

University of Tartu
Institute of Psychology

Master's Thesis

**Relationships between Behaviour, Psychological Properties of Situations, and
Personality Traits**

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Running head: Behaviour, situations, and personality

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Abstract

The current study examines relationships between the three components of the personality triad: behaviours, situations and personality traits. For that cause, the Riverside Situational Q-Sort (RSQ v 3.15; Wagerman & Funder, 2009) and the Riverside Behavioural Q-Sort (RBQ v 3.11; Funder, Colvin & Furr; 2000; Furr, Wagerman & Funder; 2010) were translated into Estonian and applied to the Estonian student sample ($n = 197$) together with the Estonian version of NEO Personality Inventory-3 (NEO-PI-3; McCrae, Costa, & Martin, 2005) that was used to measure personality traits. The results firstly indicated, that the RBQ is a valuable measurement tool that is applicable in the Estonian context. Moreover, significant relationships between behavioural evaluations, psychological properties of different situations and the Big Five personality traits, were found. Also, situational properties more strongly associated with behavioural evaluations than did the personality properties of the participants.

Kokkuvõte

Isiksuseomaduste, käitumise ning situatsioonide psühholoogiliste omaduste seosed

Käesolev magistritöö uurib isiksusetriaadi kolme komponendi – käitumise, situatsioonide ning isiksuseomaduste – vahelisi seoseid Eesti tudengivalimi põhjal ($n = 197$). Et mõõta situatsioonidele ja käitumisele antud hinnanguid, tõlgiti eesti keelde situatsioonimõõdik *the Riverside Situational Q-Sort* (RSQ v 3.15; Wagerman & Funder, 2009) ja käitumismõõdik *the Riverside Behavioural Q-Sort* (RBQ v 3.11; Funder, Colvin & Furr; 2000; Furr, Wagerman & Funder; 2010). Isiksuse seadumuste uurimiseks kasutati *NEO Personality Inventory-3* (NEO-PI-3; McCrae, Costa, & Martin, 2005) eestikeelset versiooni. Tulemused näitasid esiteks, et RBQ on väärtuslik käitumishinnangute mõõtmise tööriist, mida võib Eesti kontekstis rakendada. Teiseks leiti olulisi seoseid enda käitumisele antud hinnangute, erinevate situatsioonide psühholoogiliste omaduste ning Suure Viisiku isiksusejoonte vahel. Kolmandaks johtus, et situatsiooniomadused seostusid käitumisele antavate hinnangutega olulisemal määral kui indiviidide isiksuseomadused.

Introduction

The Personality Triad

There are many writings available where the complicated relationship between two large fields of psychological science – social and personality psychology – is discussed (e.g., Funder, 2006; Baumeister et al, 2007; Mischel, 2004; Wagerman & Funder, 2009; Uziel & Baumeister, 2009; Allik, 2013; etc). In general, social psychology searches to find out what people have in common whereas personality psychology tries to map people's psychological differences (Fast & Funder, 2010; Wagerman & Funder, 2009; Mischel, 2004). Although these two areas of psychology sometimes seemingly contradict each other, they should base on similar grounds in order to be theoretically meaningful. Fast and Funder (2010), for instance, find that the two fields grew so apart during their development that „many practitioners of each field became unaware of the basic principles, findings and methods of the other /.../“ (p. 670). Yet, despite these differences it is obvious that personality and social psychology are both concerned with the study of individuals and their behaviour (though from different perspectives) and there are researchers who wish to see the two sciences united and speak for the establishment of a new field of research based on the personality triad (e.g., Funder, Colvin & Furr, 2000; Funder, 2007; Furr, 2009; Wagerman & Funder; 2009).

The personality triad is based on the famous equation proposed by Kurt Lewin (1951) more than 60 years ago: $B = f(P,S)$. This equation basically means that “the best way to understand a behaviour is in terms of who performs it, and the circumstances under which they do so” (Funder, 2009, p. 123). This basically means that each component in the triad – the actions, the situational characteristics and the personality properties of the person – all are important and powerful predictors of each other in the triad.

One of the basic arguments in support of the personality triad is the fact that none of the components of the triad seem statistically more powerful than the others, moreover, each component has a correlation below .20 to .40 to the overall variation (Kenrick & Funder, 1988; Murtha, Kanfer & Ackerman, 1996; Richard, Bond, & Stokes-Zoota, 2003; Mischel, 2004; Funder, 2009; Fast & Funder, 2010; Funder et al; 2012).

Although the triad-approach seems both reasonable and viable, the attempts to put this theory in practice have remained quite modest. One of the reasons for this is the perceivably impossible task of creating a comparable match of situational and behavioural taxonomies to the famous Big Five personality system (Bem & Funder, 1978; Murtha, Kanfer & Ackerman,

1996; Ten Berge & De Raad, 1999/2001; Funder, Furr & Colvin; 2000; Roberts & Pomerantz, 2004; Baumeister et al, 2007; Saucier, Bel-Bahar & Fernandez, 2007; Furr, 2009; Wagerman & Funder; 2009; Uziel & Baumeister, 2009; Fast & Funder, 2010; Funder et al; 2012).

Although there have been attempts to classify both situations and behaviours already for decades (e.g. Endler & Hunt, 1968; Buss & Craik, 1980/1985; Ten Berge & De Raad, 2001/2002), there have been no general consensus about which taxonomies measure situations and behaviours the best. The researchers most often bring out the troubles in defining both situations and behaviours (Ten Berge & De Raad, 1999, Roberts & Pomerantz, 2004; Wagerman & Funder; 2009). The boundaries of the two constructs often remain unclear – for instance, when does a situation or a behaviour begin or end? Also the scale on which they can be observed most meaningfully has not been agreed on. For example, in the case of behaviours, one can ask: is the measured word fluency as meaningful as talking a lot in a situation, or as an overall talkativeness of a person? In the case of situations, it is extremely hard to choose the most psychologically relevant attributes of the setting (e.g., is it the location that influences one's behaviour the most, or is it the temperature or the presence of other people, etc.?). Personality triad remains unbalanced until all three of its elements receive a fair amount of attention. (Funder, 2001).

