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## **Explaining everyday behaviours and situational context by personality metatraits and higher-order values**

Skimina, Ewa ; Ciecuch, Jan

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DOI: <https://doi.org/10.1002/per.2230>

Posted at the Zurich Open Repository and Archive, University of Zurich

ZORA URL: <https://doi.org/10.5167/uzh-182627>

Journal Article

Accepted Version

Originally published at:

Skimina, Ewa; Ciecuch, Jan (2020). Explaining everyday behaviours and situational context by personality metatraits and higher-order values. *European Journal of Personality*, 34(1):29-59.

DOI: <https://doi.org/10.1002/per.2230>

Running head: EXPLAINING EVERYDAY BEHAVIORS

**Explaining Everyday Behaviors and Situational Context by Personality Metatraits and  
Higher-Order Values**

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Funding: The data collection was supported by Grant 2014/14/M/HS6/00919 from the National Science Centre, Poland. The work of Ewa Skimina was supported by Grant 2018/28/T/HS6/00224 from the National Science Centre, Poland. The work of Jan Cieciuch was supported by the University Research Priority Program Social Networks of the University of Zurich.

## **Abstract**

In the current study we looked for the relations between broad personality dimensions (metatraits of personality and higher-order values) and everyday behaviors. We asked participants ( $N = 374$ ; aged 17 to 53,  $M_{\text{age}} = 23.72$ ) about their current behavior, followed by questions on situational context (company and perceived autonomy) 7 times per day for 7 consecutive days, using an experience sampling mobile app. This method allowed us to capture a wide range of descriptions of behavioral acts ( $n = 13,873$ ), which were then empirically categorized. Personality metatraits distinguished within the Circumplex of Personality Metatraits (i.e., Stability vs. Disinhibition, Plasticity vs. Passiveness, Integration vs. Disharmony, and Self-Restraint vs. Sensation-Seeking; Strus, Cieciuch, & Rowiński, 2014) and values from Schwartz et al.'s (2012) refined model (Openness to Change vs. Conservation and Self-Transcendence vs. Self-Enhancement) were measured by self-descriptive questionnaires. Multilevel logistic regressions with multiple predictors, including traits and values simultaneously, revealed significant effects or tendencies for 20 of the 35 categories of activities, five kinds of company, and perceived autonomy. The best predictors of activities and situational context were the higher-order values Openness to Change vs. Conservation.

*Keywords:* everyday behaviors, personality metatraits, higher-order values, autonomy, company

Personality is often defined as a system of individual differences in characteristic behaviors, emotions, and thoughts (e.g., Allport, 1961; McCrae & Costa, Jr, 2008). This definition, accepted by many personality investigators (e.g., Bleidorn, Hopwood, & Lucas, 2018; DeYoung, 2015; Hampson & Edmonds, 2018; Mõttus & Allerhand, 2018), identifies the relationships between personality dimensions and behavior as one of the crucial topics in personality research. There are various approaches to studying personality–behavior relations, and these can be summarized along two broad lines. The first one links particular dimensions of personality with specific behavioral acts that are thought to express these dimensions (e.g., Buss & Craik, 1983). Following approaches of this type, researchers usually focus on behaviors strongly related to one personality dimension and rather unrelated to other dimensions. Approaches of the second type aim to predict various behaviors by sets of different personality variables. This is in line with the assumption that behavioral acts can be associated with multiple personality dimensions (Paunonen, 2003). Continuing this tradition in our study, we aim to predict the frequency of everyday behaviors (activities) by a set of broad dimensions of personality.

We assume that behavior is typically a product of interaction between personality and situation (Funder, 2006, 2009). The idea of person–situation interaction can be embraced by focusing on an indirect effect of personality on behavior transmitted by shaping the situations that people find themselves in (Furr & Funder, in press). This process, called situational selection (Furr & Funder, in press) or personality–situation transactions (Wrzus, Wagner, & Riediger, 2016), can be described as follows: Individuals prefer to be in situations that provide opportunities for expressing their traits and motives, so they select, change, and create the situations they find themselves in on a daily basis based on their dispositions (Buss, 1987; Emmons & Diener, 1986). Therefore, of interest to personality psychologists are not only the

relations between personality tendencies and behavioral acts but also the relations between personality dimensions and situational contexts (e.g., social company).

The relations between personality tendencies and everyday behaviors and between personality tendencies and situational contexts are understudied despite their importance (Furr & Funder, in press). Nowadays, ambulatory assessment methods make it possible to analyze both the links between personality and behaviors and between personality and the situational context in the same study. To date, such studies have provided evidence for links between the Big Five personality traits and everyday activities and situational variables measured in real time (Mehl, Gosling, & Pennebaker, 2006; Rohrer & Lucas, 2018; Wilt & Revelle, 2017; Wrzus et al., 2016). Findings revealed, for instance, that people higher in Extraversion spend more time with friends than people lower in Extraversion. Similarly, Conscientiousness was positively related to engaging in work, and Openness to Experience was negatively related to watching TV. Recently, Mueller et al. (2019) found that personality–situation fit in terms of social company is related to higher momentary happiness.

All these studies have focused on the Big Five personality dimensions. The Big Five (Goldberg, 1990), also known as the Five Factor Model (FFM; McCrae & Costa, Jr., 2003), is a predominant taxonomy of personality traits. However, correlation analyses have shown that the five dimensions distinguished within the FFM are not orthogonal and that they can be reduced to higher-order factors (Digman, 1997), also called personality metatraits (DeYoung, Peterson, & Higgins, 2002). The discovery of two fundamental dimensions of personality may be considered a milestone as they correspond to many preexisting theoretical models (Cieciuch & Strus, 2017) and they may be associated with the functioning of biological systems (DeYoung, 2010; DeYoung & Gray, 2009; DeYoung et al., 2002). Therefore, we extended the existing studies on the links between personality and everyday behavior and situational contexts by focusing on personality metatraits.

