating children back into educational systems.

In contrast, there is considerably more known about the effects of homelessness on cognitive function in developed industrialised countries. Reports from the USA (e.g. Solliday-McRoy et al. 2004) and England (e.g. Pluck et al. 2012) have demonstrated that, based on population norms, IQ scores are lower than would be expected in samples of homeless adults. Indeed, such homeless samples appear to score about one standard deviation below the population norms provided by the test manufacturers. The evidence suggests that this reduction in cognitive ability is acquired and is associated with many of those features known to be overrepresented in homeless populations in developed countries. For example, high rates of childhood traumatic experiences, psychiatric illness and alcohol and drug abuse are associated with cognitive impairment in homeless adults (Pluck et al. 2011).

Similarly, in developed countries, reductions in expected IQ scores are observed in samples of homeless children and children in homeless families. For example, a study of black homeless families in the USA reported that as a group, the children scored at the 34th percentile on an IQ test (Masten et al. 1997), equating to an IQ of about 86. On the test used the population mean was set at 100 with a standard deviation of 15. So it can be seen that the children scored in the same pattern as homeless adults, about one standard deviation below the population mean.

We have recently performed a systematic review of cognitive functions of street children in developing countries and reported that a wide range of cognitive and neuropsychological impairments have been described, albeit from a small corpus of research involving only seven studies reporting on 215 individuals (Pluck 2013). Furthermore, the studies used a wide range of methods, limiting cross-cultural comparisons. Nevertheless, there was a pattern of cognitive developmental problems and in some samples neuropsychological impairments and evidence of acquired brain damage. Only four studies included data on general intellectual function (e.g. IQ). Comparison of these scores seemed to suggest significant global variation. Nevertheless, the conclusion was that there is a relatively consistent pattern of poor performance on tests of intellectual function by samples of street children.

Since that systematic review was performed, a fifth publication has become available. This describes a neuropsychological study of street children in La Paz and

El Alto, Bolivia (Dahlman et al. 2012). This includes data on a measure of IQ and also includes data on a comparison group of poor but not homeless children. In order to help interpret this new data, we have extracted the important information so that it can be compared with the data reported in the previously described systematic review. In addition, it is possible to calculate effect sizes for the five different studies, so that despite the different data collection methods used in each, direct comparisons of the results can be made. Furthermore, the subsequent effect sizes from the five different studies can be used to produce a weighted average to describe the overall estimated effect size. In essence, to provide a single statistic that conveys the results from all the available data.

However, to do this there are some methodological issues that must be considered. It is known that globally there has been a steady increase in IQ test performance. Indeed the 'Flynn effect', as it is known, describes how IQ scores have increased by about 3 points each decade (Neisser 1997). In effect, IQ tests will tend to overestimate as they become older. Therefore, comparisons of effect sizes of IQ scores, such as attempted in this meta-analysis, must account for the Flynn effect.

In addition, there is also significant global variation in IQ test score performance. Population means are different in different countries. However, as we wished to focus on developing countries, this presents a problem. In many such countries standardised and normed IQ assessments have not been available and researchers have frequently resorted to using tests from the large developed countries (generally the USA). However, what is normal in the USA is not necessarily normal in other countries. Although controversial, estimations for average IQ scores for most countries have been published (Lynn & Vanhanen 2002). These can be used to correct for geographical variation, when for example a USA normed test has been used outside the USA. Although these IQ estimates are controversial and imprecise, to correct with them will probably increase the accuracy of estimates of gaps between observed IQ score performance and what would be expected in the normal (local) population.

To summarize, we report on a systematic review and meta-analysis of scores of intellectual function of street children in developing countries.

Methods

The systematic literature review that recovered the studies from Colombia, South Africa, Ethiopia and Indonesia has been reported previously (Pluck 2013). The search was performed in July 2012. The search was performed in both English and Spanish using the large global search engines for academic material (e.g. Web of Knowledge, Google Scholar). The definition used for

'street children' was: "Street children are recognised to be young people who experience a combination of multiple deprivations and 'street-connectedness'" (Thomas de Benitez 2011 p viii). Studies were included if the children fulfilled this definition and were aged between 5 and 16. The search revealed 7 studies reporting on 215 individual street children. However, data on intellectual function (e.g. IQ) was only reported in four different samples. These were on samples of street children in Indonesia (Hartini et al. 2001), South Africa (Jansen et al. 1990,

1992), Ethiopia (Minaye 2003) and Colombia (Aptekar 1988).

In December 2012, the search was repeated and this located a fifth article that had recently been published. It reported on a sample of 36 homeless street children (all boys) from Bolivia and provides comparison data on 31 domiciled but socioeconomically similar boys (Dahlman 2012). A summary of all the available studies with data amenable for meta-analysis is provided in Table 1.

Table 1: Studies included in the meta-analysis of intellectual function test scores of street children

City and Country	Sample	Mean age	Comparison group	Test of intellectual function	Reference
Cali, Colombia	56 street children	11.6 (range = 7-16)	Normative data	Kohs Block Design	Aptekar, 1988
El Alto and La Paz, Bolivia	36 boys with experience of living in the street	14.1 (SD = 1.8)	31 domiciled boys of similar SES	Leiter Performance Scale	Dahlman et al (2012)
Ngagel and Banyu Urip, Indonesia	42 street children	11.5 (range = 10-12)	Normative data	Cattell Culture Fair Test-ii	Hartini et al, 2001
Johannes-burg, South Africa	44 street children (half were glue sniffers)	14.1 (SD = 1.46)	22 domiciled children	Category Test of the Halstead-Reitan Battery	Jansen et al, 1990, 1992
Addis Ababa, Ethiopia	23 child beggars	5.6	30 children from a local kindergarten	Custom made tests	Minaye, 2003

The IQ and other measures of intellectual function were corrected for the Flynn effect and for regional differences in the use of norms as necessary. In effect this involved adding 0.3 IQ points to the normative mean for each year that had passed between the publication of the research and the publication of the IQ test. Where normative IQ scores had been used from the USA and formed comparisons of data from other countries, the population norm for the local country was adjusted by reference to the expected difference in IQ scores between that country and the USA based on the tables provided by Lynn and Vanhanen (2002).

Results

For the data from Bolivia, South Africa and Ethiopia, comparison data was provided on control groups. Therefore the calculation of interest was the score difference between the street children sample and the control sample. For the other reports, control data was not provided, and it its place normative population estimates have been used, in each case adjusted for the Flynn effect and geographical variation. In each case, effect sizes were calculated with Cohen's d (Cohen

1992). A summary of the study-by-study effect sizes are shown in Figure 1. Although such effect sizes are not usually represented with polarity, we have maintained the plus/minus information in order to represent the direction of the difference between the street children sample and the respective comparison data. A negative value indicates that the street children performed worse than the comparison group. In addition we have used the qualitative categories also provided by Cohen (1992) to describe effect sizes, these are 'negligible' from 0 to .2, 'small' from .2 to .5, 'medium' from .5 to .8 and 'large' if larger than .8.

In Figure 1 we can see that in all cases the effect sizes were negative, indicating that the street children samples achieved lower scores than their respective comparison samples. However, there is considerable variation by study location, the Indonesian report had only a small effect size ($d=-.25$) while the Ethiopian report had a large effect size ($d=-2.87$). When the data describing all 201 cases reported in the five studies is combined, the estimated weighted effect size is $d=-.099$.

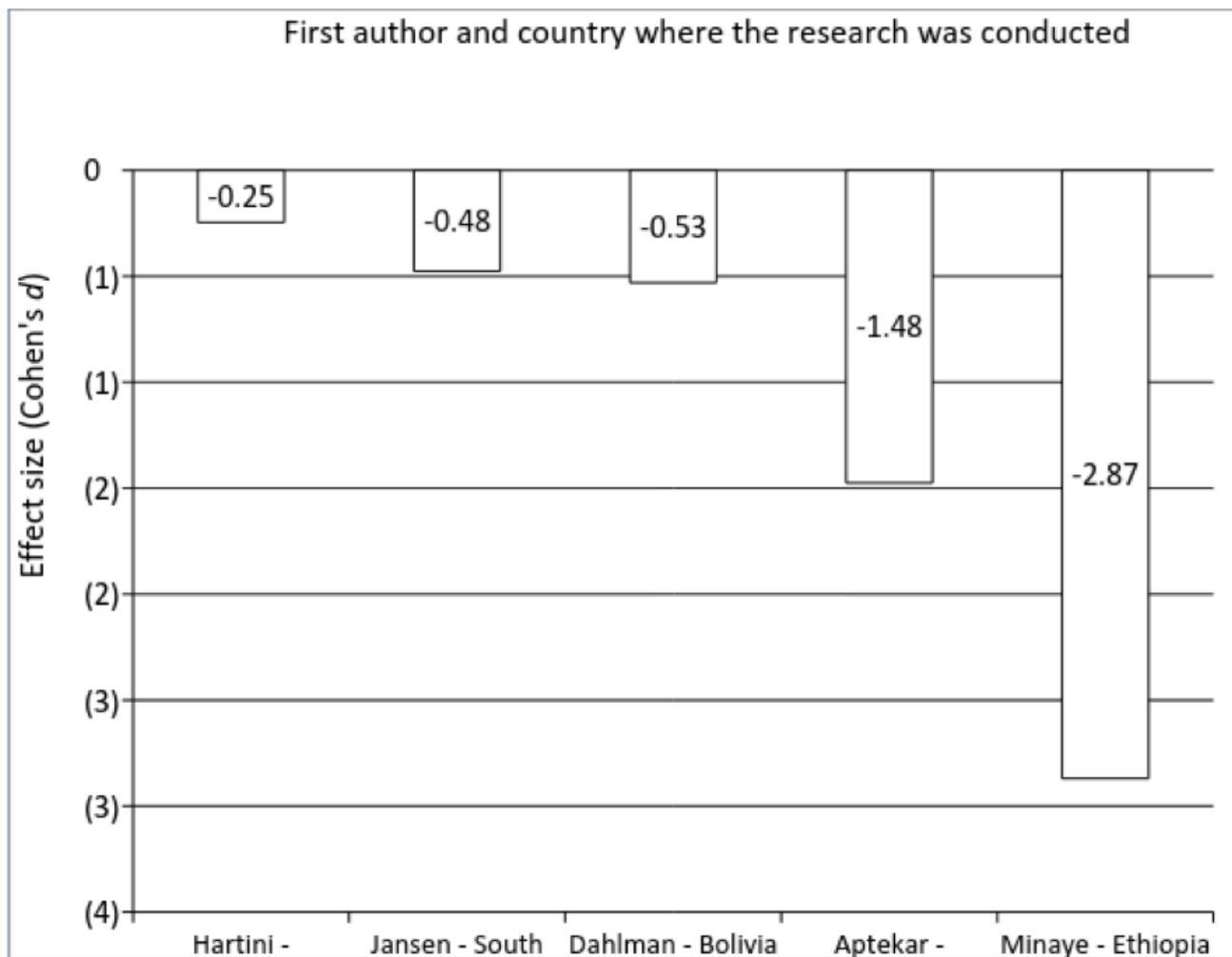


Figure 1: Effect sizes for tests of intellectual function scores by the street child samples from the five countries when compared with a control or normative sample

Discussion

We have reported on a systematic review of cognitive function of street children in developing countries and performed a meta-analysis on all of the available data relevant to general intellectual function. Only five studies reported in six publications and involving only 201 individual children were identified. Poorer performance by the street children samples compared to the comparison data was observed in all five of these studies; however, there was considerable variation. For example the effect size reported in the Indonesian study was only $d = -.25$, by convention this would be considered a small effect size, as would the effect size in the South African sample ($d = -.48$). The effect size in the Bolivian study would be considered of medium size ($d = -.053$) and the others, both the Colombian ($d = -1.48$) and Ethiopian ($d = -2.87$) would be considered large effect sizes.

When the data from all five studies was combined, the estimated average weighted effect size was $d = -0.99$. This indicates that, on average, the street children performed almost exactly one standard deviation below what might be expected of children in their culture (in the analysis we used, the effect size is equivalent to the number of standard deviations of difference). However, it must be

noted that as this is a meta-analysis, it is dependent on the volume of previous reports. As described, only five studies were available, reporting on only 201 children. Although we noted in the introduction that the extent of the problem of children spending much of their time unsupervised in urban environments is unknown, it is clear that 201 children studied is a tiny figure in relation to magnitude of the issue globally.

In addition, this analysis is dependent on the quality of the existing reports. These were generally quite small studies, and some used barely adequate methods to measure intellectual functioning. For example the study in Ethiopia used custom made tests of knowledge and vocabulary (Minaye 2003). This is partly understandable, as normed and validated tests are often not available in developing countries. Nevertheless, the use of non-standard assessments or inappropriate assessments weakens the interpretation of this meta-analysis.

Despite this, some conclusions can be reached. There was an obvious pattern to the study-by-study effect results. In each case the effect sizes indicated that the street children studied performed worse than their comparison groups. There was significant geographical

variation, this should perhaps not be surprising, as the local contexts in which the children live in each culture will vary tremendously. The average effect size was very close to one.

A mean effect size that approximates one is of interest as the same phenomenon has been observed in homeless populations in developed countries. For example Pluck et al. (2012) have shown that homeless adults in the UK scored below population means by effect sizes of 1.0 for IQ and 0.99 for memory performance. Similar effects of homeless adults scoring one effect size below the population mean have been demonstrated in the USA (e.g. Solliday-McRoy et al. 2004). Furthermore, the same phenomenon has been observed in homeless children in the USA (Masten et al. 1997). It would appear therefore, that there is a general phenomenon of distributions of intellectual function test scores displaying a pattern in which those of particularly low socioeconomic status in a society score on average one standard deviation below the estimated average for the population as a whole.

This analysis cannot directly inform on the reasons for the one standard deviation effect. To some extent this may reflect a natural tendency in capitalist and meritocratic societies in which high IQ allows people to protect themselves from poverty, leaving those less able to occupy the lower socioeconomic strata. However, there are also other factors which can be identified which likely drive poor cognitive development of street children.

Substance abuse is an important issue. It has been reported to exist at very high levels among many groups of street children. Glue sniffing in particular seems to be linked to the socioeconomic deprivation and urban living of street children (e.g. Dominguez et al. 2000; Gutierrez & Vega 2003). This is perhaps due to its low cost and accessibility. Unfortunately, glue sniffing is a particularly toxic and harmful practice that can cause permanent

brain damage. Indeed, one of the studies included in this analysis, from South Africa, also reported that of those street children who were glue sniffers, most had neurological signs suggestive of brain damage (Jansen et al. 1990).