Measurement of Situations and Behavior: The Riverside Q-Sort Instruments

The Riverside Situational Q-Sort (RSQ v 3.15; Wagerman & Funder, 2009) and the Riverside Behavioural Q-Sort (RBQ v 3.11; Funder, Colvin & Furr; 2000; Furr, Wagerman & Funder; 2010) are two possible alternatives to the aforesaid situational and behavioural taxonomies. A personality measurement tool – the California Adult Q-Sort (CAQ), (Block, 1961/1978; Block & Kremen, 1996; Letzring, Block & Funder, 2005) that comprises of 100 mid-level personality descriptors, such as: “is critical and skeptical,” “is genuinely dependable and responsible,” and “has a wide range of interests” – is the basis of both the RSQ and the RBQ (Funder, Colvin & Furr; 2000; Funder, 2007; Sherman, Nave & Funder, 2010; Fast & Funder, 2010). The strong methodological link between the personality measurement and the behavioural and the situational assessment tools supports the personality triad concept of personality research. McCrae, Costa & Busch (1986) have found the factorial resemblance of the California Q-set to the Five Factor Model of personality

(FFM), which indicates that the derived situational and behavioural measuring tools must have some conceptual relation to the Big Five (See also McCrae & John; 1991).

Previous studies using either the RBQ and/or the RSQ have examined, for instance, relations between ratings of children's personalities using the FFM and their behaviours measured by the RBQ during an interaction with their parents (Markey, Markey, & Tinsley, 2004). The results suggested, among other things, that the FFM traits are useful for predicting children's interpersonal behaviours. Nave and colleagues (2013) demonstrated the continuity of personality and its association with directly observed behaviour measured with the RBQ across two contexts spanning four decades. The results indicated, for example, that the children who were rated by their teachers as more verbally fluent, showed dominant and socially adept behaviour as middle-aged adults.

Furr and Funder (2004) examined the degree to which the cross-situational consistency of behaviour, measured with the RBQ, is associated with the similarity of laboratory-based situations. They found, for example, that the participants who had rated two situations as relatively similar were also relatively consistent in their behaviours across the situations and also that the participants were more behaviourally consistent across similar situational pairs than across dissimilar pairs.

A study by Sherman, Nave, and Funder (2010) described a new way for assessing situations to examine the association between situational similarity, personality, and behavioural consistency across different contexts, using both the RSQ and the RBQ. The results indicated, that the participants' ratings of their behaviour were consistent across the four situations, also a single participant tended to describe his or her situations more similarly to each other than to situations experienced by different participants and that personality characteristics, measured with the Big Five Inventory, predicted behavioural consistency even after controlling for situational similarity.

Finally, Sherman, Nave & Funder (2013) investigated the relationship between personality measured with CAQ and the Big Five Inventory, gender and individual differences in situational perceptions measured with the RSQ. Results indicated that although people generally agreed about the psychological characteristics of situations, they still showed distinctive perceptions that related to personality and gender.

The Five-Factor Model of Personality (FFM)

The hierarchical organization of personality traits – the FFM of personality – consists of five basic dimensions: Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness (McCrae & John; 1991/1992). To this day it is one of the most influential models of personality structure (Digman, 1990) that „has become the norm against which different personality trait taxonomies are tested“ (Kallasmaa, Allik, Realo, & McCrae, 2000, p. 266). This structure bases partly on the research of previous personality measures and on the lexical approach which analyses trait terms in English language and that first revealed the five factors of personality (Tupes and Christal, 1961/1992).

Today, the FFM-based measurement tool – the NEO-PI-R (Costa & McCrae, 1992) – has been translated into different languages and scientists have examined its applicability in a wide range of different cultures, including Estonia (Kallasmaa et al, 2000). Although, there are some exceptions in this view (e.g. Gurven et al., 2012), the applicability of the FFM in different cultures and languages is mostly interpreted as showing the universality of the personality construct (Costa & McCrae, 1995; McCrae & Costa, 1997; Kallasmaa et al, 2000; McCrae & Costa, 2003; McCrae et al., 2005; Allik, Realo & McCrae, 2012).

Many researchers argue that although such personality measurement tools are good predictors of personality, they should be context-specific in order to measure the emergence of traits more exactly (Schmit, Ryan, Stierwalt, and Powell, 1995; Ten Berge & De Raad, 1999; Nave et al, 2013). Costa and McCrae (1997) have proposed that, concerning the NEO-personality inventories “a simpler alteration would be to leave the items unchanged and change the instructions to the respondents, requesting that they describe themselves as they are at work, at school, with their spouse, and so on.“ (p. 92). These arguments show, that there is a necessity to find reliable links between the components of the triad.

Aims of the Current Study

The purpose of the current study is to examine the relationships between personality traits measured with the NEO-PI-3 and distinctive perceptions of situations measured with the RSQ and behavioural evaluations within these situations measured with the RBQ in the Estonian sample. To this aim, I examined:

1. What is the structure of the RBQ items across described situations? That is, is it possible to represent the 68 items of the RBQ in terms of a smaller number of relatively homogeneous factors?

2. What are the relationships between people's behaviours across a wide range of different situations measured with the RBQ, psychological properties of the situations (evaluated by the means of the RSQ; see Elme, 2014) and the Big Five personality traits (both at the level of domain and facet scales)?

This master thesis is based on an ongoing research collaboration with professor David C. Funder (University of California, Riverside) and his team which aim is to examine the association between situational similarity, personality, and behavioural consistency across 18 different cultures. In the current paper, however, only Estonian data will be used.

Method

Participants

The participants in the current study were 337 students from Estonian higher education institutions¹. The same sample was described in the seminar paper of Elme (2014), where the data obtained by the RSQ was used.