Metatraits, as broad personality dimensions, are defined in a similar way as personality traits, namely, as “personality dimensions that correspond to individual differences in thoughts, feelings, and behavior” (Strus, Cieciuch, & Rowiński, 2014, p. 279). However, they refer to rather general patterns of behavior and experience (DeYoung, 2006). Thus, as general tendencies, personality metatraits may be potentially related to a range of everyday behaviors.

Besides traits, there is another category of personality dispositions expected to guide everyday behaviors and perceptions: value preferences. Defined as “guiding principles in life” (e.g., Schwartz, 2017), value preferences are variables that may be as important as traits in explaining daily behavior and situation selection. However, traits and values differ in nature and play different roles in the functioning of the personality system (e.g., Parks & Guay, 2009; Pozzebon & Ashton, 2009; Roccas et al., 2002; Vecchione, Alessandri, Roccas, & Caprara, 2019). For instance, Roccas et al. (2002) suggest that traits refer to dispositional proclivities to behave in certain ways, even unintentionally, whereas values refer to desirable goals to accomplish and are, therefore, motivational in nature. McAdams (1995) and McCrae et al. (2000) locate traits and values at different levels of the personality structure: Traits are biologically based and unconditional dispositions, whereas values are characteristic adaptations formed on the basis of dispositions and the social environment. Previous research has demonstrated that personality traits and value preferences are complementary constructs that can be combined to explain outcome variables (e.g., Grankvist & Kajonius, 2015; Pozzebon & Ashton, 2009; Skimina, Cieciuch, & Strus, 2018). Therefore, in this study, we use both personality metatraits and value preferences to predict everyday behaviors and context.

The present study continues the tradition of research on the relations between personality dimensions, activities, and situational context measured in real time by the experience sampling method (ESM). However, we expanded on existing studies (Wilt &

Revelle, 2017; Wrzus et al., 2016) in at least three ways and provide new insights as a result. First, instead of concentrating on the Big Five traits, we focused on the metatraits outlined in the recently developed Circumplex of Personality Metatraits (Strus et al., 2014; Strus & Cieciuch, 2017), a model with its roots in the Big Five model while overcoming some its associated problems.

Second, we also included a motivational aspect of personality, namely, values in the Schwartz model (Schwartz et al., 2012), thereby taking both traits and values into account in contrast to previous trait-focused research. Third, we took a broad set of everyday activities into account instead of focusing on a small number of selected activities. The pool of activities measured in this study was potentially unlimited as we asked an open-ended question and then categorized the responses empirically. Our approach enabled us to (a) indicate the activities in which participants engaged the most frequently, and (b) determine how many of these activities can be explained by personality metatraits and value preferences.

Besides activities, we also measured situational variables: company and perceived autonomy. Previous studies succeeded in the prediction of various kinds of company by the Big Five personality traits (Wilt & Revelle, 2017; Wrzus et al., 2016). However, perceived autonomy has not been included as a dependent variable in any of the previously conducted similar studies, in spite of the fact that it has been found an important situation characteristic. According to the Self-Determination Theory (SDT; Deci & Ryan, 2000), autonomy—defined as perception that one's activity was self-chosen—is one of the three basic psychological needs that is essential for understanding human behavior and relates to well-being. SDT assumes that the degree to which the need for autonomy is satisfied affects the manner of momentary trait expression (La Guardia & Ryan, 2007). Ching et al. (2014) showed, however, that perceived autonomy in daily situations does not moderate the strength of the relationships between personality traits and states. On the other hand, Converse, Juarez, and

Hennecke (2019) suggested that perceived autonomy can be of interest as a dependent variable. They noted that the potential contribution of individual differences to the quality of motivation has been ignored thus far by both theory and research. Converse et al. (2019) found a relationship between autonomous motivation and trait self-control. Hence, findings of this study may provide further insights into the associations between the quality of motivation in day-to-day activities and individual differences in terms of personality metatraits and higher-order values.

### **Personality Metatraits**

Personality metatraits are typically identified with the Two-Factor Model of personality (Cieciuch & Strus, 2017). The two broad personality dimensions were developed independently in two separate research traditions: questionnaire and psycholexical. They were first introduced in the questionnaire tradition by Digman (1997), who analyzed intercorrelations among the Big Five personality traits, resulting in the metatraits he termed Alpha and Beta. Alpha represents the shared variance of Emotional Stability, Agreeableness, and Conscientiousness, and Beta represents the shared variance of Extraversion and Openness/Intellect. DeYoung et al. (2002) proposed new labels for the two personality metatraits: Stability (for Alpha) and Plasticity (for Beta), and they suggested that the metatraits might be related to the serotonergic and dopaminergic systems, respectively. To Stability and Plasticity, DeYoung (2015) assigns important functions in the cybernetic system of personality—they reflect variation in the fundamental mechanisms: maintaining stability of ongoing functioning and goal protection, as well as exploration and integration of new experience with existing knowledge, respectively. In the psycholexical tradition, Saucier et al. (2014) found that only two basic factors replicate across languages and cultures. These two factors, termed Social Self-Regulation and Dynamism (Saucier et al., 2014), are largely similar to Alpha/Stability and Beta/Plasticity (Strus & Cieciuch, 2019).