Another cause of differences in cognitive function between street children and more privileged children in the general population is access to formal education. As most street children are not attending school, it could be argued that this will delay their learning and general cognitive development. Although in many developing countries, school attendance is not necessarily the norm for most children anyway. Furthermore, in many cultures where there are street children, the children are in fact child labourers, working in the urban environment, for example selling flowers or candies to motorists. It could be argued that their real world experience compensates for their lack of formal education in driving their cognitive development. In fact, there is some evidence for this. In Brazil, some of the street children who work as vendors have mathematical abilities comparable to those of regularly schooled children. Furthermore, for some forms of calculation, the street children are significantly better than school attending children (Saxe 1988).

In conclusion, the results of this meta-analysis suggest that there is a large degree of cultural variation in the cognitive development of street children in developing countries. However overall, the results suggest that street children tend to score about one standard deviation below what would be expected of children in general in their culture. It is unclear to what extent this reflects a natural phenomenon of capitalist societies, acquired neurocognitive impairment or delayed cognitive development. Regardless of this, the magnitude of the effect on intellectual functioning suggests that it will likely hinder attempts at bringing street children into mainstream education.

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Can Personality Type be predicted by Social Media Network Structures?

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Abstract

Social media platforms have become an integral part of how we live our lives, in particular for those generations who have grown up in the digital world and use these platforms to connect and communicate with many different groups. Personality profiling now underpins many facets of our lives for example digital marketing campaigns target specific audience groups using information gleaned from how a person engages with social media (Seung, 2012). Specific personal information that could assist with precise targeting might be helpful to those who want to interact with people via digital media. Psychological Type suggests we are predisposed to certain behaviors and preferences (Jung, 1921). Traditional methods of assessing personality include observation or psychometric questionnaires. Both methods have their benefits and drawbacks but what are the alternatives? Can the digital world and in particular, social media platforms, provide an alternative method? If a person's digital personality footprint could be assessed by the way they engage in social media activity this information could be used to precisely target informative communications as well as product marketing campaigns (Maehle & Shneur, 2010).

This paper presents a summary of initial work undertaken to explore the nature of structural patterns represented by an individual's Psychological Type, as defined by their MBTI type and specific aspects of their social network data, as defined within the context of their Facebook connections and usage. Initial findings suggest that the virtual world is able to reflect personality differences that exist in the external world. Ongoing research is being undertaken to build on these initial findings.

Introduction

The world is shrinking. The concepts of Globalization and 'Six Degrees of Separation' mean that relationships between organizations and people are becoming more interconnected. It is now possible through the lens of social media to search for and connect to a person anywhere in the world without any prior physical or social contact. The current, popular social media platforms of Facebook, LinkedIn and Twitter encourage

such networking. This means that people now develop relationships and connections with people for no reason, other than to widen their personal and business on-line contacts. Cyber-networking has replaced the need for face-to-face networking when searching for a job; when conducting research and appears to provide more efficient ways to engage in debates that extend existing knowledge and discourse.

Income generation from on-line advertising and sponsorship is now big business. In fact, digital marketing has become a discipline in its own right. Traditional marketing and advertising campaigns are now being substituted by social media campaigns to expand their reach towards targeted audiences (Seung, 2012). If marketers and those interested in disseminating information to specific groups of people could tap into reliable information about a person they could direct their campaigns more precisely (Maehle, Shneur; 2010). Currently marketers rely on information in the digital world that an individual makes known or is willing to reveal in the public domain, for example what products and services they use, like and share within and across their personal social media networks.

If organizations could know more about the personal characteristics of the people that they were aiming to target, the more focused their campaigns could be. However, such information is very personal to an individual and is unlikely to appear openly in the public domain. If information that characterizes personality could be translated into a format that appeared in a de-sensitized and anonymous configuration, it might prove advantageous to a range of end-users. The intention of this research is to find alternative ways of representing such personal information whilst maintaining confidentiality and integrity.

Understanding and Assessing Personality

There are different models that help to explain and understand the concept of personality. Two contrasting approaches are the trait and preference approach. The trait approach suggests that individuals possess characteristics which are inherent, immutable, 'hard-wired' and stable over time, whereas the preference

approach suggests that people are predisposed to certain behaviors and characteristics that have been developed and are also consistent over time and usage. However, to some extent a person can modify their behavior, if motivated to do so, in certain situations and contexts. The Big Five Personality Model is based on the trait approach and is said to provide a framework of personality that subsumes all personality behaviors. Many psychometric questionnaires used to assess personality are based on the Big Five Model. In addition, there are questionnaires that are based on the preference approach; the Myers Briggs Type Indicator (MBTI) developed by mother and daughter (Briggs Myers et al, 1998) is one such measure that is widely used in a variety of settings such as education, counseling, career development and conflict resolution. MBTI is based on the work of Carl Jung (1921) whose seminal work on Psychological Type has provided a legacy to researchers interested in expanding the body of knowledge on personality differences. According to Jung, an individual's personality or Psychological Type is based upon the development and use of four mental functions, two of which relate to how we perceive information, sensing and intuition and two

which relate to how we make decisions, thinking and feeling and our attitude to the outer world expressed through the preference of extroversion or introversion. Jung's conceptual model suggests a person's Psychological Type is predisposed to different behaviors and preferences according to the development of each mental function and attitude.

Whilst the trait and preference approach differ conceptually, a research study by McCrae and Costa (1989) shows a relationship between the Big Five Factor model and the MBTI scales. The study showed that the four MBTI scales measure aspects of four of the five major dimensions of normal personality and that the five-factor model provides an alternative basis for interpreting MBTI findings within a broader, more commonly shared conceptual framework.

The descriptions of the MBTI scales given below are taken from the Introduction to Type handbook (Briggs Myers, 1998). Interpretation of the Big Five personality traits and correlations to MBTI preferences are shown below:

Table 1. Correlations between Big Five personality traits and MBTI preferences

Big Five Trait	MBTI Dimension	MBTI scales
Openness to Experience (Positive correlation to Intuition)	Preferred way of taking in information	Sensing: Take information in that is real and tangible using the five senses. Trusts experience. Intuition: Take information in by seeing the big picture. Trusts inspiration.
Agreeableness (Positive correlation to Feeling)	Preferred way of making decisions	Thinking: Look for logical consequences in a situation. Feeling: Look to create harmony in a situation
Extroversion (Inverse correlation to Introversion)	Preferred focus of attention / energy	Extroversion: focus on the outer world. Introversion: focus on the inner world.
Conscientiousness (Inverse correlation to Perceiving)	Preferred way of dealing with the external world	Judging: Methodical and ordered approach to life. Perceiving: Spontaneity and casual approach to life.

The trait neuroticism which is referred to as emotional instability is not correlated with any of the MBTI scales.

Whichever approach to personality is considered, the notion of assessing, discussing and identifying aspects of an individual's personality, with or without their consent, in the public domain could be considered to be intrusive and unethical. If it were possible, therefore, to find an alternative way of assessing personality in a less intrusive way, it could open up an array of applications in many aspects of life. Personality is typically assessed by observation or completion of psychometric questionnaires. Both these

methods could potentially cause the person being observed or tested to consciously or unconsciously alter their behavior to suit a given purpose or desired outcome. However, when a person is engaging in normal social media interactions, it is unlikely that they are consciously trying to alter their personality and so their social media interaction patterns may provide a reflection of their true self. However, research indicates that for some people they use the virtual world of on-line interaction as a way

of hiding their true self (Amichai-Hamburger, Wainapel & Fox; 2002).

Technology and Personality

With the current technological revolution of social media and its pervasiveness into daily life, an interesting question that is raised is whether social media could provide a reflection of personality between that which exists in the real world with that which exists in the virtual world. Could social media activity output provide an alternative way to assess personality? A groundbreaking research study into such a question has been conducted by a collaboration between Cambridge University and Microsoft Research (Bachrach, Graepel,

Kohli, Kosinski & Stillwell; 2012). This team conducted a study that examined personality and patterns of Facebook usage. Their findings have been significant in relation to assessing personality and correlations of social network use. Their results show that there are significant relationships between each of the Big Five personality traits and usage of Facebook features. Their methodology was based on frequency measures, for example, how many friends does a person have in their network; how many times has a person been tagged in photos; how many status updates has a person made and other similar measures? The study's findings show a prediction of personality traits given a user's Facebook profile and usage. These findings are summarized below:

Table 2. Prediction accuracy on personality traits and Facebook usage

Prediction Accuracy	Big Five Factor	MBTI Scale	Correlation
Best	Extroversion	Introversion	Inverse relationship
Best	Neuroticism	NA	NA
Middle	Openness	Intuition	Positive relationship
Middle	Conscientiousness	Perceiving	Inverse relationship
Lowest	Agreeableness	Feeling	Positive relationship

Research Question

According to Jung (1921) Introverts are private and contained individuals, whereas extroverts are social and expressive. Introverts like to focus on depth whereas extroverts tend to focus on breadth. In the actual world, extroverts and introverts behave in different ways. We wondered how these behavioral differences would be manifested in the digital world and what would these differences look like structurally? According to Bachrach et al, extroverts can be identified from their Facebook social media activity. Our area of interest focuses on what the network structure for an extrovert and conversely an introvert would look like? Using network theory and analysis, we speculate what the type of connections within and between introverts' and extroverts' network groups would look like structurally. More specifically we wondered whether a person's personality footprint is the same in the actual world as it is in the digital world; and how those differences might be represented? Could these digital structural patterns provide an alternative way of identifying different personality types?

Our thinking and speculation about these factors led the research team to propose and test the following hypotheses.

Hypotheses

- Extroverts will have more connections within their social media network than introverts.*
- The density of an extrovert's network will be more intense than that of an introvert's*

Our study intends to build on the work of Bachrach et al but with two specific differences.

The first difference is that this current study will examine the structure of an individual's social media network in order to identify specific network patterns that might be associated with different personality preferences.

The second difference is that the researchers have chosen to use the MBTI (Myers-Briggs Type Indicator) instrument as the tool for identifying the specific personality preferences. This is because existing MBTI data is available for the targeted sample population and it might allow for a greater differentiation in personality in that the combination of preferences result in 16 different Types. It is not the authors' intention to argue for or against the applicability of the instrument, as evidence and studies exist to support its strength. The body of literature on the validity and reliability of the MBTI contains many studies that have been carried out using the MBTI to predict or determine success in specific settings such as educative courses (Bispong, Patron; 2008) or as a way of helping to identify specific competencies for particular jobs, such as R & D Managers (Dreyfus, 2007).

The focus of this research project will examine the best prediction findings from the Bachrach et al's study and therefore concentrate on the MBTI Introversion / Extroversion scale. The research proposition of this study is predicated on the Cambridge Team's findings that an extroverted type's personality can be predicted

from their social media usage. This current study is looking to establish what specific structural patterns exist within an extroverted type's social media network and by definition for an introverted type too.

Methodology

This study takes a quantitative approach to data gathering and data analysis. We asked for volunteers from the current cohort of MBA students who are studying at the Asian Institute of Management to participate in this study as they had already undertaken the MBTI and would, therefore, know their MBTI Type. We used the participants' MBTI data as well as data that were extracted from their personal Facebook social media networks. Mathematica 9 software was used to analyze the Facebook data files.

Sample Population

Our sample population was drawn from the current MBA student community within our teaching institution (AIM) for the following reasons. First, on entry to the MBA program each student completes the MBTI for learning and development purposes and so an MBTI database already exists. Second, with average age of 26, the age range of these MBA students suggests that they are more likely to be social media savvy and to have a developed and active Facebook account.

The total number of students who participated was 49. As we were only interested in the Introversion / Extroversion scales, we show below the division in numbers between these two scales:

Table 3. Sample Data

Sample Size	Introverts Total number	Extroverts Total number
Total n = 49		
Sample n = 44	23	21

The reason for the discrepancy between the total number of participants and actual sample size used in the study was due to a few participants that were undecided about their best fit type in respect of the extroversion / introversion scales or that their network data were incomplete so we therefore had to eliminate them from the study.

Ethical Considerations

The researchers were sensitive to the issues of confidentiality and anonymity. They approached the task of gathering data from the students' Facebook accounts in a way that would minimize concerns about how these personal datasets would be used and help to avoid situations where students felt they were not in control of producing and sending the requested data to the researchers. This was accomplished by setting aside some time at the start of one of the students' classes and walking them through the process step-by-step so that they could sign up to participate and produce the required data all at the same time. This meant that all questions, concerns and issues could be dealt with at a single point in time and everyone would receive the same instructions thus avoiding misinterpretation and misunderstandings.

The researchers assured the participants of confidentiality and that their data would be only used for research purposes. If participants wanted to maintain complete

anonymity they were advised to set up and use an anonymous email account to send the dataset which would mean that there would be no traceable connection between a particular dataset and an individual. Participants were assured that participation or non-participation in this project would in no way affect any of their grades or student assessments. Participation in the study was purely voluntary. The researchers also sought participants' permission to gain access to their MBTI data and only to use it in the context of the study. Participants were advised that they would be sent a copy of the journal article resulting from the study if they were interested in the final results.

Data Analysis

Each of the 49 AIM MBA students who volunteered to participate in the research was asked to follow a procedure so that their Facebook friends network could be extracted using an app called Netvizz (Reider, 2010). They then sent the output file containing their network to the research team for processing along with their MBTI personality type indicator. However, only 44 were selected as their MBTI type was either indeterminate or their network data were incomplete.

Their friends' network data were processed using Mathematica 9 (Wolfram, 2013) software. A visualization of a Facebook friends network is shown in Figure 2.