More than half of the participants ($n = 212$) who had participated in the ISP, also agreed to fill in the NEO-PI-3 personality inquiry. Six people filled in the NEO-PI-3, although they had not participated or finished the International Situations Project. As one of the aims of the study was to compare situational and behavioural data to the participants' personality properties, the contributions of these respondents could not be used. Three participants filled in the same test twice. One of the double data sets was deleted for each of these cases. Six participants had entered the wrong codes either for the ISP or for NEO-PI-3 that made it impossible to link the data sets of the two projects for these cases.

¹

The participants came from 16 different Estonian higher education institutions such as Estonian Academy of Arts, University of Tartu (including the colleges in Pärnu and Narva and the Viljandi Culture Academy), Tartu Health Care College, Tallinn University (including Baltic Film and Media School and Haapsalu College), Estonian Aviation Academy, Estonian Academy of Music and Theatre, Estonian Entrepreneurship University of Applied Sciences, Estonian Academy of Security Sciences, Institute of Theology of the Estonian Evangelical Lutheran Church, University of Applied Sciences, Estonian University of Life Sciences, Tallinn University of Technology (including the colleges in Tallinn, Tartu, Virumaa and Kuressaare), Lääne-Viru College, Polytechnic University of Tallinn, Estonian Information Technology College and Tartu Art College.

Altogether the data of 15 participants was excluded from further analysis, concluding in the sample size of 197 students – 161 females and 36 males with the mean age of 26.9 ($SD = 7,7$). 107 participants had higher education and 90 persons had secondary education. The nationality of 187 participants was Estonian, nine were Russians and one participant had another nationality.

Procedure

The whole procedure of data collection began in fall 2012 and concluded in winter 2013, being administered in two waves due to the poor attendance in the first data gathering (see also Elme, 2014). An e-mail request was sent to all Estonian higher education institutions to forward the information letter to their students about the opportunity to participate in the International Situations Project that was initiated and coordinated by David Funder and Esther Guillaume from the University of California at Riverside (www.internationalsituationsproject.com/). Most of the institutions did forward the e-mail in question but some declined due to stricter policy issues concerning their pupils taking part in research studies.

Next, the advertisement that was sent to the institutions, requested students who were interested in participating, to send an empty e-mail to the data collector with the word “Situatsioonitest” written in the subject box. A reply was sent to the participants with the URL of the online testing environment and codes for entering. Each respondent received one unique code for all the tests. The aim for this was to ease the linking of the data collected separately by the ISP and NEO-PI-3 for each of the cases. The instructive e-mail also directed participants to choose Estonian language for participating in the ISP. It was mentioned, that the test required no “right” or “wrong” answers and that one should fill in the test from his or her own point of view on the described situation. If the respondents had some problems understanding any aspects in the test, they had an opportunity to seek help by writing to the previously mentioned e-mail address.

The evaluated test taking time was about 45 minutes to 1.5 hours. The participants could fill in the online test at any time. The respondents' physical location while filling in the test was not observed. The participants were notified, of course, that completing the test can take quite much of their time and attention. There was no deadline given for completing the test (although the e-mail the participants received stated that it would be nice if they completed it within the next two weeks).

Within the instructive e-mail sent back to the participant with his or her code, there was a request included to again electronically reply using the word „Isiksusetest“ in the heading, if the participant was willing to complete the personality inventory (NEO-PI-3). Understandably this was not the most convenient method for the participant to ping-pong e-mails with the researcher. To make data gathering easier in the second wave, the codes of NEO-PI-3 were then sent together with the codes for the ISP.

The participants completed the NEO-PI-3 in the online survey portal <https://kaemus.psych.ut.ee/>. The evaluated test duration time was about 45 minutes to 1 hours. Thanks to the online testing environment, the participants could fill in the personality test at any time and anywhere. Similarly to the ISP, all the test instructions required to answer the NEO-PI-3 were included in the test battery. Also there was no certain deadline for completing the test.

Measures

As a first task in the ISP, the participants were asked to provide a description of the situation they had encountered the previous evening at 7 pm. The situational description had to cover three main dimensions – the action that was performed, the location of the situation and the people who were involved in the situation. Next, participants were asked to evaluate the situation by using the Riverside Situational Q-sort (RSQ v 3.15; Wagerman & Funder, 2009) and the Riverside Behavioral Q-sort (RBQ v 3.11; Funder, Colvin & Furr; 2000; Furr, Wagerman & Funder; 2010). The data collected using the RSQ has been thoroughly handled in the seminar paper of the author of the current master thesis (e.g. Elme, 2014).

The Riverside Behavioral Q-sort (RBQ). The RBQ is a 68-item assessment tool designed to describe the range of a person's behavior in a situation. (Funder, Colvin & Furr; 2000; Furr, Wagerman & Funder; 2010). The RBQ includes such behavioural characteristics, as: “Appears relaxed and comfortable”; “Is expressive in face, voice and gestures”; and “Tries to control the situation.” These items were asked first to divide into three boxes for evaluating the situation that the participants had provided in the beginning of the test. The “Characteristic” box was meant for items that accurately described what was going on in the presented situation, the “Uncharacteristic” box was for items that did not describe it at all, and the “Neutral” box was for items that did not apply to the situation, or that were too ambiguous for describing the situation. The items appeared one at a time. There were no limitations in placing the items into the boxes for the first series. From the three boxes that

emerged, the participants were then asked to place the items into nine boxes. The last or the highest category implied that the item was “Extremely Characteristic” and the first or the lowest showed that the item was “Extremely Uncharacteristic” of the situation. Placing an item in the middle meant that the item was either irrelevant, or that the participant was unsure of where the item belonged. A fixed number of items went into all of these boxes: 3, 6, 10, 14, 15, 14, 10, 6, and 3 items for categories 1–9, respectively. If the respondent left too many items in any category, the category heading turned red. The test also allowed switching of already placed items between the boxes.