The fact that the two basic personality dimensions turned out to be orthogonal (DeYoung, 2006) was used by Strus et al. (2014) to propose a model of personality metatraits that not only describes a structure of personality traits but also enables the integration of this description with a number of other models referring to various psychological variables. The Circumplex of Personality Metatraits (CPM) is based on the orthogonal dimensions Alpha/Stability and Beta/Plasticity. The two basic dimensions constitute a matrix which can accommodate additional metatraits distinguished in the model. The General Factor of Personality (GFP; Musek, 2007) is one of them. In the Circumplex of Personality Metatraits, the General Factor of Personality is located at the same level in the circumplex structure as Alpha/Stability and Beta/Plasticity (instead of above them) and it is called Gamma/Integration. The logic of the circumplex structure predicts a fourth metatrait, termed by Strus et al. (2014) Delta/Self-Restraint. Therefore, the model proposed by Strus et al. (2014) distinguishes four, rather than two, bipolar metatraits. They can be perceived as two pairs of orthogonal dimensions organizing the structure of personality. Because the opposite poles of the metatraits have a psychological meaning that goes beyond simple opposites, within the Circumplex of Personality Metatraits one can distinguish also eight unipolar metatraits. The Circumplex of Personality Metatraits is presented in Figure 1, and all metatraits postulated by the model are described in Table 1.

Figure 1

Table 1

Strus et al. (2014) distinguish eight metatraits organized within the Circumplex of Personality Metatraits. In this study, we combined the opposing metatraits into four bipolar dimensions: Alpha (Stability vs. Disinhibition), Beta (Plasticity vs. Passiveness), Gamma (Integration vs. Disharmony), and Delta (Self-Restraint vs. Sensation-Seeking).

Strus and Cieciuch (2017) confirmed that the Circumplex of Personality Metraits creates a space that accommodates many models and constructs from key psychological domains, for instance, the BIS/BAS dimensions (Gray, 1991, 1994), interpersonal traits (Wiggins, 1995), value preferences (Schwartz et al., 2012), and affect (Yik, 2009, 2010). Their findings suggest that the metraits distinguished within the Circumplex of Personality Metraits might be useful as predictors of various outcomes. Everyday behaviors may be one of them.

The current study is the first to examine the relationships between personality metraits (specifically in the Circumplex of Personality Metraits conceptualization), daily behaviors, and the situational context measured in real time. No previous research has provided any evidence for the links between metraits and situational cues or characteristics. There have been some studies that analyzed the relationships between Alpha/Stability and Beta/Plasticity and behaviors/activities; however, in those studies, behaviors were measured retrospectively (DeYoung, Peterson, Séguin, & Tremblay, 2008; Hirsh, DeYoung, & Peterson, 2009). The results from these studies do, however, provide some support for our expectations regarding the relations between metraits and everyday activities measured in real time. For instance, Hirsh et al. (2009) found that Plasticity is positively and Stability is negatively related to the frequency of various self-reported activities. The strongest correlations for Plasticity were found with such activities as being asked for help or advice by someone with a personal problem, planning a party, attending a public lecture, telling a joke, and giving a prepared talk or public recital (all positive,  $r_s = .28$  to  $.33$ ). Stability was most strongly related to trying to stop using alcohol or drugs, drinking alcohol or using drugs, swearing around other people, hanging up the phone on a friend or relative during an argument, and losing one's temper (all negative,  $r_s = -.26$  to  $-.29$ ). Plasticity was also

positively and Stability was negatively related to externalizing behavior in male adolescents (DeYoung et al., 2008) and to social network site activities (Liu & Campbell, 2017).

Skimina et al. (2018) analyzed relationships between traits and values measured at different levels of hierarchical structure and the frequencies of a long list of everyday activities. Frequencies of activities during the past year were measured retrospectively by the Oregon Avocational Interest Scales (ORAIS; Goldberg, 2010). The ORAIS includes items describing activities in various life domains, excluding work and school. Skimina et al. (2018) categorized these activities into 20 clusters, for instance, “Drank in a bar or night club” is an example of drinking and partying, “Cleaned the house” is an example of housekeeping, and “Read the comics to a child” is an example of childcare. The highest correlates of Alpha/Stability were found for the activities classified as household ( $r = .33$ ), drinking alcohol and partying ( $r = -.29$ ), gardening ( $r = .29$ ), religious practices ( $r = .26$ ), Internet dating ( $r = -.24$ ), and childcare ( $r = .24$ ), and the highest correlates of Beta/Plasticity were found for surfing the Internet ( $r = .45$ ), physical activity ( $r = .40$ ), traveling ( $r = .32$ ), reading ( $r = .39$ ), music ( $r = .31$ ), drinking alcohol and partying ( $r = .30$ ), game-playing ( $r = .28$ ), and creative hobbies ( $r = .31$ ).

The limited number of studies conducted with the purpose of analyzing the relationships between personality metatraits and specific behaviors might be a consequence of an expectation that the similarity of the predictor and the criterion in the range of generality increases correlation between the former and the latter (Funder, 2009). From this point of view, it is better to use narrow rather than broad personality constructs to predict specific behaviors. However, some studies suggest that metatraits might be comparable or even better than narrow traits in the prediction of some behaviors. For instance, Alessandri and Vecchione (2012) showed that Stability accounted for variance in job performance beyond that of the Big Five. In a study conducted by Skimina et al. (2018), Beta/Plasticity was related

to surfing the Internet and game-playing more strongly than any basic trait or facet of personality. Because the metatraits postulated by the Circumplex of Personality Metatraits reflect specific psychological meanings that go beyond the shared variance of lower-level traits (Strus & Ciecuch, 2017), they should be good predictors of daily activities and situational context. However, observable relations between metatraits and specific behaviors measured in real time should be rather small. This is because daily-life behavior is determined by many factors besides personality dispositions (Dreier, 2011; Kreitler, 2018).

### **Higher-Order Values**

The refined Schwartz (Schwartz, 2017; Schwartz et al., 2012) model of personal values is currently the most widely used value model in psychological research (Brosch & Sander, 2016). According to Schwartz and colleagues (2012), 19 basic values can be grouped into four higher-order values: Openness to Change, Conservation, Self-Transcendence, and Self-Enhancement. Openness to Change values reflect readiness for new ideas, actions, and experiences. In contrast, Conservation values reflect self-restriction, order, and change avoidance. Self-Transcendence values emphasize transcending one's own interests for the sake of others, whereas Self-Enhancement values emphasize pursuing one's own interests.