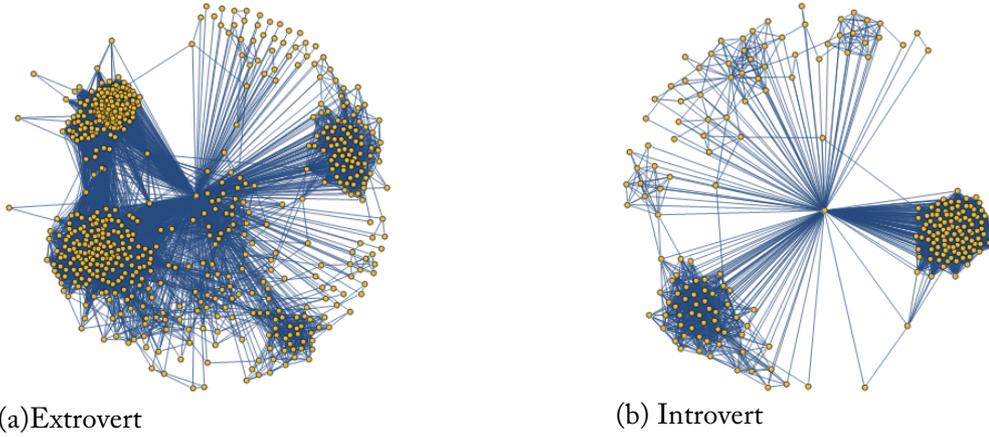


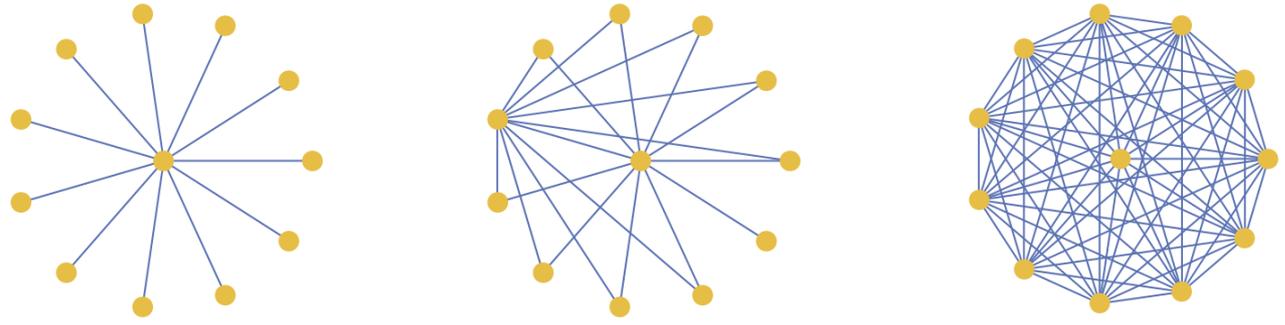
Figure 1. Sample friends network of an extrovert and introvert

The dots shown in the figure are the nodes of the network. The lines connecting the nodes are the edges. The node at the center is the person whose personality type we want to infer given the network structure.

Metrics to describe the structure of their network were computed. These metrics included number of friends (nodes) one is connected to and the number of connections the friends would have to each other (edges). We also measured the average degree (Jackson, 2008) which is the ratio between the total number of

connections (edges) compared to the total number of friends (nodes).

We also computed the graph density (Jackson, 2008) to describe how the structure departs from a complete graph. A complete graph has a graph density of 1 which means all the nodes are connected to all the other nodes as depicted in Figure 3:



Friends are not connected to each other (Graph density = 2/nodes)

Some of the friends are connected to each other (Graph density = 2 edges/nodes*(nodes-1))

All the friends are connected to each other (Graph density =1)

Figure 2. Graph density of the friends network

After looking at the individual connections, we considered how the nodes in the network are grouped. Instead of relying on Facebook's Groups (Facebook Groups, 2013) facility which depends on formal membership even though they are already connected, we look only at how dense the connections are among the nodes. We then use modularity (Newman, 2006) to algorithmically identify the communities formed by the nodes. By communities we mean grouping of nodes where the connections are more dense internally but sparser between nodes from a different community. For instance those, belonging to the same community would

have high modularity and less if from different communities. Lastly, we also count the number of connected components to check the largest network a node is connected to (Freeman, 2004).

Findings

First, we acknowledge that the sample population is small and not representative of the general population but we wanted to run the project as a pilot study and a precursor to a follow-up study. Since beginning this project, we have been given access to the data that the Cambridge study has generated and thanks to their

generosity we now have additional data resources to hand. We acknowledge that our findings are neither representative nor statistically significant, but the findings alert us to potential points of interest for our follow-up study. We, therefore, present our findings for discussion purposes.

We first considered the Extroverted and Introverted groups. From the different analyses mentioned above, we focused on 3 measures for these groups.

1. The number of nodes for extroverts is slightly bigger compared to introverts. The extroverts in our sample

have on average 660 friends while the introverts have 585 friends. Superimposed on the graph is the standard error to give us an idea of the precision of the data.

2. The number of edges for extroverts is slightly bigger compared to introverts. The personal network of an extrovert has about a thousand more connections than an introvert (17457 vs. 16680).

3. The value of the graph density for the extroverted group is slightly lower than the introverted group.

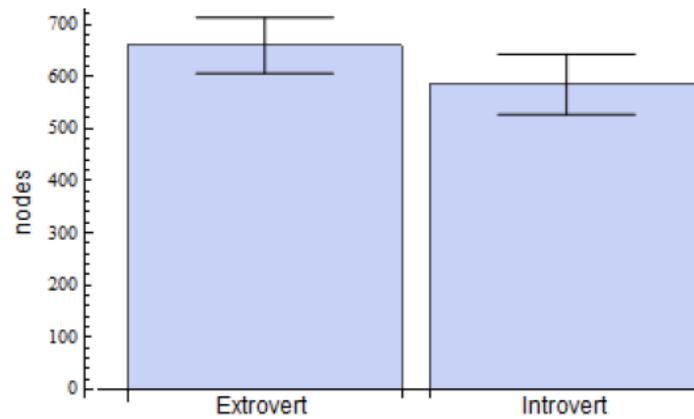


Figure 4. Number of Nodes for extroverted and introverted types

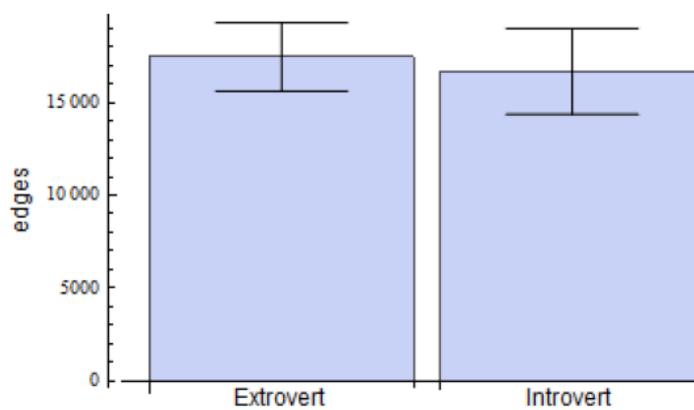


Figure 5. Number of edges for extroverted and introverted types

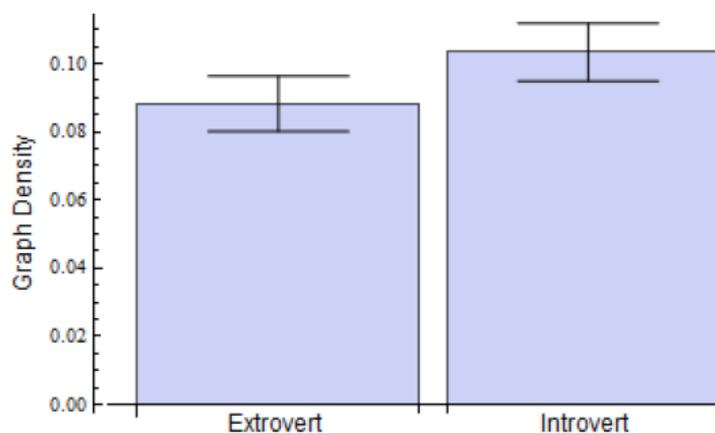


Figure 3. Graph density of extroverted and introverted types

Discussion

We first look at the comparisons between the introverts and extroverts groupings.

1. The comparison of nodes which represents the number of friends a person has, in our study, suggests that extroverts have more friends than introverts or put another way, introverts have less friends than extroverts. The explanation for this could be as extroverts need to have social interaction with people and events in the external world they may find it easier to connect to people on Facebook than introverts. They may be replacing the external world with the cyberworld and may be substituting cyber connections for real connections. This finding is in line with that of the Cambridge study (Bachrach, et al; 2012) that found people who have a high degree of extroversion had more friends than those who had a lower degree of extroversion.
2. When comparing the number of edges, which represents the number of connections between friends, for the extroverts groups to the introverts group, the number was slightly bigger for extroverts. This could be explained by the fact that extroverts have more friends to begin with.
3. But even though extroverts have more friends to begin with, when comparing the graph density, introverts have more concentrated connections between friends than extroverts suggesting a tighter-knit grouping of people. A speculative explanation for this might be that extroverts might act like ‘Social Butterflies’, they are happy to have ‘open-ended’ connections and lots of them whereas introverts are selective about their connections and

will only let people into their network after careful consideration and selection. Following the notion that extroverts go for breadth and introverts like depth, it could be that each group applies this concept to their virtual relationships as well.

After further analyses, we noticed something interesting, although the numbers are very small, we felt it was worth highlighting and adding into the discussion. We added the additional scale of Perceiving to the Extrovert and Introvert groups and produced two new groups; Extroverted Perceiving types, EPs and Introverted Perceiving types, IPs. The comparison of nodes and edges between EPs and IPs produced the same trend as the pure extrovert and introvert groups but these differences were magnified. In addition, we found something interesting when analyzing the number of communities and connected components.

When we looked at the number of communities for the Extroverts and Introverts we expected the trend of Extroverts having more than Introverts to continue and it did, even though the difference was small. Similarly, we saw the same trend for extroverts to have more than introverts when we compared the number of connected components, (Figure 7, below)

However, when comparing the number of communities and the number of connected components for EPs and IPs (See Figure 7, below) we found this trend was reversed in that IPs had a bigger number of communities than EPs and IPs had a bigger number of connected components than EPs. It seems that this ‘introverted’ group (IP) is exhibiting more extroverted type behavior. The limited sample size and high standard deviation among IPs show a higher standard error.

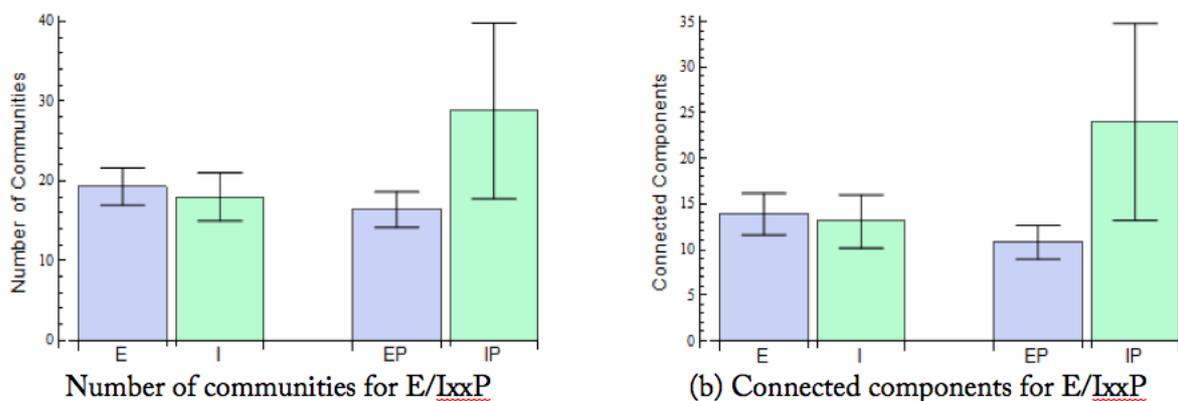


Figure 4. Comparison for E/I and E/IxxP

In MBTI terms, EPs are known as ‘Adaptable Extroverts’ and IPs are known as ‘Adaptable Introverts’.

A possible explanation for this unusual anomaly might be that by adding the additional dimension of Perceiving to

both extroversion and introversion adds the characteristics of spontaneity; flexibility and openness. To some extent, these characteristics are already present in an extrovert and so could be either cancelled or leveled-out in the EP group, therefore, having no additional effect; whereas for introverts these characteristics are absorbed and treated as an additional component of their type. This combination of introversion and perceiving may cause introverted types to express more extroverted behavior. It is as though the IP group is emulating the extroverted 'Social Butterfly' effect.

Hypotheses

At the start, the project set out to test two hypotheses:

1. *Extroverts will have more connections within their social media network than introverts.*
2. *The density of an extrovert's network will be more intense than that of an introvert's*

Our initial findings suggest that the first hypothesis is supported although we cannot claim any statistical significance due to the small sample size. Our data tentatively shows that the second hypothesis is in fact reversed; the density of an introvert's network seems to be more intense than that of an extrovert's. It is our intention to follow up and further examine these tentative findings by increasing our existing sample population so that all MBTI types are represented. We will also consider how the Cambridge Team's database could provide an additional resource that may help to further investigate these initial findings.

Conclusions

This pilot study has helped to set the direction for further research. It appears that extroverts are more likely to engage differently than introverts with social media platforms, such as Facebook and therefore, each group appears to produce a different network structure. What has also been interesting and is worthy of further investigation is that when adding another dimension to the extrovert / introvert dimension, a different network structure is produced yet again. This adds credibility to the idea that it could be possible that each of the 16 MBTI types could produce different and possibly discrete network structures. So instead of treating personality groups as single entities, such as, extroverts or introverts, the MBTI already allows the categorization of personality into 16 different types. As we have seen by adding in another dimension to a single entity, a richer picture of a network structure is produced, as

demonstrated by the additional Perceiving dimension to extroverts and introverts. If each of the MBTI personality types can be found to have typical, individualized network structures, it would suggest that each MBTI type could be identified through their own typical network structure. These datasets could offer an alternative way of assessing personality in line with the digital age in which we live. In addition, this information would allow further segmentation of groupings by personality type and could open up a range of applications that would enable each type to be specifically targeted for marketing and communication purposes.

Limitations

We acknowledge the limited sample size used in this study. This was in part due to the voluntary nature and response rate of participation. Whilst the researchers used an efficient way to gather the data, the drawback was that once participants left the classroom environment it proved difficult for the researchers to maintain the levels of enthusiasm and motivation to participate that was initially evident. We also accept that the sample population was drawn from our institution's student community which is not representative of the general population. It would be our intention when conducting further research to expand the size and diversity of the sample population.