The Riverside Situational Q-sort (RSQ). The RSQ is a 89-item assessment tool designed to describe the characteristics of situations (Wagerman & Funder, 2009). The situational descriptors are, for example: “A job needs to be done,” “Assertiveness is required to accomplish a goal” and “P is being blamed for something²”. Similarly to the RBQ, the participants started with dividing the items into three categories, considering the situation they had encountered the previous evening. Later on, by placing each of the 89 items into one of nine categories, which also ranged from “Extremely uncharacteristic” to “Extremely characteristic”, a forced-choice, quasnormal distribution emerged.

The Estonian version of NEO-Personality Inventory-3. NEO-PI-3 (McCrae, Costa, & Martin, 2005) is developed on the basis of the original NEO-PI-R, created by Costa & McCrae, (1992). The NEO-PI-3 has 240 items that measure 30 personality facets, which are grouped into the Five Factor Model (FMM) domains – Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness – so that each domain score is a composite of six facet scores. The items are answered on a 5-point Likert-type scale from *strongly disagree* to *strongly agree*. The NEO-PI-R/NEO-PI-3 has excellent psychometric properties in a wide range of countries, including Estonia (De Fruyt, De Bolle, McCrae, Terracciano, & Costa, 2009). Kallasmaa et al. (2000) found that in the Estonian sample (n = 711) the Cronbach alphas for the five domain scales of NEO-PI-R were: 0.92 for N, 0.93 for E, 0.92 for O, 0.87 for A, and 0.92 for C.

The RSQ and RBQ as well as all other study materials were translated into Estonian by the author of this study and Anu Realo. The Estonian version of the survey was then re-translated into English by a person who had no previous knowledge of the materials. David Funder and Esther Guillaume then checked the accuracy of the translation and necessary adjustments were made to the Estonian version of the survey.

² Both in the RSQ and in the RBQ, P refers to a person who is completing the questionnaire.

Results

The Structure of the RBQ Items

My first task was to find out what is the underlying structure of the RBQ items across the described situations. On that purpose, a principal component factor analysis of the 68 RBQ items was conducted, followed by varimax rotation. In the analyses, 8 factors had an eigenvalue above 1 but the examination of scree-plot clearly suggested a six-factor solution accounting for 32.26% of the total variance of the RBQ items. The six factors if the RBQ were the following:

The 1st factor could be labeled as “**Positive, physically animated behaviours**” (RBQ F1) because it contains items that refer to positive, animated, energetic and cheerful behaviours that oppose the the expression of irritation, sarcasm, criticism, hostility, blame and self-pity. The RBQ items with the highest loading on this factor were rbq015 - *Shows high enthusiasm and a high energy level* (.59), rbq049 - *Behaves in a cheerful manner* (.52), rbq011 - *Is physically animated; moves around* (.40) and rbq034. *Expresses hostility (no matter toward whom or what)* (-.52).

The 2nd factor of the RBQ, labeled as “**Detached, verbally unskilled behaviour**” (RBQ F2), could be best described by items that refer to behaviour manifesting in self-reservation, unexpressiveness, disconnectedness, and awkwardness. Items that load highly on the factor are rbq008 - *Is reserved and unexpressive. (e.g., expresses little affect; acts in a stiff, formal manner)* (.55), rbq060 - *Seems detached from the situation* (.45), rbq013 - *Exhibits an awkward interpersonal style (e.g., seems to have difficulty knowing what to say, mumbles, fails to respond to conversational advances)* (.44), rbq052 - *Offers advice* (-.55), and rbq053 - *Speaks fluently and expresses ideas well* (-.64).

The 3rd factor was labeled as “**Behaviours that seem like one pressures oneself to get the needed advice**” (RBQ F3) because it contains items that together imply to situations where a person seeks advice from others, but doesn't seem to enjoy asking it. The RBQ items with the highest loadings on this factor are rbq029 - *Seeks advice* (.51), rbq001 - *Interviews others (if present) (e.g., asks a series of questions)*(.44), rbq003 - *Seems interested in what someone had to say* (.44), rbq066 - *Acts in a self-indulgent manner. (e.g., spending, eating, or drinking)* (-.50) and rbq042. *Seems to enjoy the situation* (-.51).

The 4th factor labeled as “**Intellectually expressive and physically inanimate behaviours**” (RBQ F4) is characterized by the RBQ items that refer to behaviours that allow

the demonstration of intellectual or cognitive abilities as opposed to physical activities. The RBQ items that load highly on the factor are rbq041- *Shows interest in intellectual or cognitive matters. (discusses an intellectual idea in detail or with enthusiasm)* ($r = .67$), rbq023 - *Exhibits a high degree of intelligence* (.55) and rbq065 - *Engages in physical activity. (e.g., works up a sweat)* (-.59).

The 5th factor, labeled as “**Uncomfortable goal-oriented concentration demanding behaviours**” (RBQ F5) contains descriptors that imply goal-oriented ambitious behaviours that demand concentration and oppose relaxed and comfortable actions. The items with the highest factor loadings on the factor are rbq064 - *Concentrates on or works hard at a task* (.45), rbq006 - *Appears to be relaxed and comfortable* (-.43), and rbq009 - *Laughs frequently* (-.57).

Finally, the 6th factor – “**Sabotaging non-empathetic antisocial behaviours**” (RBQ F6) relates to items that refer to antisocial behaviours in which someone tries to undermine or sabotage others and keeps a distance. These behaviours are the opposite of being interested in others, liking others, being empathetic or warm towards others and making contact with them. The RBQ items that load highly on the factor are rbq033 - *Tries to undermine, sabotage or obstruct* (.45), rbq040 - *Keeps other(s) at a distance; avoids development of any sort of interpersonal relationship* (.45), rbq058 - *Makes or approaches physical contact with other(s)* (-.60), rbq024 - *Expresses sympathy. (to anyone, i.e., including conversational references)* (-.60), and rbq032 - *Expresses warmth. (to anyone, e.g., including affectionate references to close friends, etc.)* (-.62).