The four higher-order values form a quasi-circumplex. They are typically presented as two bipolar dimensions: Openness to Change vs. Conservation and Self-Transcendence vs. Self-Enhancement. In this study we continue this tradition and combine the four values into two dimensions.

No previous studies have focused on analyzing the relationships between higher-order values, everyday behaviors, and situational context. However, some studies revealed links between higher-order values and certain behaviors. For instance, Self-Transcendence values were positively and Self-Enhancement values were negatively related to helping behavior (Daniel, Bilgin, Brezina, Strohmeier, & Vainre, 2015). In another study, Openness to Change

values were positively related to change-oriented organizational citizenship behavior (Seppälä, Lipponen, Bardi, & Pirttilä-Backman, 2011).

Skimina et al. (2018) sought to uncover relationships between value preferences and the frequencies of various behaviors measured retrospectively. In their study, the highest behavioral correlates of the higher-order values were surfing the Internet ( $r = .38$  with Openness to Change,  $r = .23$  with Self-Enhancement values, and  $r = -.25$  with Conservation), physical activity ( $r = .29$  with Openness to Change and  $r = .20$  with Self-Enhancement values), drinking and partying ( $r = .27$  with Openness to Change,  $r = .28$  with Self-Enhancement,  $r = -.27$  with Conservation, and  $r = -.19$  with Self-Transcendence values), household duties ( $r = .28$  with Conservation,  $r = .39$  with Self-Transcendence, and  $r = -.21$  with Self-Enhancement values), and religious practices ( $r = .39$  with Conservation,  $r = .22$  with Self-Transcendence values, and  $r = -.23$  with Self-Enhancement values). Openness to Change values were also positively correlated with reading ( $r = .27$ ), traveling ( $r = .28$ ), fashion ( $r = .24$ ), and music ( $r = .22$ ). Conservation correlated positively with gardening ( $r = .23$ ) and understanding (e.g., watching educational channels on TV;  $r = .20$ ). These findings might serve as the point of departure for expectations regarding the possible relations between preferences of higher-order values and activities measured in real time.

### **Advantages of Open-Ended Measures of Behavior**

In self-report studies on relationships between personality and behavior, the closed-ended measures of behaviors dominate. They seem to be adequate in retrospective studies, in which the risk of recall bias is high. A participant is likely to be quite accurate when assessing how many times he or she engaged in a certain activity in a defined period of time (Goldberg, 2010). Responding to an open-ended question about past activities would become more difficult as the period of time to which the question refers expands. Therefore, in retrospective studies, it is not surprising that there are solely questionnaires asking about the frequency of

various behaviors (e.g., Hirsh et al., 2009; Skimina et al., 2018) instead of open-ended measures. One of the most important consequences of using this format of data collection is that the measured pool of behaviors is limited. A questionnaire cannot be too long, so researchers need to select a certain number of behaviors to be included. This implies that at the same time, researchers are deciding that many other behaviors will not be measured.

Measuring behaviors in real time provides researchers with the possibility to overcome this limitation. When a person is asked what he or she is doing precisely at the moment or what he or she was doing just before responding to the question, the risk of recall bias is largely reduced. This is a convenient situation to ask an open-ended question, that is, what *exactly* is/was a participant doing, which enables the researcher to capture *any* activity a participant may be engaged in. The larger the number of behaviors that are measured this way, the closer the results are to the pool of all possible human activities. In other words, by using an open-ended question, a researcher has the possibility to measure a theoretically unlimited pool of human behaviors. Although this seems to be a huge advantage of open-ended measures of behavior, closed-ended measures are still more popular, even in studies conducted in real time.

Typically, in experience sampling studies, participants are presented with a list of activities and they are instructed to choose the one that best describes what they are doing (e.g., Wilt & Revelle, 2017; Wrzus et al., 2016). This research design requires the list to be short to make this task easier for participants. As a consequence, the pool of measured activities is much smaller (e.g., fewer than 20) than the pool of activities measured in a retrospective questionnaire, which may even contain several hundred items. Using this format of questions makes the data easy to manage because responses are already categorized and can be used in quantitative analysis. However, we believe that replacing this type of question by an open-ended one is more valuable. The reasons are the following: By asking open-ended

questions, measurements can theoretically tap an unlimited pool of everyday actions. Additionally, the open-ended measures are more accurate because they enable participants to describe what they are actually doing—they do not need to restrict their response to a predefined list of categories (Boyd et al., 2015). Esses and Maio (2005) report other advantages of open-ended measures including the uncomplicated manner to complete them reported by participants and that the responses provided to the open-ended questions can be analyzed both qualitatively and quantitatively.

Hence, in this study, we used an open-ended question about real-time behavior. This allowed us to collect a large pool of activities which were then empirically categorized. It enabled us to describe the frequency with which participants engaged in various activities and to analyze the relationships between personality dispositions and the frequencies of a large number of activities.

### **Current Study**

The purpose of this study was to seek links between broad personality constructs (personality metatraits and higher-order personal values), everyday behaviors (activities), and situational contexts. Metatraits and preferences of higher-order values were measured as dispositions by traditional questionnaires, whereas activities and contextual variables were measured in real time by applying the experience sampling method. The current study overcomes a number of limitations of previous studies applying a similar approach. First, we included two types of personality constructs—personality traits and values—which enables us to compare them as predictors of everyday activities and context. Previous studies were focused only on personality traits, ignoring values. These two constructs are considered conceptually different from each other, and they are expected to differ also in the way they are related to behavior (e.g., McAdams, 1995; Parks & Guay, 2009; Roccas et al., 2002), therefore, it is worthwhile to include both of them in one model. Second, we were interested

in higher levels of personality organization, namely, metatraits and preferences of higher-order values. This way we can verify whether such broad personality constructs are as useful in predicting everyday activities as they are in integrating many constructs in personality psychology (Cieciuch & Strus, 2017; Strus & Cieciuch, 2017). Third, we used an open-ended question to ask about recent activity. This provided an opportunity to empirically categorize everyday activities, describe the frequency with which people engage in different activities on a daily basis, and include a large number of those activities in the analysis. Previous research analyzed links between personality traits and only a small number (i.e., 6 to 9) of activities (Rohrer & Lucas, 2018; Wilt & Revelle, 2017; Wrzus et al., 2016). Fourth, we included two situational variables: present company and perceived autonomy.