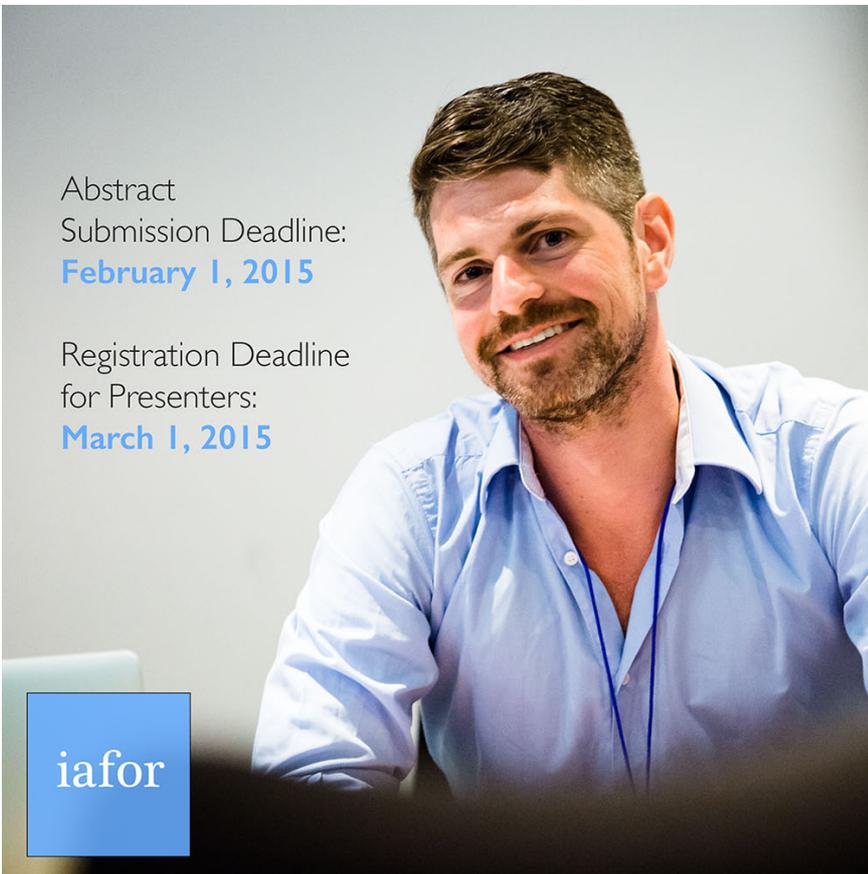
Another limitation to the study is the MBTI questionnaire itself and the opportunity to find participants who have both completed the questionnaire and have an active Facebook account. There are also resource limitations for completing the MBTI, both in terms of cost and time.

Further Research

At the start of this project, it was intended to run this project as a pilot study to see whether our methodology was able to replicate some of the results of the Cambridge Team's study but using the MBTI framework instead of the five-factor model and particularly to examine what differences might exist between extroverts and introverts in terms of their network structures. Whilst our tentative findings do show that differences in network structures exist for these one-dimensional groupings, our findings and thinking have been further stimulated by the idea that adding in additional dimensions to personality, which the MBTI allows, more marked differences might be found. This line of investigation will be the subject of a follow-up study.

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Abstract
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Applying Culture Bound Theory to Acute Social Withdrawal (Hikikomori)

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Abstract

This paper seeks to identify factors that implicate culture bound theory both in the socio demographic orientation of *hikikomori* and in the physical manifestation of 'opting out' by 'shutting in' and includes a brief comparison of those factors from a control culture with the related social expectation withdrawal of *runaway*. It uses as a baseline for analysis, Japan's position in 3 of the culture value indices defined by Hofstede, (G.Hofstede: 1980) namely the dimensions of:

- individualism; IDV,
- power distance; PDI,
- uncertainty avoidance; UAI,

and seeks to analyse how, in conjunction with educational norms, peer behavioural patterns and employment expectations within a society, cultural values can determine how social withdrawal and 'opting out' will present. *Hikikomori* is not a social situation that is disappearing in Japan, even though it is no longer the hot topic of the previous decade. As interest wanes and media inevitably moves its attention on to the next cult like phenomenon among young people who behave differently, the growing *hikikomori* population of over one million () should not be forgotten. Educators are in a prime position to facilitate change and question teaching styles that may play a critical role in responsibility for such a huge, national, cultural specific, social epidemic that is not vanishing like its members, but is instead rampant and growing.

Introduction

Culture-bound is a term that indicates the native countries culture is trigger for a certain social behaviour or trend. By naming a trend culture-bound, it is easier to trace cause and therefore perhaps to find solutions or appropriate ways to respond or not. However, this paper does not seek to offer solutions to the issue of *hikikomori* or to propose counsel although it does contain opinion. It looks at possible contributing background societal factors and at a juxtapositional social withdrawal phenomenon classified often as 'runaway' in an attempt to identify specific enantiomers that lay claim to the theory herein that *hikikomori* is both Japanese specific and culture bound.

Secher in Watts (2002) explains "When you get large numbers of individuals behaving in similar ways, it is generally a cultural expression of some kind".

Hikikomori is now a well known term. The translation alternatives (apathy syndrome, shut-ins, voluntary seclusion or acute social withdrawal) never caught on for a reason; the Japanese word *hikikomori* is the term that settled and is most widely used around the world for the phenomenon and this indicates implicitly that it is considered to be either Japanese specific or at least found mainly in Japan.

It is interesting to note the leading specialist on *hikikomori* psychologist Dr.Tamaki Saito coined the buzzword originally as *shakaiteki hikikomori* in 1998 (Saito:1998) acknowledging the intrinsic social (社会) or cultural roots.

Originally considered an extension of truancy (不登候) it was first treated as a medical ailment with copious quantities of drugs (Zielenziger:2006) but is now widely accepted as a pattern of behaviour of young people who have jumped off the train of expected educational and social norms, as happens in many countries but have confined themselves inside their rooms as an escape from that pressure.

The IDV component

Individualism

To isolate oneself is a natural escape strategy reaction for a collectivist low IDV society member. In high collectivist cultures like Japan, **context =identity**. A person will feel safe and comfortable belonging to a group. Indeed, without answers from a stranger to establish context with questions like; 'What is your name?' 'How old are you?' and 'Where are you from?' it is difficult to establish a baseline connection with another person. Even on television interviewing random strangers in the street, Japanese television will give a person's age and job details, where in an individualistic culture this would be considered rude, an invasion of privacy or in some cases a human rights issue.

This can be seen in statistics of how trusting people in both culture types are of complete strangers. In a

collectivist culture a stranger is not part of a group and so difficult to place or *identify*. They are met with unease because there is no context. This unease is incidentally often misinterpreted as shyness by those from collectivist cultures who interpret how this unease would be identified in their own self oriented culture. Ignoring outsiders or non-members is acceptable because the group must maintain its loyalty above all else and strangers will be met with unease.

In an individualist society, a person relates to a stranger as a 'self', valuing their individual and independent status. A whole group however may conversely be met with distrust.

In an individualist culture like America, Australia and the UK, a person feels most comfortable when they are able to make an individual expression of self because **self-identity**. There will be hints and comments pertaining to the self which may appear self centered but are culturally ingrained communicative habits in individualistic societies where people choose what to share and are taught that to be assertive with self-needs and opinions is a highly desirable quality.

Zielenziger (ibid) reports on an experiment with photography where a group of Japanese students (low IDV culture) and a group of American students (high IDV culture) were told to photograph a friend. The Japanese students all photographed their friend in an environment of some kind with the background taking more than 60% of the photograph frame. The American students all took closer up shots of their friend, the person took up most of the 'canvas' and the background was blurred or inconsequential. This could denote the importance of **people in context** (typical in Japanese culture) contrasting the importance of **people as self** (typical in American culture).

Ignoring outsiders or non-members is acceptable in a collectivist culture because the group must maintain its loyalty to each other first and foremost like a mother cat guards her kittens. A complete stranger represents a person that cannot immediately be placed in context or group. The Daily Yomiuri (June 13th: 2004) conducted a survey on trust in strangers and 47% of Americans responded saying other people can be trusted despite the far higher crime rate, where only 26% of Japanese responded that they would trust a complete stranger. The implication for *hikikomori* here is that once the person removes themselves from the group for an extended period they will be shut out and ignored because they no longer belong. Likewise, if an individual within the group behaves in a way contrary to group unwritten rules but accepted behavioural patterns for that group, they will be ignored and shut out to the point where they may voluntarily leave the group. This passive aggressive style of bullying is more common in group-oriented cultures

and differs from the more violent and verbally abusive style bullying in self-oriented cultures.

A glimpse at historically rooted traditional collectivist culture

In traditional village society in the Tokugawa period, the government divided each village into 5 units of mutual surveillance to create smaller groups within the village in order to promote mutual dependency and loyalty (人国). The community was divided into these groups and if one person within the group disobeyed rules or rebelled the whole group would be punished or chastised. In this way, it was taught through the generations that responsibility was for one's own group (only), and that the individual has little power but as a group things can be achieved well.

By relying on this style of group dependency an individual's ability to think critically *without* consulting others, and the opportunities and incentive to create change (which happens when one person thinks or does differently; others see, discuss, adopt and accommodate) and the practice of doing so have diminished.

Closed networks known as shigarami within society bind the groups strongly together so that those at the top, treated with utmost respect born from recognition of the huge responsibility they have over the group's well being, must forfeit as much as their lives if one member of their group steps out of line and shames the network. This close knit structure can be compared with Amish societies 'Ordnung' where rules down to exactly what members can wear, and other some religious cult groups in other countries too, but in Japan (and other highly collectivist group cultures too) this sense of responsibility to the group is so intense that any party not within the network or connected to a group cannot possibly get anywhere in life; where in contrast the option to leave the cult or group is a viable one and often first choice escape route in more individual-oriented countries with higher IDV scores.

While there is nothing new in this theory, the role that this imbedded cultural way is intrinsically implicated in the main isolation feature of social withdrawal/*hikikomori* is clear. Only by completely withdrawing from *all* groups can the individual salvage their desire to be different or to behave differently from *any* group.

By withdrawing from the group they are in turn ignored and outcast and can never again enter a new group in fear of the social stigma trailing and attached to having left one. The final irony however, is that the world itself then clumps these individuals into a group and gives them the name '*hikikomori*'.

PDI component (Power Distance Indice)

Dependence versus Independence

The fact that hikikomori choose to retreat to their own rooms is a curious one from a Western high power distance country perspective. A young person's room is where we are punished and forced to remain when we have done wrong. It is a punishment 'to be grounded'. Yet, if we look at this choice with Hofstede's cultural dimension of power indice in mind regarding a high PD culture with no similar traditional confining punishment in childhood, it is easily comprehensible.

PDI rating is a country's score for how it values dependency. This is connected closely to the other two components of collectivist and uncertainty avoidance but the focus is on hierarchy of a society and how extensive equality is in terms of power. In a low power distance country people will respect independence and demand it. In a high power distance culture (like Japan) people at the top will have great power and positions and rank will be controlled carefully with leaders consistently treated with great respect and obedience. In low power distance cultures there will be more rebellion for equality and change from those who feel powerless and less resistance to that rebellion from those who have the power.

In both cultures, parents teach differing values to their children. In Japan, traditionally although times are changing, parents have taught children to obey the teacher and all rules. An important mantra is not to cause problems for other people and to fall in line to save face for the family. In America and lower PD cultures, children are taught to question the teacher, to question everything and to answer back with an opinion when they disagree, to be a 'hero' by protecting a stranger and to 'think outside the box'. These are basic differences in the way parents bring up their children and as such, reflect how a society shapes its power distance.

So, it is not surprising that opting out for Japanese young people should be to stay at home. Here, their own room is a private sanctuary away from the peer group and world outside that imposes restrictions on them. Here, they can be semi safe from criticism from superiors' or society's judgement, in a womb like existence with Mother nearby. The core value of power distance is rejected but the symbiotic relationship with Mother is very strong and offers a tiny thread of that instinctive culture born expectancy that is hard to shake- that of dependency.

In low power distant countries, we have the opposite culture reactive phenomenon in young people; that of 'runaway'. It is directly related to power distance because it chooses to run from all dependents and strives for complete independence even if that means homelessness.

As James Lehman, a Canadian behavioural therapist for teens and young adults writes; "*kids run away from problems they cannot handle. It's in our culture. Adolescents often see running away as a way to achieve a sense of power and independence.*" (Lehman: 2009).

While both social phenomena are rooted in rebellion or reaction against authority, *hikikomori* is unique because it chooses to place the family as a safer haven than the peer group. This in turn, suggests that bullying and school pressure play a **larger** part in retreat than in the counterpart phenomena of *runaway*, where perhaps young people are fleeing the pressure from family pressure.

Finally, let us take a look at the uncertainty avoidance indice and how it relates to *hikikomori*.

UAI component

Rituals of performance

Japan's high value of employment stability and lifetime employment is a mental programming statistic, not necessarily found within individuals but a composite factor within the construct described and researched by Hofstede (Hofstede, 1983: 118-119) under the name of 'Uncertainty Avoidance'.

The longitudinal (25 years) research that supports culture bound hypothesis in connection with employment avoidance and social withdrawal is documented in approx. 118 articles published in the 'Journal of International Business Studies,' between 1983 to 2008 (Au, K.Y, 1999; 799-812).

UAI is a cultural dimension of toleration concerning uncertainty about the future. At the high end of the scale are cultures in which people feel comfortable with rituals and routines that reduce uncertainty in daily life and in the workplace. Low-end UAI cultures are those in which people are happier with fewer routines and rituals and are open to much wider individual variation. In countries where UAI is high, and **Japan ranks 92nd out of 100** countries surveyed (Hofstede, 1980) people will demonstrate extreme loyalty to the company or their employer and feel extreme social obligation to participate in group activity.

A high UAI score relates to *hikikomori* because 100% of *hikikomori* young adults have opted out of both work and group social activity. They are therefore reacting in a culturally adverse mode, mitigating the relevance of the claim 'culture bound'.

The pressure on young people within the typical *hikikomori* age range of 14 to 30 -to find work *and to stay in that work* - or to find a club activity *and stay in that*

activity and to co-operate correctly within a rigid peer group hierarchical system (侯輩・先輩) within Japanese society are factors that go towards creating pressure to isolate. As unemployment rates rise and the social stigma attached to any kind of so named *drop out* continues to prevail, this has created in natural turn a world of *internet cafe hermits, parasites, neats and hikikomori*.