Relationships Between the RSQ and RBQ Dimensions

A similar principal component factor analysis was conducted on the RSQ items in my seminar paper (Elme, 2014). There the analysis also revealed a six-factor structure solution that accounted for 30.61% of the total variance of the RSQ items. The factors were: 1. “Suppressing, hostile situations”, 2. “Goal-oriented realistic situations that demand leadership qualities,” 3. “Anxious situations demanding no responsibility,” 4. “Situations that allow demonstration of intellect,” 5. “Goal-oriented situations that demand rationality,” and 6. “Situations with few behavioural limitations.”

Once I had identified the number of factors underlying both the RSQ and the RBQ data sets, I created factor scores to represent individual’s placement on the factors in order to use them in subsequent analyses.

The correlations between the factor scores (or dimensions) of the RSQ and the RBQ ranged from $-.36$ to $.53$ (see Table 1). The highest correlation ($r = .53, p < .001$) was observed between the fourth factors of the RBQ and the RSQ that both dealt with situations and behaviours that allow the demonstration of intellectual or cognitive abilities. In general, however, it can be concluded that the correlations between the factor scores of the RSQ and the RBQ are not too high (absolute median correlation $r = .19$) which means that both instruments provide unique and specific information about the situations not captured by the other.

The correlations also provide a proof to the aforementioned arguments about the correlations of the components of the triad remaining lower than 20 to $.40$, which in turn supports the existence of the personality triad. (e.g. Kenrick & Funder, 1988; Murtha, Kanfer & Ackerman, 1996; Richard, Bond, & Stokes-Zoota, 2003; Mischel, 2004; Funder, 2009; Fast & Funder, 2010; Funder et al; 2012).

Table 1: *Correlations between the RSQ and the RBQ factor scores*

The RSQ	The RBQ					
	RBQ F1	RBQ F2	RBQ F3	RBQ F4	RBQ F5	RBQ F6
RSQ F1	-.24***	.02	.08	-.14**	-.11	.29***
RSQ F2	.03	-.34***	.36***	-.24***	.22***	.01
RSQ F3	-.36***	.24***	-.30***	-.11	.14*	.11
RSQ F4	-.36***	-.36***	.13*	.53***	-.10	-.11*
RSQ F5	.05	.29***	.33***	.18**	.31***	.38***
RSQ F6	.15**	-.21***	-.23	.05	-.04	-.18**

Note. The RSQ = The Riverside Situational Q-sort; The RBQ = The Riverside Behavioral Q-sort.

*** $p < .001$ ** $p < .01$ * $p < .05$

Relationships between Behaviors, Properties of Situations, and Personality Traits

To find out, how behaviours and psychological properties of different situations relate to the Big Five personality traits – both at the level of domain and facet scales – the correlations between the three constructs were examined.

The RBQ. The correlations between the factor scores of the RBQ and the domain scores of NEO-PI-3 ranged from $-.26$ to $.21$ and between the facet scores of NEO-PI-3 from $-.33$ to $.23$ (see Table 2). Significant relationships between many domain and facet scores of the NEO-PI-3 and the RBQ factors: RBQ F1 “Positive, physically animated behaviours”, RBQ F2 “Detached, verbally unskilled antisocial behaviours”, RBQ F3 “Behaviours that seem like one pressures oneself to get the needed advice” and RBQ F6 “Sabotaging non-empathetic antisocial behaviours” were found. Altogether, 38 correlations out of 210 correlation pairs (30 NEO-PI-3 facet scales + 5 domain scales x 6 RBQ factors) were significant at $p < .05$.

The correlations between RBQ F1 “Positive, physically animated behaviours” and the NEO-PI-3 domain scales: Neuroticism ($-.26, p < .001$) and Extraversion ($r = .21, p < .004$); and the facet scales: N3 “Depression” ($r = -.33, p < .001$), N4 “Self-Consciousness” ($r = -.23, p < .001$), suggest, that people higher in the Neuroticism domain and its facets: Depression and Self-Consciousness, tended to see their behaviours in the situations they encountered as less positive, energetic, animated and cheerful. They described their behavioural acts as more related to negative associations, such as expressing irritation, sarcasm, criticism, hostility, blame and self-pity, whereas people higher in Extraversion evaluated their situations in the opposite manner to the aforesaid group.

The relationships between the RBQ F2 “Detached, verbally unskilled behaviour”, the NEO-domains Agreeableness ($r = .20, p < .006$) and Extraversion ($r = -.19, p < .006$) show, that people lower in Extraversion and higher in Agreeableness tended to describe their behaviours as higher in self-reservation, awkwardness and disconnectedness from others and lower in expressing good verbal skills (e.g., fluency, loudness etc.) and offering help to others.

The correlations between RBQ F3 “Behaviours that seem like one pressures oneself to get the needed advice” showed a negative correlation with the NEO-PI-3 Openness to Experience domain ($r = -.15, p < .036$), which indicates, that people higher in Openness tended to describe their behaviour as less seeking for advice from others and as more seeming to enjoy the situation while acting in a more self-indulgent manner.

Table 2. Correlations between the facet and domain scales of the NEO-PI-3 and the six factors of the RBQ.