Rauthmann, Sherman, and Funder (2015) distinguish three basic kinds of situational variables: cues (composition information), characteristics (psychological meaning information), and classes (category information). According to this taxonomy, the situational variables included in this study represent two kinds of information. Present company, as an objectively quantifiable stimulus, is a situational cue, which means an element of the composition of situation. Perceived autonomy may be interpreted as a situational characteristic as it reflects the way in which an individual processes situational information and then uses it to describe situations. Individual's activity (which has been treated as situational cue in some previous studies; e.g., Wrzus et al., 2016), according to Rauthmann et al. should be perceived as a behavioral response rather than a part of the situation. From this perspective, our analysis involves links between broad personality constructs (metatraits and value preferences) and both everyday behaviors (activities) and their situational context. For the latter we distinguish an objective element of situation (company) and subjective characteristic of situation (perceived autonomy).



The current study was largely exploratory. We had no expectations regarding the number and the content of categories of behaviors to be distinguished and included in our analysis. Nevertheless, we could expect that the categories would represent broader classes of behaviors identified in previous studies, such as working, learning, household, socializing, or leisure (Csikszentmihalyi & Larson, 1984; Larson, Richards, Sims, & Dworkin, 2001; Skimina et al., 2017).

Based on the theoretical meaning of the constructs as well as the results of the study conducted by Skimina et al. (2018), we expected the following: Stability would be positively related to household duties and childcare. Plasticity would be positively related to learning, but also to various forms of spending spare time, such as surfing the Internet, physical activity, creative hobbies, listening to music, and so forth. Integration would be positively related to socializing. Self-Restraint seems to be related positively to working. The Openness to Change vs. Conservation value dimension would be positively related to reading, learning, and spending time with friends, and negatively related to household duties, religious practices, and watching TV. The Self-Transcendence vs. Self-Enhancement dimension of values would be linked positively to household duties and negatively to working and learning.

We also formulated some expectations regarding the links between personality dimensions and situational variables. We expected that Stability, Integration, and Self-Transcendence values would be positively related to the frequency of interactions with close-related people, such as family members whereas Plasticity and Openness to Change values would be positively related to interactions with friends and strangers. We also hypothesized that perceived autonomy would be positively related to Integration, which reflects intrapersonal harmony and self-control. Moreover, Integration is identified with well-being (Musek, 2007, 2017), which is associated with autonomy experienced during daily activities (Weinstein & Mermelstein, 2007). Autonomy could be also negatively related to Self-

Restraint, which reflects the tendency to conformism (Strus & Ciecuch, 2017). The hypotheses were not preregistered.

## Method

### Participants and Procedure

The sample was recruited by paid research assistants to participate in a three-wave study; each wave included an online survey and an experience sampling phase. Research assistants recruited participants from their relatives, friends, and acquaintances, and from respondents to advertisements published in social media. Participants received a voucher of 70 PLN (approximately equivalent to 18.50 USD) after completing all three waves of data collection. In the current study, only data from the first wave was utilized.<sup>1</sup> The study was confidential—the research assistants had no access to any survey or experience sampling data and the researchers had no access to participants' personal data.

Participants first filled out a set of questionnaires online and then took part in a one-week experience sampling phase. They downloaded a free mobile app (RealLife Exp) on their own mobile devices. They were prompted seven times per day at random times between 9:30 a.m. and 9:30 p.m., which amounted to 49 prompts per participant during the seven-day experience sampling phase. There was a minimum of 60 minutes between prompts. The prompts provided a link to a set of questions that participants were asked to answer. If they

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<sup>1</sup> The same dataset was used in two other studies, in which the authors analyzed responses provided by the same group of participants to different set of experience sampling items, not relevant to this study. The first of these studies has been published in: Skimina, E., Ciecuch, J., Schwartz, S. H., Davidov, E., & Algesheimer, R. (2018). Testing the circular structure and importance hierarchy of value states in real-time behaviors. *Journal of Research in Personality*, 74, 42–49. doi:10.1016/j.jrp.2018.02.001. The paper presents the results of analyses conducted on data collected with experience sampling items measuring value states (not relevant to this study) and data collected with PVQ-RR used as a measure of 19 basic values from the Schwartz model. The aim of the paper was to verify the circular structure of value states and to compare the importance hierarchies of value states and 19 value traits, which does not overlap with the current study. The other study is described as Study 2 in: Skimina, E., Ciecuch, J., Schwartz, S. H., Davidov, E., & Algesheimer, R. (2019). Behavioral signatures of values in retrospective and real-time self-report. *Frontiers in Psychology*, 10:281. doi:10.3389/fpsyg.2019.00281. In this study, the authors analyzed the responses provided to the open-ended question about activity in context of their relationships with the measures of value states. For the purpose of the study, the authors prepared a categorization system used for coding open-ended descriptions of behaviors in the current study.

did not respond within 45 minutes, the link became unavailable. Each question appeared on a separate screen.