Summary

In the diagrams 1 and 2 below, we can see how the 3 paradigms discussed in this paper centralize themselves in real terms. The polar cultural diversions expressed in the manifestation of opting out in the central circle.

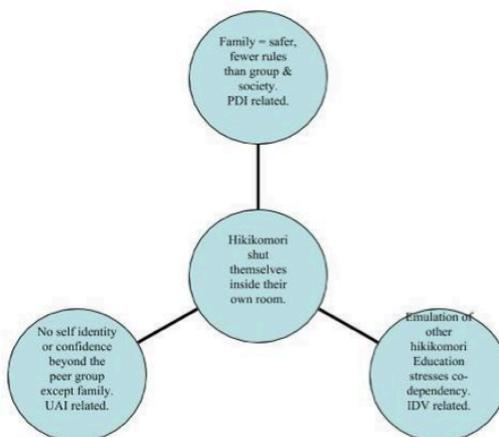


Diagram 1. Japan: Retreat is inside.

Sugai: 2013

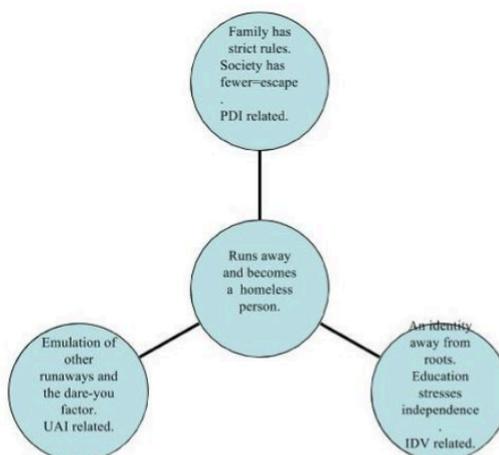


Diagram 2. Retreat is outside: America, U.K, Australia, and New Zealand

Sugai: 2013

While both social phenomena are rooted in rebellion or reaction against authority, *hikikomori* is unique because it chooses to place the family as a safer haven than the peer group. This in turn, suggests that bullying and school or work pressure play a **larger** part in retreat than in the counterpart phenomena of *runaway*, where perhaps young people are fleeing the pressure from family pressure. Parents in Western cultures usually encourage their children to leave home by 18 where in Japan “parents are happy to allow their children to remain at home and live from their parents’ income until their thirties” (Suwa et al. 2003).

Conclusion

In America and England, New Zealand, Australia and other individualistic cultures the trend for opting out sees ‘runaways’ leaving the home and seeking an alternative place to be. In this paper I have tried to analyze why Japanese *hikikomori* choose to confine themselves in their rooms within the context of 3 cultural indices as defined by the world famous cultural expert Geert Hofstede. I have tried to confirm my theory that the exact way ‘opting out’ of society manifests itself in Japan is clearly culture reactive. It is beyond the scope of this paper to develop further the enormous implications that this theory has on education and where change could be sought, but it is the foundation for further research into such considerations.

Influence of Emotional Induction and Free Or Forced Affiliation on In-Group And Out-Group Trust Attitude

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Abstract

This paper intends to revisit the studies on social affiliation understood as a determinant of in-group favouritism and out-group discrimination (Tajfel, 1982) arriving at the estimate of effect represented by a *priming* emotional stimulus on implicit attitudes of trust toward in-group and to the out-group. 574 college students participated in the study. They were all administered two scales taken from the *MPP-Multidimensional Personality Profile* (Caprara, et al., 2006) to assess empathy, pro-sociality, sociability, interpersonal trust, self-esteem, social desirability, cynicism, management of self image. The participants were divided into three experimental groups and randomly submitted to one out of six experimental conditions. Results: the type of social affiliation, voluntary or forced, influences the trust towards in-group and out-group members; a negative emotional stimulus is capable of reinforcing the polarized distributions of leadership (totally internal or totally external); eliciting subjective preferences neutralizes the effects of forced affiliation; forced affiliation, when activated, influences the distribution of leadership in favour of the in-group.

Introduction

In a study conducted by Tajfel et al. in 1971 it was found that the mere affiliation of subjects into groups based on an arbitrary task was enough to cause discrimination in favour of their own group and against the members of the other group (out-group). When commenting the results of the research, Tajfel claimed that the mere affiliation of subjects into groups activated a social norm of discrimination, i.e, a norm specifying that "you must act in favour of your in-group". An alternative interpretation is given in terms of the theory of similarity of beliefs (Rokeach, Smith & Evans, 1960), which states that it is the difference between presumed similarities in beliefs among the members of the in-group and the out-group rather than the social norm of favouritism towards the in-group that mediates the discriminatory behaviour observed by Tajfel. Billig and Tajfel (1973), did, however, consider the possibility that the subjects had assumed that the members of their in-group held the

same beliefs. In their study the subjects were told that affiliation was either linked to their preferences in art or was random. Discrimination occurred in both cases but was greater when the subjects were affiliated according to their preferences. Tajfel's study was partially replicated by Allen and Wilder (1973), who found that the subjects attributed greater similarity in belief to members of their in-group rather than to members of the out-group. The mere affiliation into groups based on an arbitrary task had encouraged the attribution of a greater similarity of beliefs to the in-group rather than to the out-group. Going on to analyse the trust aspect, literature has underlined that the essentially social nature of trust makes it an evaluation of the influence that the interaction between trustor, target and context has on one's own results and not an evaluation of individual factors that contribute to this influence (Rotter, 1980). McAllister (1995) distinguishes two types of trust: one based on cognition (which manifests itself usually in task orientated formal situations) and one based on affection (which manifests itself in personal and informal situations). An interesting definition, that includes both the possibility of calculating the results of the effects of the situation and the emotional-propensity aspect of trusting others, has been put forward by Denise Rousseau et al. (1998), who point out that trust is a psychological state that includes the intention to accept one's own vulnerability based on positive expectations towards the intentions or the behaviour of others. Interpersonal trust derives from a belief in the reliability of the partner/s and from the importance they give to the interests of the group. In this case trust is different from other relational variables such as cohesion, attraction of the group towards certain members, friendship, pre-existing relationships between members, familiarity, specific knowledge concerning others (Goodman and Leyden 1991). Considering these distinctions, we can hypothesize that the variables operate on group performance through different mechanisms and that each one has a different predictive value. For example, believing in the reliability of a partner could influence group performance in a way that is different from the desire to remain part of the group. From a practical point

of view, different interventions will be needed to stimulate or influence these variables. For example, forcing people to work together for a long time and creating familiarity in this way will not necessarily produce friendship, pleasure, trust or cohesion (Golembiewski and McConkie, 1988).

Objectives of the study

This contribution intends to revisit studies on social affiliation seen as a determinant in favouritism towards in-groups and discrimination towards out-groups (Diehl, 1988; Tajfel, 1978; Billig and Tajfel, 1973; Allen and Wilder, 1975), evaluating mainly the aspects linked to trust and reliability ratings. It also intends to consider the effects of positive/negative emotional induction and the influence of personality traits on the processes of attribution and social affiliation.

Tools

The Multidimensional Personality Profile (MPP) (Caprara et al., 2006) was used to analyze personality traits, and more specifically the social-emotional scale (which includes the sub-dimensions of empathy, pro-sociality, sociability and interpersonal trust) and the self-presentation scale (which includes the sub-dimensions of self-esteem, social desirability, Machiavellianism / cynicism and self-image management). A translated version of the textual sceneries for sadness and happiness used in the protocol of Mayer, Allen, Beauregard (1995) was used for positive and negative emotional induction. For the evaluation of the elicited emotional state we used the Self-Assessment Manikin scale (Bradley & Lang, 1980). For Test 1 we used a chart containing the following text: "Now imagine you are about to leave for a high altitude climbing expedition. You can choose the members of your team from the two groups, namely the Sweet group and the Savoury group. Make up your line of climbers choosing three climbers from each group and putting the number of your chosen climbers in the little mans in the centre of the chart under the respective roles. The roles are ordered in degree of importance". In the centre of the chart there was a square containing the descriptions of the various roles with their relative prerogatives: (line leader: the most important person and the expert who leads the group; equipment manager: the person who is responsible for the equipment and food; the person who sets up base camp: he is the person responsible for setting up camp; the tent carrier: he is the person who transports the tents; food carrier: the person who transports the food; support worker: a marginal role of support for anyone needing it). At the sides of the central square there were two oval shapes that enclosed respectively stylized little men representing the Savoury Climbers and the Sweet Climbers, with a picture representing the food for the different categories (spaghetti for the Savoury group and cake for the Sweet group). The position of the two groups (on the right or

left of the central square) varied in accordance with the balancing function. Every little man was randomly assigned a number from 1 to 26.

For Test 2 we used a second chart on which was written: "Very good. Your line has reached the top first establishing a new climbing record" for the condition of success and "Unfortunately your expedition has failed and you have lost a lot of your men" for the condition of failure. For both conditions the subjects were asked: "Now we would like you to indicate which of your team members were the most reliable during the expedition. Write a number from 1 to 5 inside each little man according to the following criteria: 1 for total unreliability; 2 for minimum reliability; 3 for an average reliability; 4 for high reliability; 5 for maximum reliability". In the centre of the chart there were 2 oval shapes, one for the Sweet group and one for the Savoury group each containing the respective graphic element (spaghetti and cake), the textual reference of the corresponding group (Sweet and Savoury) and three little mans inside which the subject had to insert the value of his reliability rating. The following charts were distributed for affiliation: chart A, which said: "Please indicate your food preferences choosing between Sweet and Savoury dishes. Write only your first name under your chosen preference (all the information will be statistically elaborated in complete anonymity)". In the centre of the sheet there were two oval shapes containing the graphic element (cake and spaghetti) and a textual reference of the group (the Sweet group and the Savoury group). Chart B carried the following text: "Even though you have expressed your preference you have been arbitrarily included in the group of people with the opposite preference to your own. So you must write your name in the circle belonging to the group you have been assigned to inverting the preference you previously indicated". In the centre of the sheet there were two oval shapes containing the graphic element (cake and spaghetti) and the textual reference to the group (Sweet and Savoury). Chart C read: "For this test you must be part of the Sweet group (C1) Savoury group (C2). So please write your name in the circle representing the group that has been assigned to you". Chart C was divided into Chart C1 per forced affiliation to the Sweet group and Chart C2 for the forced affiliation to the Savoury group. In the centre of the sheet there was only one oval with the cake and the words 'The Sweet' for Chart C1 and spaghetti and the words 'The Savoury' for Chart C2. Chart D read: "Could you please indicate your culinary preferences, choosing between sweet and savoury dishes. Write your name under the chosen preference". In the centre of the sheet there were two oval shapes containing the graphic element (cake and spaghetti) and the textual reference to the group (sweet and savoury).

Methodology

In the first phase of the research all the 574 students performed an evaluation, using the MPP instrument, of their personality traits related to the areas of social-emotional intelligence (empathy, pro-sociality, sociability and interpersonal trust) and of self-presentation (self-esteem, social desirability, Machiavellianism / cynicism and self-image management). Next, students were randomly assigned to one of the three experimental groups (Group 1: free affiliation; group 2: affiliation after being forced to express a preference; group 3: forced affiliation prior to the manifestation of preference) and one of the six experimental conditions (1: positive emotional induction and mission success; 2: positive emotional induction and mission failure; 3: negative emotional induction and mission success; 4: negative emotional induction and mission failure; 5: no emotional induction and mission success; 6: no emotional induction and mission failure). The experimenter gave instructions for compilation at the moment of handing out the material to each individual. The student was then invited, where required by the assigned experimental conditions, to read and empathize with the situations textually described and aimed at emotional induction, and to then express a rating of their emotional state (Self-Assessment Manikin) elicited by the stimuli presented therein.

Subsequently, those assigned to Group 1 were asked to choose their food preference (sweet / savoury), writing their name inside the circle containing the graphic element relevant to the chosen food category (cake for sweet and spaghetti for savoury)(Chart A). Those assigned to group 2, however, after expressing their food preference (chart A), were forced to write their names in the opposite group (chart B). Those belonging to group 3 were arbitrarily assigned to one of the two groups (sweet / savoury; chart C1/2) and only afterwards were asked about their food preferences (chart D). All three groups then went on to do the first test, which consisted in forming a team of climbers choosing six participants (three sweet ones and three savoury ones) and subsequently, for the second test, to give a mark from 1 to 5 for the reliability of the six participants based on the results obtained (success / failure of the ascent carried out by the chosen team of climbers).

Statistic analysis and results

Taking into the consideration the subjects who freely chose their group affiliation in accordance with their food preferences (group 1) we started by verifying if the trust accorded to the members of the in-group was higher than that of the out-group. The results showed that the trust accorded to the members of the in-group was significantly higher (Sig.,001; with an average of 11,89 for the members of the in-group and 9,00 for those of the out-group). If we then go on to evaluate the influence

of the emotional stimulus on the degree of trust (Test 1) we find no significance inside the chosen group. Going on to analyse the results of Test 2, which was aimed at establishing an evaluation of reliability of the members of the climbing team in both the cases of success and failure of the mission, we can see that in both cases the degree of trust accorded was significantly higher for the members of the in-group than for the out-group (Sig.,02). Comparing the evaluations of reliability made in the cases of success and failure, we could observe that while the trust accorded to the members of the in-group remained stable, trust accorded to the members of the out-group dropped significantly in the case of failure (mission success, average rating 9,63; mission failure, average rating 8,49; Sig.,006).