NEO-PI-3	The RBQ					
	RBQ F1	RBQ F2	RBQ F3	RBQ F4	RBQ F5	RBQ F6
Domain Scales						
Neuroticism	-.26***	-.07	.07	-.09	.08	-.01
Extraversion	.21**	-.19*	-.08	-.04	-.01	.03
Openness	.06	.03	-.15*	.07	.09	-.05
Agreeableness	-.01	.20*	.03	.01	-.07	-.25***
Conscientiousness	.14	-.02	-.03	.02	.04	-.13*
Facet Scales						
N1:Anxiety	-.20**	-.11	.03	-.14*	.01	-.05
N2:Angry Hostility	-.15*	-.14*	.01	-.14	.12	.03
N3:Depression	-.33***	-.01	.05	-.03	.06	.01
N4:Self-Consciousness	-.23**	.09	.12	.03	.02	-.00
N5:Impulsiveness	-.12	-.15*	-.00	-.08	.06	-.06
N6:Vulnerability	-.19**	.01	.12	-.04	.12	-.01
E1:Warmth	.17*	-.05	.03	-.13	.03	-.09
E2:Gregariousness	.15*	-.05	.02	-.03	-.09	.01
E3:Assertiveness	.14*	-.23**	-.11	-.02	.07	.11
E4:Activity	.18**	-.19**	-.04	.02	.09	.06
E5:Excitement-Seeking	.12	-.19**	-.09	-.01	.00	.15*
E6:Positive Emotion	.11	-.10	-.14	-.03	-.15*	-.14
O1:Fantasy	-.03	.07	-.04	.03	-.07	-.03
O2:Aesthetics	.00	.01	-.13	.04	.13	-.02
O3:Feelings	-.01	-.01	-.17*	-.09	.10	-.11
O4:Actions	.19**	.06	-.06	.08	.11	.01
O5:Ideas	.03	-.09	-.05	.18*	.15*	.02
O6:Values	.05	.11	-.13	-.00	-.13	-.09
A1:Trust	.12	.16*	-.03	-.04	-.05	-.24**
A2:Straightforwardness	-.01	.10	.01	.07	-.03	-.16*
A3:Altruism	.14	.10	.03	-.08	-.05	-.28***
A4:Compliance	-.00	.23**	.06	.12	-.09	-.07
A5:Modesty	-.12	.13	.05	.00	-.06	-.17*
A6:Tender-Mindedness	-.13	.10	.03	-.06	.01	-.13
C1:Competence	.21**	-.06	-.09	-.02	-.03	-.04
C2:Order	.06	-.05	-.07	-.07	.02	-.04
C3:Dutifulness	.01	.00	.06	.02	.02	-.18*
C4:Achievement Striving	.12	-.09	.04	.08	.13	-.02
C5:Self-Discipline	.21**	.00	-.03	.05	-.01	-.11
C6:Deliberation	-.02	.12	-.01	-.00	.04	-.19**

Note. The RBQ = The Riverside Behavioral Q-Sort; The NEO-PI-3 = The NEO Personality Inventory-3.

*** $p < .001$ ** $p < .01$ * $p < .05$

The correlations between RBQ F6 “Sabotaging non-empathetic antisocial behaviours”, the NEO-domain Agreeableness ($r = -.25, p < .000$) and its facet A3 “Altruism” ($r = -.28, p < .000$) imply that more agreeable and altruistic people tended to interpret their behaviours as showing more interest in others, being more empathetic or warm towards others and making more contact with others (both eye and physical contact). They rated their actions lower in attempts to undermine or sabotage others and low in keeping distance.

The RSQ. There were less significant correlations between the factor scores of the RSQ (Elme, 2014) and the domain and facet scales of the NEO-PI-3, only 15 correlations out of 210 correlation pairs were statistically significant at $p < .05$. The correlations between the RSQ and the NEO-PI-3 domain scales ranged from $-.17$ to $.19$ and between the RSQ and the NEO-PI-3 facet scales from $-.21$ to $.19$ (see Table 3).

Significant correlations were found between several NEO-PI-3 scales and three factors of the RSQ, namely: RSQ F1 “Suppressing, hostile situations”, RSQ F3 “Anxious situations demanding no responsibility and RSQ F5 “Goal-oriented situations that demand rationality”.

The correlation between the RSQ F1 “Suppressing, hostile situations” and Openness to Experience ($r = -.17, p < .018$) suggests that people higher in Openness described the situations they had encountered as being less uncertain, hostile and threatening with less chance of someone feeling blamed, criticized or dominated over.

The highest correlation among NEO-PI-3 domain scales was found between Openness and RSQ F3 “Anxious situations demanding no responsibility ($r = -.19, p < .009$). The correlation shows that people higher in the Openness domain also tended to see their situations as less anxiety-inducing and emotionally threatening while their observed situations tended to expect more talking and engagement in some kind of jobs.

The relationships of RSQ F5 “Goal-oriented situations that demand rationality” with the NEO-PI-3 domain scale Extraversion ($r = -.17, p < .017$) and most notably with its facet scale E6: Positive Emotions ($r = -.21, p < .001$) reveals that more extraverted people and especially those who tend to have more positive emotions tended to describe their situations as more evoking warmth, compassion, romance and allowing the development of close interpersonal or even romantic relationships. They also saw their situations as less needing of rationality of demanding decision-making.

Table 3. Correlations between the facet and domain scales of the NEO-PI-3 and the six factors of the RSQ.