From the 652 participants who downloaded the mobile application used in the experience sampling phase, we excluded those who missed the majority of planned prompts (> 60%) and those who did not fill out the online survey. The final sample consisted of 374 Polish individuals, 79% female, all Caucasian. Participants ranged in age from 17 to 53 with a mean of 23.72 and a standard deviation of 4.67. Each participant provided between 19 to 49 responses to prompts (37.1 per person on average), which resulted in a total of 13,873 records. The dataset and scripts used in this study can be accessed by following this link:

[https://osf.io/e8bkj/?view\\_only=3ce076b174614ba199036c7d69f6b319](https://osf.io/e8bkj/?view_only=3ce076b174614ba199036c7d69f6b319)

## **Measures**

**Personality metatraits.** Personality metatraits were measured by the Circumplex of Personality Metatraits Questionnaire – Short Form (CPM-Q-SF) which is a shortened version of the Circumplex of Personality Metatraits Questionnaire used by Strus and Ciecuch (2017) to operationalize the Circumplex of Personality Metatraits model. CPM-Q-SF consists of 72 items grouped in eight scales (nine items per scale) that represent eight unipolar metatraits postulated by the Circumplex of Personality Metatraits. Participants give responses on a 5-point Likert scale ranging from 1 (*completely disagree*) to 5 (*completely agree*). For the purpose of this study, we combined two scales representing the opposing poles of each of the four bipolar dimensions into one score. By subtracting the raw score on the Alpha-Minus/Disinhibition scale from the raw score on the Alpha-Plus/Stability scale we established one score for the Alpha/Stability vs. Disinhibition dimension. By subtracting the Beta-Minus/Passiveness raw score from the Beta-Plus/Plasticity raw score we established one score for the Beta/Plasticity vs. Passiveness dimension. Following this procedure, we computed difference scores for the Gamma/Integration vs. Disharmony and the Delta/Self-Restraint vs.

Sensation-Seeking dimensions. The higher the score, the closer to the pole designated by the first part of the dimension label; the lower the score, the closer to the pole designated by the second part of the dimension label.

**Higher-order values.** We used the Portrait Values Questionnaire – Revised (PVQ-RR; Schwartz, 2017) to measure four higher-order values distinguished in the Schwartz value model (Schwartz, 2017; Schwartz et al., 2012). The questionnaire consists of 57 items describing different people according to what is important to them. Respondents indicated how similar the person described in an item was to themselves, using a 6-point scale ranging from 1 (*not like me at all*) to 6 (*very much like me*).

To obtain scores for higher-order values, we grouped the values as proposed by Cieciuch, Davidov, Vecchione, Beierlein, and Schwartz (2014). To determine the score for Openness to Change, we computed a mean of items constituting the following PVQ-RR scales: Hedonism, Stimulation, Self-Direction-Action, and Self-Direction-Thought. To determine the score for Conservation, we computed a mean of items constituting the Humility, Conformity-Interpersonal, Conformity-Rules, Tradition, Security-Societal, Security-Personal, and Face scales. A score for Self-Transcendence was determined by calculating a mean of items constituting the Benevolence-Caring, Benevolence-Dependability, Universalism-Nature, Universalism-Tolerance, and Universalism-Concern scales. The score for Self-Enhancement was determined by calculating a mean of constituting the Achievement, Power-Resources, and Power-Dominance scales. Because the four higher-order values are organized by two bipolar dimensions, we then computed one score for each dimension in the same way as we did for personality metatraits. We subtracted the raw Conservation score from the raw Openness to Change score to derive one score for the Openness to Change vs. Conservation dimension and the raw Self-Enhancement score from

the raw Self-Transcendence score to derive one score for the Self-Transcendence vs. Self-Enhancement dimension.<sup>2</sup>

**Experience sampling measures.** The experience sampling form consisted of 16 questions, of which three were relevant to this study: One measured behavior/activity and two measured situational contexts. The first open-ended question measured recent activity: “What have you been doing during the past 15 minutes?” We used a conventional approach (Hsieh & Shannon, 2005) to code the responses provided to this question, namely, we derived coding categories from the data collected in this study. The pool of 13,873 responses provided to this open-ended question was first reduced to 646 by grouping together descriptions of the same behavioral acts which differed only in tense or gender. Then we asked two raters (a psychology undergraduate student and a psychology PhD student) to sort 646 cards with descriptions of behavioral acts with the aim to group them into approximately 100 categories. They were instructed to group together activities similar in terms of the way the activity was performed and the purpose of the activity (if provided). Based on the results of the sorting task, they prepared a list of 98 categories of everyday behaviors. The procedure for deriving this categorization is described in detail by Skimina, Ciecuch, Schwartz, Davidov, and Algesheimer (2019). For the purpose of this study, we used this categorization to code open-ended responses. We used 97 of the 98 categories (omitting the category *everyday shopping* because we found it indistinguishable from the category *shopping*). Then, by merging some similar and infrequent categories of activities in the dataset, we reduced the number of differentiated categories from 97 to 63. To give just a few examples, we merged categories such as *walking pets*, *caring for pets*, *playing with pets*, and *training pets* into *caring for pets* and categories such as *hosting friends*, *visiting friends*, and *meeting friends in a public place*

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<sup>2</sup> The online survey also included other measures not relevant to this study that appeared after PVQ-RR and CMP-Q-SF, so they did not affect the measurement of value preferences and personality metatraits).

into *spending time with friends*). The list of 63 activities and their short descriptions are presented in Appendix A.

The first of the two questions about the situational context provided information on a situational characteristic—perceived autonomy. It had two options: “This activity was imposed by another person or by the circumstances” (corresponding to extrinsic motivation; Deci & Ryan, 2000) or “This activity was my choice—I could either do or not do it” (corresponding to intrinsic motivation; Deci & Ryan, 2000). The second question asked about a situational cue—present company—and had a multiple-choice response format: *alone*, *partner/spouse*, *other family member*, *friend*, *colleague*, and *stranger*. The 13 additional items included in the ESM form which are not relevant to this study can be viewed by following this link: [https://osf.io/e8bkj/?view\\_only=3ce076b174614ba199036c7d69f6b319](https://osf.io/e8bkj/?view_only=3ce076b174614ba199036c7d69f6b319)