However, if we differentiate by gender, we can see that for females trust remained stable also for the members of the out-group. In the case of mission failure a significant difference emerged between the averages of the trust ratings towards the in-group for subjects who had undergone emotional induction. The negative emotional stimulus appeared when failure was significantly associated to a lowering of trust accorded to the in-group (Sig.,05). In the case of success the emotional induction was not associated with any variation of the trust rating. We then proceeded to verify the correlations between the MPP personal scales and the trust rating (Test 2) of those subjected to the negative emotional induction and mission failure. The following correlations emerged: growing empathy produced growing trust towards the out-group (,35**); Machiavellianism was negatively correlated to trust towards the in-group (-,30*). In the condition of mission success and when the emotional stimulus was positive, a negative correlation emerged between social desirability and trust accorded to the in-group (-,42** ,005) and a positive correlation between trust accorded to the out-group and pro-sociality (,32*). In the condition of success and negative emotional stimulus, a significant positive correlation emerged between interpersonal trust and trust accorded to the out-group (,44**). Finally, in the condition of failure and positive emotional induction, no significant correlations emerged. As regards the forced affiliation subsequent to the manifestation of the subject's preference (group 2), we found that in Test 1 trust accorded to the in-group (average 8,72) was lower than trust accorded to the out-group (average 12,17). While when the affiliation was forced before manifestation of the subject's preference (group 3), trust accorded to the in-group (average 12,09) was significantly (Sig. ,001) higher than trust accorded to the out-group (average 8,92), the same as the results for the free affiliation group. Going on to analyse the results of Test 2 both for conditions of success and failure, the ratings for trust attributed to the in-group registered a significant difference (Sig.,001) between group 2 (average 8,74 towards the in-group) and group 3 (average 10,50 towards the in-group); a further

significant difference emerged in the trust ratings towards the out-group: group 3 (average 9,49), group 2 (average 10,56). The emotional stimulus had no effect. The analysis of the personal traits of group 1 and 3 showed a significant difference (Sig.:.04) on the scale of self-confidence in the case of success among those who considered the members of the in-group to be more reliable, registering higher trust levels in the presence of lower self-confidence (more trust towards the in-group members, average 23,35; more trust towards out-group members, average 25.21).

In the case of failure, a significant difference was registered (Sig.: .05) on the scale of self-image management and on the scale of pro-sociality among those who considered the in-group members to be more reliable. More trust was associated to higher marks in the management of self-image: average 26.13 for more trust accorded to in-group members; average 24.20 for more trust accorded to out-group members. As regards pro-sociality values an average of 21.67 was registered for higher trust accorded to in-group members and an average of 20.01 for higher trust accorded to out-group members (Sig.: .05). we then went on to analyse how the subjects distributed the roles of leadership in the team. More specifically, we evaluated the attribution of the position of head of the line and the person responsible for the equipment. As regards group 1 we found that 40.0% attributed both these high responsibility roles to in-group members; 24.4% assigned the position of head of the line to the in-group and the equipment management to an out-group member; 20.0% gave the line leadership to an out-group member and equipment management to an in-group member; 15.6% gave both roles to out-group members. In total 64.4% assigned the most important roles to in-group members. Comparing the groups, a significant difference emerged on the MPP scale for empathy between those who assigned the responsible positions to in-group members (average 20.44) compared to the opposite case (those who assigned everything to out-group members, average 18.14) (T-test Sig. .021). Finally, a significant difference emerged on the Machiavellianism / cynicism scale between the group who assigned the role of line leader to an out-group member, reserving the role of equipment management for an in-group member (average 25.0) and the group who delegated both positions of leadership to out-group members (average 20.71) (T-test Sig. .05). We then went on to evaluate the influence of the positive emotional stimulus on the distribution of the positions. In situations of positive emotional stimulus we could note that the more important roles were assigned to in-group members, while in conditions of negative emotional stimulus, the tendency was to attribute the role of line leader to an in-group member and that of equipment management to an out-group member.

For group 2 we observed that 18.2% attributed both roles of high responsibility to in-group members; 9.1% assigned the role of line leader to an in-group member and equipment management to an out-group member; 30.3% assigned the position of line leader to an out-group member and equipment management to an in-group member; 42.2% assigned both primary roles to out-group members. In total 27.3% assigned the more important roles to in-group members. Comparing the groups in function of the attribution of positions of responsibility, no significant differences emerged on the MPP scale. Finally, for group 3 we observed that 56.6% of the subjects gave both primary roles to in-group members; 19.7% assigned the primary role to an in-group member and the secondary role to an out-group member; 13.2% assigned both roles to out-group members; 10.5% assigned the more important role to an out-group member and the secondary role to an in-group member. In total 76.3% assigned the more important role to an in-group member. Comparing the groups a significant difference emerged on the MPP scale for pro-sociality among those who assigned both positions of responsibility to in-group members (average 20.49) as compared to the opposite case (those who assigned everything to out-group members, average 22.90) (T-test Sig. .032). A significant difference on the MPP scale for social-emotional intelligence emerged between the group who took on all the leadership roles and the group who assigned all the highest position of responsibility to an out-group member and the secondary position to an in-group member. In the first case we registered an average of 78.09 while in the second case 66.38 (T-test Sig. 042). Finally, a significant difference emerged on the pro-sociality scale between the group who assigned the role of line leader to an out-group member, reserving the role of equipment management for an in-group member (average 20.13) and the group who delegated all the positions of leadership to out-group members (average 22.9) (T-test Sig. .03) we then went on to evaluate the influence of the emotional stimulus on the distribution of the positions. In situations of negative emotional stimulus we registered a tendency towards polarization of the positions (a reinforcement of internal leadership or a reinforcement of external leadership). Both averages increased with a propensity for leadership sharing.

Discussion

The data shows that when the subjects choose their affiliation group freely (group 1), they tend to manifest more trust towards in-group members. Therefore, the data shows that the simple manifestation of a food preference can determine a propensity for trust towards people with the same characteristic. This does not happen when the subjects were arbitrarily forced into a group affiliation and only successively were they allowed to indicate their food preferences for sweet or savoury (group 3). In this case they accorded more trust to in-group members (imposed) independently of their food

preferences. Here the variable, which determined the propensity to trust, was the forced affiliation into that group rather than another. In group 2 the subjects were asked to express their food preferences beforehand and they were then categorized in the opposite group. In this experimental condition the propensity to accord more trust to subjects with similar food preferences was highlighted, rather than the propensity to trust the members of the assigned group (in-group). This atypical tendency shown by group 2 could be caused by a cognitive dissonance between an individual preference and the forced affiliation into a group with opposite preferences. More specifically, it seems to be the preliminary request of the preference that annuls the effect of the minimum group. When the subject in full awareness recalls a personal trait (even if this trait is not a central element of identity), and the affiliation occurs after the recall, the effects of the minimum group are annulled. The reminder of certain aspects of Himself prior to the forced affiliation produces effects that go in the opposite direction to the theory of the minimum group, also in regard to the rating of trust attributed the in-group and out-group members, both in the case of success and failure of the test. When people are allowed to freely choose their group and experience failure, they tend to lower even further the trust rating accorded to the out-group, showing in this was that they significantly attribute the cause of failure to the out-group. In this condition we can presume that a subjective attribution of cause has been activated.

The negative emotional stimulus together with the condition of failure determines a significant lowering of the trust rating accorded to the in-group suggesting that a negative emotion combined with failure determines a greater internal attribution of cause. Frustration due to failure alone did not register this kind of tendency. Neither did the positive emotional predisposition or success in the test determine significant variations in the ratings. The personal characteristics played different roles of mediation dependant on the different conditions. For subjects who experienced both negative conditions (failure and negative emotional stimulus), an increase in empathy caused an increase in trust accorded to the out-group, blaming the others less. This would lead us to believe that an empathetic person, more incline to identify himself with others, tends to protect others more than himself or his own group. An increase in Machiavellianism / cynicism produces a decrease in trust ratings towards in-group members; the Machiavellian subject cynically tends to accuse his own group, holding it responsible for the failure. Rather than protect his own group, in a situation of no advantage, he will despise it, because his bond / participation is only instrumental. For subjects who experienced both the positive conditions (positive stimulus and success), an increase in social desirability produces a decrease in trust ratings towards the in-group. In the case of success, those who aspire to

social desirability seem to be more willing to downplay the merits of their own group in order not to irritate the out-group and thus avoid the creation of negative images and opinions towards his person. An increase in pro-sociality produced a higher trust rating towards the out-group, almost as if to share the merits of success. In the conditions of negative emotional stimulus and success in the test, a positive correlation between interpersonal trust and trust accorded to the out-group emerged. As if in conditions of negative emotional predisposition this kind of personal characteristic is more active when subsequently associated with success, which modifies (reversing it) the state of the mood. In the passage from a negative state of mood to a positive state of mood the trust rating accorded to the out-group increases. In conditions of success the subject with low self-esteem tends to reinforce his self-esteem through an increase in the trust rating towards members of his own group, distributing internally, from a compensatory viewpoint, the merits of the success.

In the case of failure, those who tend to keep the trust ratings high towards their own group also present high values on the scale of self-image management, as if they wish to preserve its value in the eyes of the others in this moment of difficulty for the group and when their self-image might become involved in processes of denigration and discredit. Also in the conditions of failure, more pro-social subjects are orientated to an increase in trust ratings towards the in-group, as if they want to protect their own group in a moment when it is naturally more exposed to tensions and internal conflicts. In reference to the distribution of the positions of leadership and responsibility on the team, we could note that for group 1 and group 3 there was a prevalent tendency to assign the first and second roles to in-group members while for group 2 there was a more prevalent tendency to assign positions of leadership and responsibility to out-group members (72.7% in total as compared with 64.4% accorded to the in-group for group 1 that operated in conditions of free affiliation). As regards personal traits, in group 1 empathy appeared to tend towards an in-group orientation and the subjects characterized for this trait tended to attribute the important roles to the in-group members. The subjects with high Machiavellian / cynicism traits tended to attribute the secondary position to in-group members and the high leadership role to out-group members. Probably, this attitude would allow them to limit the risks of full responsibility while allowing them to exploit a position of power sufficiently enough to maximize its obtainable advantages. In group 3 the subjects with a higher social-emotional intelligence tended to assign the two positions of responsibility to in-group members while the lower levels of social-emotional intelligence showed a tendency to behave in a similar way as the Machiavellians (the highest position to an out-group member and the other position to an in-group member). However, the mistrust and suspicion typical of

these subjects could have determined this type of choice, being orientated more to the minimization of risk than to a strategy finalized to achieving subjective advantages. Still inside group 3, the pro-social subjects tended to distribute externally both positions of responsibility. As regards the role of the emotional stimulus, we found that only the negative stimulus was capable of reinforcing the polarized distribution of leadership (totally internal and totally external), with a decrease in the intermediate positions characterized by a mixed distribution. All this meant that the group was less flexible and more willing to share the extreme positions of power. For group 2 there were no differences in this sense on the personality scale. This could be due to the particular experimental conditions of the test which required the subject to be forcibly affiliated to a group made up of subjects with food preferences opposite to his. The denial of his manifest preference and the forced integration in an opposing group could probably have generated a conflict and a greater perception of a state of coercion. This did not happen in group 3 where the preference was expressed only after the forced affiliation. The resulting cognitive dissonance and the immediate desire to react to this dissonance could have neutralized the personal traits and their relative subjective inclinations.

Conclusions

In coherence with the minimum group theory (the conditions of which have been replicated by us in the third experimental condition), our variables object of investigation, that is, the distribution of a feeling of trust and the rating of the level of inter-group and intra-group reliability, undergo the effects of social affiliation exactly in the same way as for the distribution of advantages/disadvantages. Therefore, both the trust accorded and the reliability attributed, both in the case of success and failure of the tests, is greater towards the members of one's own group rather than to the members of an out-group. We can state that the experimental results extend the laws of the theory of the minimum group and the effects of social affiliation also to the

feeling of inter-group and intra-group trust and to the evaluation of reliability.