NEO-PI-3	The RSQ					
	RSQ F1	RSQ F2	RSQ F3	RSQ F4	RSQ F5	RSQ F6
Domain Scales						
Neuroticism	.00	-.01	.10	.08	.07	-.09
Extraversion	-.06	.04	-.05	-.04	-.17*	.08
Openness	-.17*	-.02	.19**	-.04	-.06	.11
Agreeableness	-.04	-.07	.03	.01	-.04	.03
Conscientiousness	.01	.02	-.12	.02	-.14	.02
Facet Scales						
N1:Anxiety	-.02	-.01	.04	.03	-.04	-.09
N2:Angry Hostility	.01	.03	.07	.03	.02	-.06
N3:Depression	.011	.00	.19**	.13	.14*	-.07
N4:Self-Consciousness	.08	-.04	.09	.09	.14	-.12
N5:Impulsiveness	-.01	-.02	.05	.05	-.07	.01
N6:Vulnerability	-.06	.00	.01	.05	.14*	-.11
E1:Warmth	-.08	.06	-.03	-.11	-.16*	.05
E2:Gregariousness	-.08	-.07	-.03	-.05	-.09	-.06
E3:Assertiveness	.01	.05	-.06	.01	-.12	.11
E4:Activity	-.05	.11	-.04	.01	-.08	.06
E5:Excitement-Seeking	-.08	.11	.04	-.08	-.06	.06
E6:Positive Emotion	.02	-.09	-.08	.02	-.21**	.10
O1:Fantasy	-.07	-.10	.09	-.01	-.12	.02
O2:Aesthetics	-.11	-.02	.17*	-.03	-.03	.13
O3:Feelings	-.10	-.04	.08	-.11	-.16*	.08
O4:Actions	-.14	.08	.13	-.05	.08	-.02
O5:Ideas	-.18*	.12	.08	.05	.03	.16*
O6:Values	-.03	-.20**	.14	-.05	-.04	.01
A1:Trust	-.12	-.07	.05	-.10	-.04	.13
A2:Straightforwardness	.03	-.05	-.08	.08	-.05	-.02
A3:Altruism	-.10	-.01	-.11	-.12	-.13	.10
A4:Compliance	-.03	-.09	.05	-.00	.09	-.05
A5:Modesty	.05	-.05	.05	.07	-.02	-.11
A6:Tender-Mindedness	-.02	-.02	.15*	.07	-.02	.10
C1:Competence	.02	.07	-.09	-.05	-.13	.12
C2:Order	-.00	-.03	-.07	-.01	-.13	-.05
C3:Dutifulness	.02	.04	-.12	.10	-.10	-.02
C4:Achievement Striving	.01	.09	-.05	.06	-.05	.02
C5:Self-Discipline	.05	-.04	-.10	-.01	-.15*	.05
C6:Deliberation	-.05	-.04	-.11	-.01	-.04	-.02

Note. The RSQ = The Riverside Situational Q-Sort; The NEO-PI-3 = The NEO Personality Inventory-3.

*** $p < .001$ ** $p < .01$ * $p < .05$

Predicting Behaviour from Personality Traits and Properties of Situations

Finally, I aimed to find out how much of the variability in behaviour (using the RBQ factor scores) can be accounted for by situational evaluations (measured by the RSQ) and the basic personality traits. Since personality traits have shown to substantially vary both across age (Costa et al., 2000) and gender (Schmitt, Realo, Voracek, & Allik, 2008), these two variables were also included in the analyses.

Table 4. The results of the multiple regression analyses (betas) predicting behavior from situational assessments, age and gender (Model 1) and from personality traits (Model 2)

	RBQ1		RBQ2		RBQ3		RBQ4	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
RSQ F1	-.29***	-.29***	.02	.03	.07	.07	-.20***	-.18***
RSQ F2	-.01	-.02	-.35***	-.33***	.34***	.35***	-.23***	-.23***
RSQ F3	-.34***	-.31***	.24***	.23***	-.31***	-.32***	-.12*	-.13*
RSQ F4	-.36***	-.34***	-.41***	-.41***	.15*	.13*	.51***	.52***
RSQ F5	.08	.11	.27***	.26***	.31***	.31***	.22***	.23***
RSQ F6	.13	.10	-.27***	-.27***	-.25***	-.24***	.03	.02
Age	.04	.05	.14**	.11*	.01	.02	.12*	.11*
Gender	-.01	.01	.02	.02	-.06	-.10	-.13*	-.11
Neuroticism		-.15*		-.11		.09		-.13
Extraversion		.12		-.14*		.04		-.04
Openness		-.00		.04		-.03		.10
Agreeableness		-.02		.14*		.13*		-.02
Conscientiousness		.02		.02		-.00		-.02
Adjusted R ²	33.27%	36.83%	42.85%	46.69%	40.01%	40.23%	44.27%	44.87%

	RBQ5		RBQ6	
	Model 1	Model 2	Model 1	Model 2
RSQ F1	-.20**	-.19**	.29***	.28***
RSQ F2	.18**	.17**	.06	.04
RSQ F3	.18**	.18**	.12	.13*
RSQ F4	-.09	-.11	-.12	-.10
RSQ F5	.36***	.38***	.42***	.43***
RSQ F6	-.03	-.03	-.14*	-.15*
Age	.10	.11	-.04	-.02
Gender	.05	.03	-.03	.03
Neuroticism		.13		-.13
Extraversion		.03		.08
Openness		.06		-.02
Agreeableness		-.06		-.22***
Conscientiousness		.16*		-.11
Adjusted R ²	22.91%	24.03%	27.55%	33.14%

Thus, in the first model (see Table 4), each of the RBQ factors was predicted by the six RSQ factors as well as by age and gender of the respondents. In Model 2, five main personality traits were added to the model.

As can be seen from Table 4, the amount of variance accounted for by all variables in the model, varied from 24% in case of RBQ F5: „Uncomfortable goal-oriented concentration demanding behaviours“ to 46.7% for RBQ F2: “Detached, verbally unskilled behaviour.“ The incremental value of personality traits in predicting behaviour over situational evaluations, however, was relatively minor, accounting for – on the average – only 2.5% of the variance. The largest amount variance accounted by personality traits (5.6%) occurred in case of RBQ F6: „Sabotaging non-empathetic antisocial behaviours“ with Agreeableness being the third strongest predictor ($\beta = -.22$) among all variables included in the model. Because the basis of the RSQ and the RBQ evaluations were the same (e.g., the same described situations), it is most likely the reason that the situational component had a stronger influence to the behavioural variability than personality traits.

Discussion

The aim of the current study was to research the meaningful relationships between the three components of the personality triad – the behaviours, the situations and the personality properties.