## Results

### Descriptive Statistics for the Questionnaire Measures

Descriptive statistics for the questionnaire measures were computed using PS IMAGO 4 (means, standard deviations, and correlations) and the *psych* (Revelle, 2017) package in R ( $\alpha$ ,  $\omega_g$ , and  $\omega_t$ ). In Table 2 we present the means, standard deviations, and reliability coefficients for the raw scores on the CPM-Q-SF and the PVQ-RR scales. We calculated Cronbach’s  $\alpha$  and McDonald’s (1978, 1999)  $\omega$  coefficients for all scales. Cronbach’s  $\alpha$  reflects the average inter-item correlation and the length of the scale, whereas McDonald’s  $\omega$  reflects the hierarchical structure of the scale. When a scale is multidimensional, one can decompose the scale variance into variance due to a general factor and variance due to a number of independent group factors. This leads to two measures of reliability:  $\omega_g$  (omega general) represents the percentage of the scale variance due to the general factor and  $\omega_t$  (omega total) represents the total amount of reliable variance in the scale (Revelle & Condon,

2018). When the scale is unidimensional,  $\omega_g$  and  $\omega_t$  are equal and they do not differ noticeably from Cronbach's  $\alpha$  (Revelle & Zinbarg, 2009).

Table 2

Because personality metatraits and higher-order values are broad constructs, we treated them as multidimensional and calculated both  $\omega_g$  and  $\omega_t$  coefficients for each scale. The results show high saturation by the general factor in almost every scale ( $\omega_g$  coefficients are relatively high). We observed the highest saturation by the general factor for Disharmony, Conservation, and Plasticity, and the lowest for Self-Restraint and Stability.

Table 3 presents the means, standard deviations, and zero-order correlations for the computed scores on the bipolar dimensions of personality metatraits and higher-order values. Correlations among personality metatraits reflect their circular structure (Strus et al., 2014). Correlations between metatraits and higher-order values are consistent with findings from previous studies (Strus & Cieciuch, 2017; Vecchione, Alessandri, Barbaranelli, & Caprara, 2011).

Table 3

### **Reliability of Categorization Systems**

To assess the reliability of the two sets of categories of activities, we calculated the Cohen's kappa statistic (McHugh, 2012). To provide statistical power of at least 80% with alpha set at less than .05, we calculated the minimum sample size for kappa following Bujang and Baharum's (2017) guidelines. We randomly selected two independent samples of 250 descriptions of activities from the pool of 13,873 responses provided to the open-ended question in this study. Next, we presented these two samples to two psychologists and we asked them to independently code the first sample using 97 categories and the second using 63 categories. To calculate the kappa coefficients we applied the *cohen.kappa* function in the *psych* R package. They were .81 for 97 categories and .88 for 63 categories. In both cases, the

kappa statistic was very satisfactory, especially taking into account the large numbers of categories.

### **Frequencies of Everyday Activities and Situational Context**

The responses to the open-ended question on recent behavior were coded using the categorization system consisting of 63 categories. We calculated two measures of frequency for each activity: observed proportion (which ignores the fact that records are nested within persons) and predicted probability (which takes the nested structure of the data into account). To calculate predicted probabilities, we first dummy coded activity variables and then entered each dummy-coded variable in a separate multilevel logistic regression conducted with the *lme4* package (Bates, Maechler, Bolker, & Walker, 2015) in R. We treated the data as having a two-level structure (responses nested within persons) and allowed effects to vary randomly across individuals. The log odds obtained by fitting unconditional logistic regressions for each category were transformed to predicted probabilities.

We excluded 26 rarely appearing categories of activities from further analysis (i.e., less than 50 times; equal to 0.4% of all descriptions of activities collected in this study with predicted probabilities for all of them equal to zero) and an unclassifiable category that grouped all unintelligible responses provided by the participants. The remaining 36 categories accounted for 95% of all open-ended descriptions of activities provided by participants. We grouped these activities into the broader categories that are used in other categorizations of activities derived from experience sampling data (Csikszentmihalyi & Larson, 1984; Larson et al., 2001; Skimina et al., 2017). The broader categories were working/studying, socializing, leisure, maintenance, and household. The categories religious practices and other constituted separate classifications.

Table 4 presents the observed proportions and predicted probabilities for 36 activities, for five broader categories of activities, and for the situational variables of autonomy and



company (in Appendix B we present correlations between behavioral variables, between situational variables, and between behavioral, situational, and personality variables). The predicted probabilities based on the results from multilevel logistic regressions might differ from observed proportions and may not necessarily sum to 1.00, which can be observed in Table 4. Participants reported a sense of autonomy approximately twice as often as a lack of it. On almost half of the occasions they claimed to be alone. It is apparent that the predicted probabilities for narrow categories of activities are very low, which is a consequence of distinguishing a large number of categories but also of between-person differences in reported types of activities.

Table 4

Figure 2 represents a visualization of the distribution of activity frequencies based on the observed proportions. It includes 35 categories of behaviors selected for further analysis and the category *other*. Activities assigned to the same broad category are blocked in the same color. Figure 2 shows that participants in this study spent much time working or studying. They were also often engaged in routine activities (maintenance). Socializing was reported relatively rarely.

Figure 2

In order to analyze the links between personality dimensions and behaviors, we conducted a series of models in which personality metatraits and higher-order values were used as predictors of categories of activities. In Figure 2, we indicate the activity categories for which significant personality (metatrait or value) predictors (we included also tendencies at the level  $p < .1$ ) were found by marking the category number with an ellipse. These accounted for 71% of all activities reported by participants.