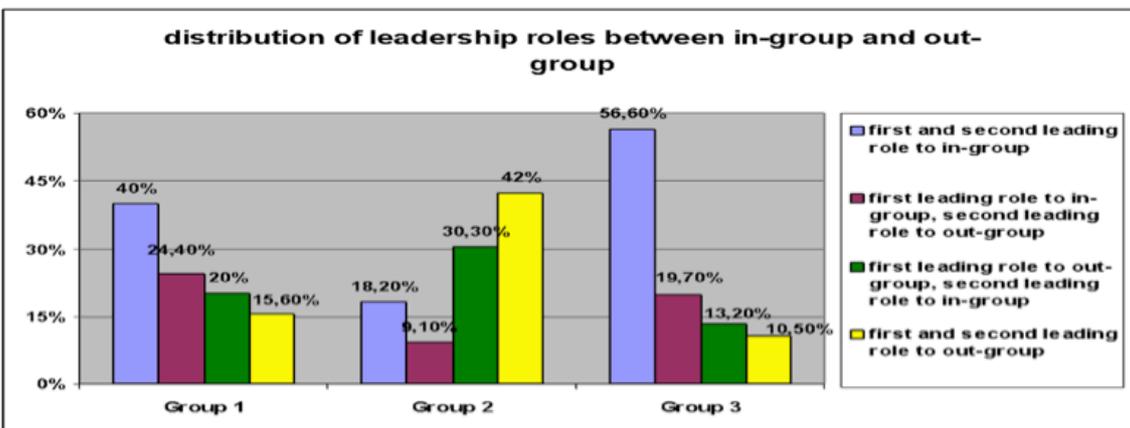
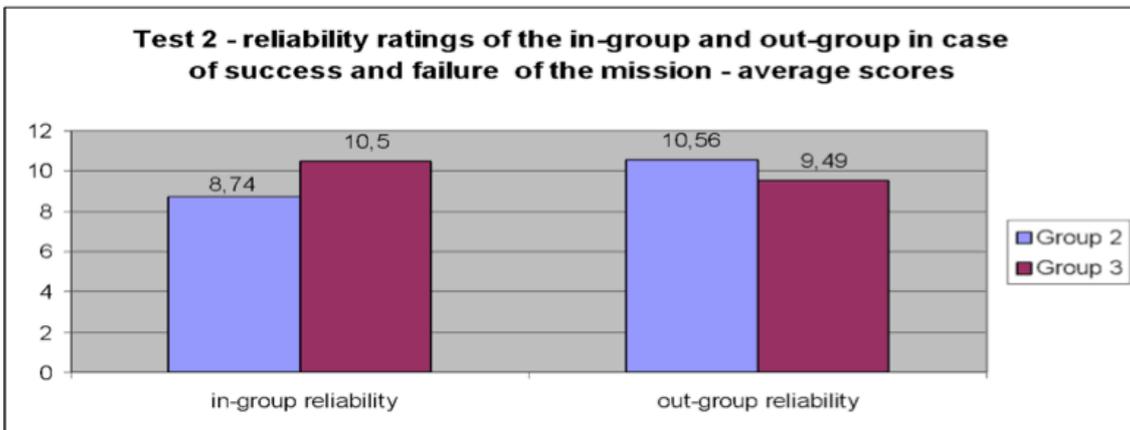
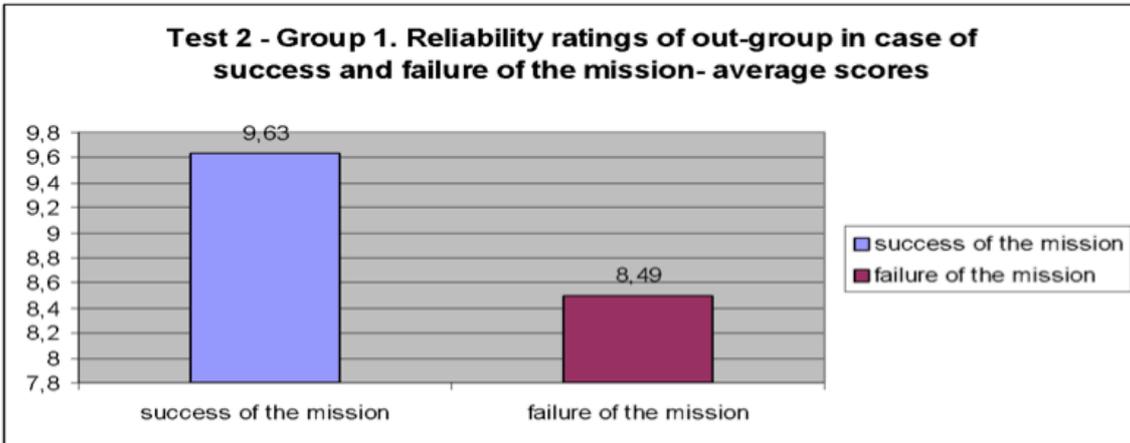
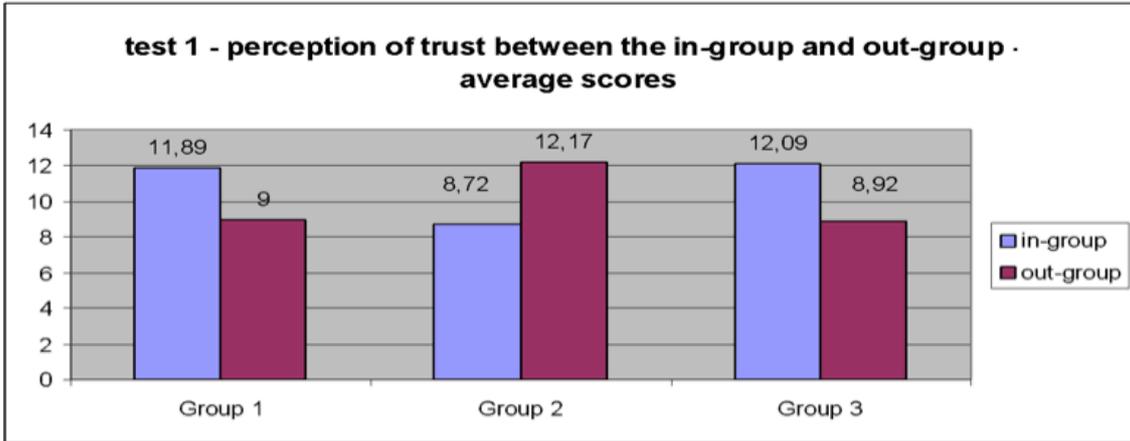
When social affiliation occurs subsequent to the elicitation of the subject's preferences the effects of the minimum group are annulled, and in fact the opposite is noted. Forced affiliation is to all effects impeded by the voluntary recall of the preferences and the person does not see himself in the group he has been arbitrarily assigned to but rather in the group that is similar to his own preferences. From a comparison between groups 2 and 3 we could find that the experimental conditions of group 2 inhibit the effects of the forced affiliation.

From the comparison between groups 1 and 3 a common tendency emerged to give more trust to in-group members (assigning them the more responsible roles). However, in group 3 this tendency was more evident (76.3% as opposed to 64.4% in group 1).

In relation to the role of the emotional stimulus, we found that only the negative stimulus was capable of reinforcing the polarized distribution of leadership (totally internal or totally external), with a decrease in the intermediate positions characterised by a mixed distribution.

When people freely choose their affiliation group and experience failure, they tend to lower their rating of reliability towards the out-group, showing in this way that they significantly blame the out-group for the failure. The negative emotional stimulus, when associated with a condition of failure, determines a significant decrease in reliability ratings of the in-group. This suggests that a negative emotional predisposition, together with a failure, determines a greater attribution to internal causes.

The personal characteristics considered have shown an irrelevant weight on the laws of the minimum group. The only dimension that has shown any influence and can be considered capable of mediating the effects of the minimum group was the pro-social characteristic.



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Cognitive Change among Foreign Managers in Japan's IT Sector

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Introduction

This study report provides evidence about how North American IT professionals change in the process of working in the environment of Japan. The changes studied here include cognitive, metacognitive, and behavior changes, however mainly the cognitive changes will be examined in this research report. This research project began with intuitions about the subject, namely that North Americans coming to Japan would experience a situation different enough to change their behaviors and thinking that were in place prior to arrival in Japan. These intuitions were formulated as research questions. The research questions were developed into in depth, open form interviews.

Literature review

The literature on foreign managers and acculturation in Japan has languished in the time since the collapse of the Bubble Economy in the early 90s. As economic excitement has shifted to China and other countries, academic interest has also shifted away from Japan. Highlighting this shift of attention, only a handful of academic papers on cognition in Japanese business have appeared in 2000-2014; journal searches on "Japan management cognitive" and similar keywords found only a few each of articles, books, and dissertations.

Nonetheless Japan retains its reputation as a challenging country for acculturation and adjustment in the popular press (Pilling, 2008). As such, Japan and the experiences of foreign workers in it can be a source of insight into cognitive change and acculturation.

This paper is based on original research and investigates changes in cognitive style occur in North American managers working in Japan.

What is cognitive style?

Cognitive style refers to the way a person gathers and evaluates information about their environment (Allinson & Hayes, 1996, 2011). These authors broadly describe two extremes, analytical and intuitive, and gradations between them based on the earlier work of Hammond et al., (1987). Allinson and Hayes however developed the Cognitive Style Index (CSI) specifically for business managers. Numerous studies have been undertaken

using the CSI on managers in North American and other countries, however not in Japan. Other writers have criticized this one dimensional (analytical-intuitive) as oversimplifying because these extremes may be mutually reinforcing and in place in managers (Hodgkinson and Sadler-Smith, 2003). This research paper however does not investigate the deep nature of cognitive style. Rather the goal is identify and compare changes in the style of individuals before and after their exposure to the business environment of Japan. Therefore the unitary intuitive-analytical dimension proposed by Allinson and Hayes is taken as a starting point for this work.

The hallmarks of intuitive cognitive style are grasping an overview of a project and understanding its elements in terms of their interrelationships.

The characteristics of analytical cognitive style include grasping components of a project and understanding its elements in terms of categories.

Allinson and Hayes (1996, 2000) have not included Japan in their empirical work on cognitive style, nor have other studies employing the CSI. They do however refer to older works that found inconclusive and apparently contradictory results in seeking to identify differences at the macro (nations or regions) in East versus West cognitive style. Abramson, Lane, Nagai, and Takagi (1993) found Japanese to be more intuitive in style albeit using the Meyers Briggs Type Indicator (MBTI). Abramson et al. found Japanese to be slower decision makers, possibly due to "a more feeling-based cognitive style" (pg. 581) reflected in preferences for group harmony, relationships, and sensing the environment as a whole. Canadians, in their study, preferred "a thinking-based cognitive style" (pg. 581). Further, "the Canadians displayed a cognitive style that reduced the importance of the human element in favor of analytical, impersonal, rational factors." (Abramson et al., Pg 585).

Cognitive differences exist between a notional East and West according to Nisbett, Peng, Choi, and Norenzayan (2001). In their work *West* refers loosely to those cultures that inherited their thinking from Ancient Greece. *East*, meanwhile, refers to those cultures that trace their roots to Ancient China, specifically in East Asia. The differences are based in *tacit epistemologies*,

long held understandings subsumed by the people of those cultures. They explain that East Asians conduct less categorizing, lean toward grasping an overall view, employ less formal logic, and prefer a dialectic understanding of issues. These are broadly described as *holistic*. The West, exemplified in their work and in Nisbett (2003) categorizes more, employs formal logic, and is more reductionist. These are described broadly as *analytic*.

While the work of Nisbett and collaborators used complex imagery with Japanese and Canadians, Kitayama, Duffy, Kawamura, and Larsen (2003) found similar differences among Japanese and Americans using a simplified visual task.

Thus three different models, those used by Abramson, et al. (1993), Nisbett et al. (2003), and Kitayama et al. (2003) find similar cognitive style differences among East Asians and North Americans. Psychology studies have identified cognitive style differences between East and West in other fields of research such as and sociology (Yang, 1986). In the fields of business and management science, Hay and Usunier (1993) quote an interviewee pointing out the difficulty of quick change within an organization and inadvertently describing a holistic cognitive style:

“We [Japanese bank managers] always consider the sequence between the past and the future. Dramatic change is only possible from the outside. But continuity is very important. It is difficult to change

things drastically.” (Pg 327)

The holistic approach remains widespread and Japanese business organizations are often described as holistic by writers such as M. Abe (2010).

It is a reasonable step to conclude that these cognitive style differences, if they are indeed confirmed, exist among business managers. The studies cited above used students as proxies for whole populations, albeit Abramson et al. took MBA students as a study population. This research paper accordingly accepts the notion that a broad difference exists as described on a general population level. This paper also seeks to identify evidence of those proposed cognitive style differences in the management styles of Japanese and North American business managers. Further, this research paper seeks to identify changes in cognition as North American business managers adjust to work in the host country of Japan.

The Japanese management styles presented below match the cognitive style ascribed to East Asia. Rather than assigning credit or guilt to individuals, these common techniques (according to cited literature and direct observations of this author) emphasize group identity and efficacy. As in the examples of frame and components in the cognitive styles literature, the emphasis in Japan is largely on the frame and relationships. Among the North American techniques noted below, the emphasis is, in reverse, placed on the components which is generally to say on staff members, not the group.

Table 1: Cognitive style in management style preferences

Japanese management style	Analogous or opposite North American management style	Comment
Chourei shiki – regular ritualistic morning gathering	No analogous management technique	Focus on group, not individual; Increases the feeling of group unity; joint presence and joint suffering contribute to group identity (Maricourt, 1994; Nishiyama, 1999).
Kachou at head of island of desks of team	Opposite: Cubicles and offices; geographically distributed teams;	Focus on group, not individual; Front line boss knows the team, their abilities, strengths, weaknesses, and activities in depth (Nishiyama, 1999).
Evening drinking (frequent, late)	Infrequent brief evening drinks; may be open to outsiders.	Focus on group, not individual; Group limited to the organization's members, develops group identity (DeMente, 1994; Nishiyama, 1999).
Feigned drunkenness	No analogous behavior.	Usual strictures of relationships are suspended. Opens a channel for feedback and complaints with no reprisals on the complainer (DeMente, pg 86, 1994).
Seniority based promotion	Opposite: merit based promotion	Focus on group, not individual efficacy; Ensures staff loyalty (Coleman, 1999) and promotion of individuals who embody the goals and culture of the organization (Haghirian, 2010).

Preference for generalists	Preference for specialists	Restricts the value of any one individual; Training includes broad range of skills including moral training (Sakai, 2009).
Ideas don't get acted on immediately	Ideas not credited to the author are considered stolen.	Focus on group, not individual; Ideas become part of the group understanding and are not bound to an individual before considered for action (Bhagat, Kedia, Harveston, and Triandis, 2002, p. 214).
No individual credit for idea generation	Ideas not credited to the author are considered stolen.	Focus on group, not individual; Develops pre-eminence of group over individuals (DeMente, 1994)
Nemawashi	Meetings outside the group could be considered underhanded.	Focus on avoiding class; Manager seeks solutions one to one with team, not in group discussion (Nishiyama, 1999; Kameda, 1996).
Total Quality Management (TQM)	Six sigma (fixing the product or process).	Focus on the whole delivered product, not the components of the product; Employees become aware of how they contribute to final overall results (Haghirian, 2010).
Wa – maintaining group harmony	Constructive conflict; performance based hiring and firing.	Focus on group, not individual; Avoid upsetting the group at the expense of the individual or team (Haghirian, 2010).
Slow decision making	Slow is considered a cause of failure	Focus is on group participation; Time is necessary for consensus building (Nishiyama, 1999; Abe, 2010).

The above Japanese management styles, all in wide use in Japan, indicate preference for holistic approaches. North American managers that have moved from analytic approaches to holistic approaches have either undergone a change in cognition, or have accepted a different cognitive style on the surface level. The data collected for this research report will help to identify whether managers have undergone either or both of those steps.

Research Questions

Thus the research questions for this report include:

- Can North American business managers move out of Nisbett's analytic category of cognitive style into holistic?
- Are there identifiably positive or negative outcomes to cognitive change evinced by cognitive style?

Because this research seeks to be relevant to the business world as well as to the research community, it also seeks implications for North American managers working in Japan or other East Asian locations.

A table of cases is shown below.

Table 2: Overview of cases

Case	Nationality	Job Title	Years in Japan
12C	USA	VP Business Development	15
12D	USA	Team Leader	20

Methodology

This research paper collected qualitative data in the form of in-depth interviews with North American (US and Canadian Anglophone) managers working in Japan's IT sector. The individuals were identified through Linked In as well as the American Chamber of Commerce in Japan (ACCJ) directory. Some individuals came from the first or second degree contacts of the author. In all 128 potential contacts were identified and 76 were contacted. Outreach was accomplished through Linked In (63 contacts), verbal requests (3), email (9), and website interfaces (4).

Of these, 19 responded with a willingness to join the study and ten completed the study. One of the ten was removed from the study as his experience in Japan's IT industry had ended about eight years prior.

The interviews included the same questions in largely the same phrasing and order. All but one were recorded with typed notes been taken simultaneously. Most included follow up sessions to clarify or expand on issues. Some of the recordings have been transcribed.

12E	USA	Supervisor	8
12F	Canada	Engineer	3
12G	USA	Team Leader	13
12H	USA	Owner	32
12J	Canada	Engineer	7
12L	USA	Logistics Manager	22
12M	USA	Owner	23

Age of interviewees ranged from 30-60.