In order to do that, the first task of the study was to find a meaningful internal structure of the RBQ that would reveal the items that coexisted the most in the behavioural evaluations of the participants. The study showed a 6-factor structure that explained 32.26% of the total variance of the RBQ items. This finding was somewhat similar to the finding conducted with the data of the RSQ (see Elme, 2014). Although the comparison of the factors of both of the instruments revealed a significant correlation between the fourth factors of both the RBQ and the RSQ ($r = .53, p < .001$) that both described the situations and behaviours that allow the demonstration of intellectual or cognitive abilities, the absolute median correlation of $r = .19$ shows a moderate relationship between the two tools. The correlation shows the fact that the tools are designed to measure slightly different constructs (i.e. the RBQ is meant to describe one's behaviour and the RSQ the situation) and that they both provide unique and specific information about the participants' situations independent from each other. As already mentioned, the moderate correlations between the factors derived from situational and behavioural evaluations also provide a proof to the theory about the existence of the personality triad. (e.g. Kenrick & Funder, 1988; Murtha, Kanfer & Ackerman, 1996; Richard, Bond, & Stokes-Zoota, 2003; Mischel, 2004; Funder, 2009; Fast & Funder, 2010; Funder et al; 2012).

To achieve the main goal of the study, the research combined the situational measurement tool (the RSQ) and the behavioural measurement tool (the RBQ) with the personality inventory (NEO PI-3) – similarly to Sherman, Nave & Funder (2010/2013).

The study results indicated that the RBQ factors were more significantly related to the NEO-PI-3 domain and facet scales than the RSQ factors. It is logical, that personalities and behavioural evaluations interact with each other in a more meaningful manner than do the situational evaluations and the personality characteristics, because situational evaluations stem partially from the situational properties that play a great role in how the person perceives his or her situations (Mischel & Shoda, 1995, Funder, 2009; Sherman, Nave & Funder, 2013).

The results found for the RBQ factors, indicate, for example, that people higher in Neuroticism, Depression (N3) and Self-Consciousness (N6), tended to view their behaviours in the encountered situations as expressing more irritation, sarcasm, criticism, hostility, blame and self-pity, whereas people higher in Extraversion tended to evaluate their behaviours in the opposite manner. The findings that link Neuroticism and negative mood, quite well coincide with the current finding (e.g. Costa & McCrae, 1980; Furr & Funder, 1998). Also the findings that connect Extraversion to positive affect, supports the current results (Lucas & Fujita, 2000; Lucas & Baird, 2004).

Furthermore, more agreeable (A) and altruistic (A3) people tended to interpret their behaviours as showing more interest in others, being more empathetic or warm towards others and making more contact with others. This result very well coincides with the findings of previous works, where agreeable people are more altruistic, empathetic, higher in pro-social motivation and show higher levels of interest in social interaction (e.g. Berry & Hansen, 2000; Koole et al., 2001; Graziano et al., 2007; Cuperman & Ickes, 2009 Leikas, Lönnqvist & Verkasalo, 2012).

There were some results that emerged from the correlations to the RBQ that were rather interesting. For example, the fact that more agreeable (A) participants tended to describe their behaviours as higher in self-reservation, awkwardness and disconnectedness from others and lower in expressing good verbal skills and offering help to others, suggests that people higher in Agreeableness are quite critical about their behaviour. Within this factor, however, people higher in Extraversion exhibited the opposite patterns.

One of the relationships between situational evaluations and personality properties revealed that people higher in Extraversion tended to describe their situations as more

evoking warmth, compassion, romance and allowing the development of close interpersonal or even romantic relationships. Sherman, Nave & Funder (2013), however did not see any significant relationships between people higher in Extraversion and their situational evaluations.

An interesting finding suggests, that people higher in Openness described their situations as being less uncertain, hostile and threatening, while their observed situations tended to expect more talking and engagement in some kind of jobs. This result is quite different from the findings described by Sherman, Nave & Funder (2013), where persons who scored high on Openness tended to view their situations as more containing intellectual and aesthetic stimuli.

The study also measured how much of the behavioural variability could be explained by situational evaluations, personality properties and by age and gender. The results revealed, that when the model contained all of the variables, the amount of variance varied from 24% to 46.7%. Situational evaluations were the strongest predictors of the behavioural variance. On the average, only 2.5% of the total variance was accounted by personality traits. As already mentioned, the cause of this can be explained by the fact that the behavioural and situational evaluations were based on the same situation and the data obtained with NEO-PI-3 was, in that sense, a standalone variable.

This study can be concluded first with the notion that the RBQ is a valuable measurement tool that is applicable in the Estonian context and can be used to meaningfully measure the behavioural evaluations of at least the student sample. Secondly, significant relationships between all the components of the personality triad emerged from the study. Thirdly, the RSQ and the RBQ constructs seem more significantly related to each other than they are to the NEO-PI-3.

Study limitations

The first limitation of the study is that the sample consists of only undergraduate students who mostly were under 30 years of age, which means that the generalization to the overall population is quite limited.

The second limitation is in using only self-reports, which means that the data obtained by the self-measurement instruments are compared to each other only and not to the actual situations or behaviours (Funder, 2001). Also, people might lack sufficient awareness of the situation, their behaviour and their personalities, or they might not be willing to reveal the

“truth” about the characteristics of the situations or their behaviour in them, or won't care to be thorough enough in their responses. (Furr & Funder, 2004; Fast & Funder, 2010)

Thirdly, the tests won't consider the participants' physical or psychological state while taking the test (e.g. their tiredness, their mood, health factors etc.) nor the environmental factors (e.g. other people present, noise level in the room, visual distractions, etc.).

The fourth limitation concerns the situational and behavioural variety. There are many types of behaviours that the construct does not measure well enough (Fast & Funder, 2010)³.

The fifth limitation is the structure of the study. Namely, two components were contextually more related (e.g. the behavioural evaluations and the situational evaluations) than the third (the personality), and therefore it may not be possible to achieve the measuring of all the three components equally.

Future Directions

The current study succeeded in gathering a wide range of situational data from students, measuring the applicability of the RBQ instrument in Estonian context and finding the significant relationships between the components of the triad.

It would also be good to find out, how much of the situational and behavioural evaluations were influenced by the situational properties and how much the personality tendencies played a role. In that sense, an *in situ* study would be reasonable.

Also, comparison of the Estonian data with the data obtained in different countries will be a future assignment.

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³ To see the limitations of the study that used the RSQ, see (Elme, 2014)

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