Discussion with Analysis and Findings

Change occurred in ways that indicate cognitive change, that is, shift from analytical to holistic.

Table 3: Change in cognitive style

Case	Before	After	Change to Holistic Thinking
12C	Top down non-consensus dictator leadership	Bottom up consensus building including use of nemawashi	Y
12C	Reactive not proactive	We are “very Japanese” in approach to quality of service (proactive re customer experience) – TQM approach	Y
12D	One of the broader team	Ghettoized within the org ...later overcame this in diff org where he is part of the harmony	Y
12E	General feeling of satisfaction	Rejected change to his own thinking and management style. Well defined dissatisfaction; Attempted to mentor Japanese staff	N
12F	Tried to make change, get idea across (do code reviews, eat your own dog food);	Appreciation of some benefits of slow speed and patience with long talking through of an issue;	Y
12G	Direct approach	Indirect approach to protect group harmony	Y
12H	Lower level individuals should seek to stand out	Don't rock the boat; look for ways not to rock the boat that you had not imagined before – think from point of view of the management or other counterparty	Y
12J	Individual can impact the group; Individual will be charged by management to pursue a task they propose at short notice; Individual merit;	Individual cannot cause quick change in the org; The large ship can be redirected only in increments; Merit not rewarded; Contributions not recognized	Unclear
12L	Employees live or die based on their merits	Appreciates relationship philosophy of Japan and uses it to bridge with HQ.	Y
12M	Just work and show your merit; be treated w respect	Picks and applies Japanese and North American styles as suitable; Synergy : Able to embarrass a potential client yet gain their custom; US appreciation of time to minimize transaction cost – Japan appreciation of seniority so he moves to get to a senior Japan person instead of politely working with lower staff.	Y

Impact on the manager

After detecting a change in cognitive style by identifying adoption or abandonment of a management technique, the next question is to determine the impact of the change. One way to directly detect such impact is to identify positive or negative outcomes for the manager. Data gathered for this study shows that the shift in cognitive style from a typically Western one, analytic, to a typically East Asian one, holistic, results in some cases in clearly different end states.

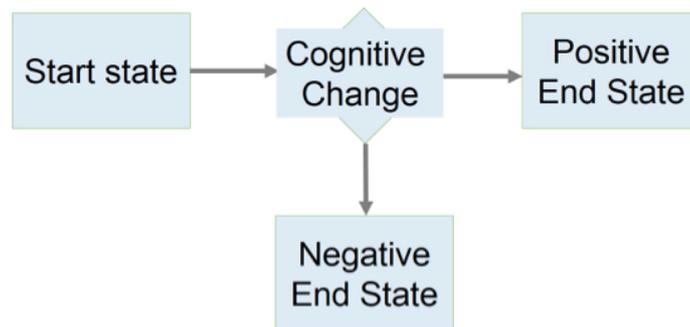


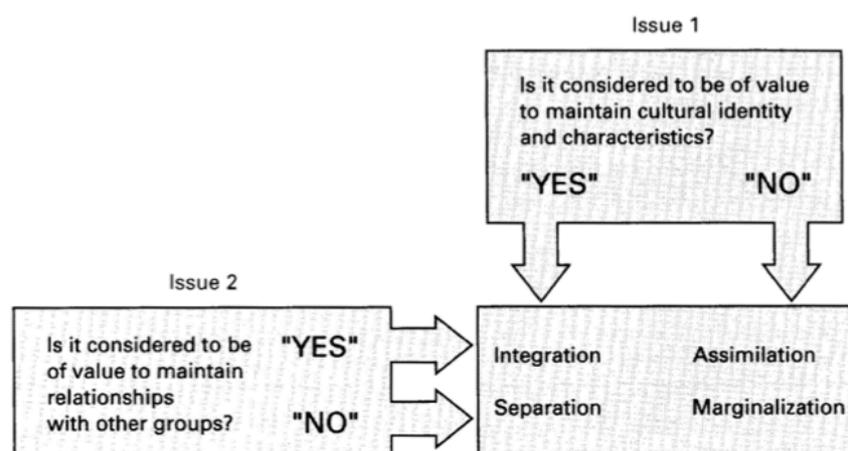
Figure 1

After the change in cognitive style

This research report employs Berry's (1980) framework for acculturation which proposes four states of acculturation: integration, separation, assimilation, and

marginalization. These are arrived at based on the relative importance of relationships and cultural identity as modeled in the figure below.

Acculturation Framework



Source: Berry, J. W. (1980). Acculturation as varieties of adaptation. In A. Padilla (Ed.), *Acculturation: Theory, models, and some new findings*. Boulder, CO: Westview. Reprinted with permission.

Figure 2

The four possible outcomes described by Berry (1980, 1997) and the synergy outcome from Adler and Gundersen (2007) are mapped in the figure below to positive or negative outcomes.

Separation, marginalization, and assimilation are considered negative in this research report because the individual cannot contribute their ideas and styles to the host culture. In a practical worst case scenario, separation and marginalization situations could result in the demotion, sidelining, or loss of job of individuals who arrive and stay in these end states. Assimilation too, though it may seem safer, could result in the removal of an expatriated business leader who has "gone native" and cannot effectively represent the wishes of an overseas headquarters.

Berry's integration concept is described as the dominant

culture accepting some institutions of the non-dominant group while the non-dominant group accepts the basic values of the dominant group (Berry, 1997).

Adler and Gundersen (2007) describe synergies as involving "...a process in which managers form organizational strategies, structures, and practices based on, but not limited to the cultural patterns of individual organization members and clients." (pg 109). Thus synergy does not insist on acceptance of any one set of norms or standards. Synergy and integration are further differentiated in that synergy requires the rise of new solutions which go beyond the available range of solutions offered by the cultural groups represented.

Integration is seen as positive in this report because the foreign manager can contribute management ideas and techniques to the host culture environment. Similarly,

synergy is seen as positive because the foreign manager contributes management ideas albeit in changed forms that particularly suit the immediate environment in

creative combination with the local thinking and practices. Figure three shows the end states.

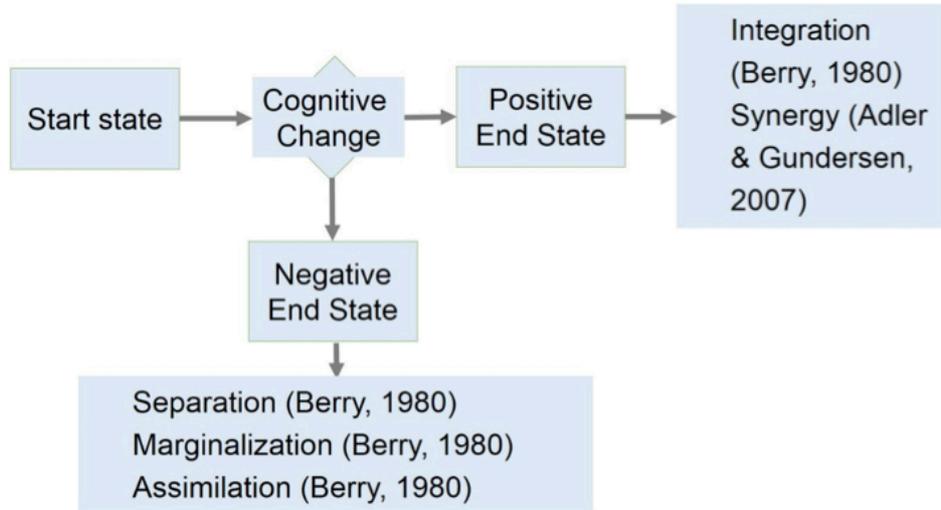


Figure 3

Table 4: Positive or Negative Outcome

Case	Outcome	End status
12C	Positive	Integration
12D	Negative	Separation
12E	Negative	Marginalization
12F	Positive	Integration
12G	Positive	Integration
12H	Positive	Integration
12J	Unclear	Assimilation Integration
12L	Positive	Integration
12M	Positive	Synergy

The shift in cognitive style from analytic to holistic indicates a change in cognitive style. What remains unclear however in this study is the degree of change. Most of the managers interviewed indicated that they

had preferences for both typically North American and Japanese management approaches. Therefore it seems unlikely that one style overrides or erases another in this study population.

Assimilation

This individual has been in Japan only three years prior to the interviews. The passage of time appears to have been too brief for this person to identify their role in the company and the greater context of Tokyo. The individual in case 12J has been able to change his own thinking from “a junior employee should strive to make a mark on the organization” to a more Japanese way, “my ideas are contributed to the group and the group will gain credit and benefit from them”. He further describes his image of the Japanese corporation as one in which the organization seems like a great ship, so big that its direction can only be changed by small increments through the indirect efforts of individuals.

12J has therefore surrendered his analytic approach in which personal identity and merit form the cornerstones of success and satisfaction. He has assimilated to the

point that he considers himself part of a group that must survive in order to achieve success. It is not clear however that 12J will continue in this assimilated state. His own overarching goal is to become an entrepreneur, a radically different role in which he may integrate or synergize based on his North American background.

The end state, however, need not be a permanent state. The manager may move to another state as evinced by some cases in this study. Like 12E, discussed next, case 12J has not yet clearly settled into one position in the model.

Marginalization

12E had been unable to find satisfaction working within a Japanese company but in the months before these interviews, was able to find a new understanding of the role as an individual in the context of groups. His new

understanding may have started 12E on the path to integration, though too little data exists to know and follow up interviews in coming years will be necessary to confirm the outcome. Moreover, 12E's time in Japan, only three years as of summer 2013, may yet be too brief for the sensitive process of determining his state.

The experience of this person was ranged from intimidating to disappointing. On one side, the foreign staff was separated from Japanese staff, "we were in our own small space, we were in the "cave" it was an intimidating space." Physically separated from the mainstream work environment, this individual found himself ultimately marginalized. Attempting to work with and train Japanese staffers, he found "Japanese engineers were happy to follow what you teach, but do not take it further." His professional and personal network among Japanese was minimal and in the end he "realized that Japanese management and workers want no change". Blocked from integration and with his efforts to reach out rebuffed, this person found himself marginalized and unable to contribute to or learn from the host culture. Did his experience with the Japanese employer change his work style or way of thinking? "No," he responds.

Separation

One case in the study, 12D, worked for several employees

with some negative experiences. An early employer accommodated his North American style and thinking in the early 2000s, in a rural region of Japan, Shikoku. Moving to Tokyo he found himself in a Japanese owned multinational where the division head hazed the foreign team through schedule changes and countermanded orders. The result of this experience was that the individual, and his team of foreign workers, was separated from the work process. But they were not marginalized because they developed a coping mechanism of going further up the chain of command to get the necessary support for their work. This situation continued during this entire period of employment with the foreign staff in a sort limbo, not integrated into operations fully, but also not entirely out of the picture. Having changed employers between the first and second interviews in this study, 12D finds himself in a new job, comfortably integrated with the staff of a smaller Japanese organization contributing to projects and products. He has not assimilated fully to the Japanese environment, nor has he developed new synergies with his coworkers. His current status seems to one of integration.

Integration

There are numerous examples of integration among the cases in this study report.

Table 4: Integration examples

Case	Example
12C	Changed to bottom up consensus building including use of nemawashi Introduced limit working after hours Accepted as fundamental a Japanese view of top quality customer service Rejected Japanese after hours drinking in favor of in-office communication Accepted Lean integration with suppliers
12F	Integrated benefits of slow speed of decision making and long talking through of issues while maintaining task orientation
12G	Able to integrate North American and Japan based skills by being a bridge between Tokyo and foreign based HQ
12H	Integrated showing of value (North American style) as relationship ceased to be the supreme as in the Bubble Economy era
12L	Integrated relationship philosophy of Japan and uses it while keeping focus on completing tasks, bridging understanding between foreign HQ and local operations, etc.

The above individuals have shown a shift in cognitive style by integrating North American and Japanese management styles, using both holistic and analytic approaches.

Synergy

Case 12M indicates the strongest synergy creation among the cases presented. While synergy may be present in Cases 12H, 12J, 12L, and others, 12M has certainly been able to create multiple new approaches that are neither completely holistic nor analytic, neither

entirely Japanese nor North American. These new approaches are synergies in Adler and Gundersen's (2007) understanding as described previously in this report.

Go straight for the leader

The individual in case 12M studiously avoids working through the hierarchy of a potential client company in normal fashion. Usual behavior in the Japanese business context might be to develop a contact slowly with or without access to the ultimate decision makers. Where a

higher level person is part of a meeting, conversation is commonly managed by a junior staffer with little direct input from the higher level manager. 12M however pushes directly to the higher level person and presents a proposal. Synergy here is based on a North American preference for minimizing transaction cost and the Japanese appreciation of senior staff. Once 12M has accessed the senior decision maker, return to the junior staff by the Japanese organization is unlikely. Put neatly into a trap of responding, and thereby increasing their own face as senior staff, or repositioning the junior staffer as the contact point and losing face, many feel compelled to directly deal with 12M.

Embarrass potential client

Strategically he allows potential clients to think he speaks Japanese poorly. Thus he surprises them with his highly fluent and technical Japanese. They feel embarrassed when it turns out that the person they were speaking about has in fact strong language skills and has been following the conversation. As a result, when he does speak, they listen more closely. This is a face damaging exercise with respect to the potential client whereas it is face-building for 12M. Normal expectations would be for a new relationship to be severely damaged, if not destroyed by such a maneuver. However, this tactic is successful for 12M because it develops respect in the client for his abilities. This tactic is neither in the canon of North American nor Japanese behaviors but has been developed by 12M, synergizing from both business

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cultures.

Implications

North American IT managers can change their cognitive style and gain benefits through achieving integration or synergy. The population can integrate, at least most of those in the sample. In some cases they seem to have the resilience to move from negative end states to positive ones.

Limitations

This study report is limited chiefly by the small sample size. However the in depth interviews provided a glimpse into a potentially important theme, cognitive change, for future study.

Another limitation is that these managers are not reviewed by their Japanese co-workers whose contribution could balance the perception of their strengths and weaknesses.

Conclusion

The study reveals that a fundamental shift in thinking can occur for North American managers working in Japan. The shift from analytic to holistic cognitive style can lead these managers into positive or negative outcomes. Those that navigate the process to arrive at positive results may be a source of further learning about acculturation, thinking, and the Japan-North American business-scape.

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