### **Metatraits and Higher-Order Values as Predictors of Daily Activities and Context**

To verify our expectations regarding associations between metatraits and higher-order values and everyday activities, we conducted multilevel logistic regressions using maximum likelihood estimation with the *lme4* package (Bates et al., 2015) in R. The data were treated as having a two-level structure. For each dependent variable (autonomy, six categories of company, five broad and 35 narrow categories of activities, excluding the category *other*) we conducted two separate models, which resulted in 94 models. In each model, a dependent variable was predicted by two metatraits and two higher-order value dimensions simultaneously. We conducted two separate models for each dependent variable because of the structure of metatraits distinguished in the Circumplex of Personality Metatraits. This model introduces two pairs of orthogonal dimensions that organize personality: Stability vs. Disinhibition (Alpha) and Plasticity vs. Passiveness (Beta) or Integration vs. Disharmony (Gamma) and Self-Restraint vs. Sensation-Seeking (Delta). By separating two pairs of metatrait dimensions, we avoided including highly correlated constructs in one model. In the first model, each dependent variable was predicted by orthogonal dimensions of personality: Stability vs. Disinhibition and Plasticity vs. Passiveness. In the second model, they were replaced by the second pair of orthogonal dimensions, that is, Integration vs. Disharmony and Self-Restraint vs. Sensation-Seeking. Two dimensions of personal values were included in both models: Openness to Change vs. Conservation and Self-Transcendence vs. Self-Enhancement. By building two models for each dependent variable, we were able to assess two alternative pairs of basic dimensions of personality as predictors of everyday activities and situational context. We could also compare each of them with basic dimensions of value preferences. Following Wilt and Revelle's (2017) procedure, in each model all predictors were grand-mean centered.

We conducted power analysis for multilevel logistic regression models with four predictors, using the application by Olvera Astivia, Gadermann, and Guhn (2019). The app is

based on three R packages: *lme4* (Bates et al., 2015), *simglm* (LeBeau, 2019), and *paramtest* (Hughes, 2017). The simulation run by the app indicated power equal to 1.00 for each predictor.

We present results of multilevel logistic regressions in Tables 5 and 6. Table 5 shows results from models in which activities and situational context (autonomy and company) were predicted by Stability vs. Disinhibition, Plasticity vs. Passiveness, and two basic value dimensions, and Table 6 shows results from models with Integration vs. Disharmony, Self-Restraint vs. Sensation-Seeking, and two basic value dimensions as predictors. We report only results for dependent variables for which we found at least one significant effect or a tendency, that is, 20 categories of activities, autonomy, and five types of company.

A positive effect means that the frequency of a given behavior increases with the movement on the dimension from the pole indicated by the first part of the dimension label to the pole indicated by the second part of the dimension label. For example, a positive effect of the metatrait Alpha (Stability vs. Disinhibition) on cooking means that the closer a score is to Stability and the further away from Disinhibition, the more frequently a participant reported being engaged in cooking. A negative effect means that the frequency of a given behavior decreases with the movement on a personality dimension. For example, a negative effect of the values Openness to Change vs. Conservation on waiting means that the further away a score is from Openness to Change and the closer to Conservation, the more frequently a participant reported waiting.

In both tables we report odds ratios (ORs) for each predictor and  $R^2$  for models (Nakagawa & Schielzeth, 2013). The OR can be interpreted as the relative odds of reporting a given category associated with an increase of one unit in the predictor variable (Wilt & Revelle, 2017). An OR lower than 1 indicates a negative relationship. For instance,  $OR = 0.55$  for Openness to Change vs. Conservation values in the model of religious practices in Table 6

means that an increase of 1 unit above the mean level of Openness to Change vs. Conservation is related to a 45% decrease in the likelihood of being engaged in religious practices. An OR higher than 1 reflects a positive association. For instance, OR = 1.26 for Self-Restraint vs. Sensation-Seeking in the model of working in Table 6 implies that for a person scoring 1 unit above the mean level of Self-Restraint vs. Sensation-Seeking, the likelihood of being engaged in working was 26% higher than for a person scoring at the mean level of this metatrait. The latter effect was a statistical tendency. We decided to include tendencies ( $p < .1$ ) in this report because most of the dependent variables had very low predicted probability, resulting in a low chance of approaching statistical significance. The second reason for highlighting tendencies was the fact that this study was the first to test metatraits and higher-order values as predictors of everyday activities and situational context, so we wanted to identify all possible links which could be further verified in future research.

#### Table 5

#### Table 6

We found significant effects or tendencies for 20 out of 35 activities, representing all broader categories, that is working/studying, household, leisure, maintenance, and socializing. Significant effects and tendencies were found in models of autonomy and five types of company: alone, partner, family member, friend, and stranger. However, marginal  $R^2$ s suggest that fixed effects of all predictors explain a small part of variance of dependent variables. The largest portion of the variance was explained in models of religious practices (predicted negatively by Openness to Change vs. Conservation), spending time with family (predicted positively by Self-Transcendence vs. Self-Enhancement), participation in cultural events (predicted positively by Stability vs. Disinhibition), listening to music (predicted positively by Openness to Change vs. Conservation), and waiting (predicted positively by Plasticity vs.

Passiveness and negatively by Self-Restraint vs. Sensation-Seeking and Openness to Change vs. Conservation).

The broad category of working/studying activities was negatively related to Self-Transcendence vs. Self-Enhancement. At the level of narrow categories, working was positively related to Self-Restraint and studying was negatively related to Self-Transcendence vs. Self-Enhancement. Both relationships were in accordance with our expectations. We hypothesized that also Plasticity could be positively related to learning, but we did not find this effect when controlling for higher-order values (we only found a tendency in the zero-order regression model; see supplementary material).

The broad category of household activities and the narrow category of cleaning were positively related to Self-Transcendence vs. Self-Enhancement. Cooking was positively related to Stability and, weaker, to Integration (in the second model also negatively to Openness to Change vs. Conservation). All of these associations are consistent with our expectations and definitions of personality constructs.

Among leisure activities, Stability and Integration were negatively related to watching TV or films and playing computer games but also positively related to participating in cultural events and walking (only Integration). We expected that Plasticity could be associated with various forms of spending free time but we found only a negative tendency for reading (see supplementary material for positive associations found in zero-order regressions). Openness to Change vs. Conservation positively predicted the frequency of reading and listening to music (and also negatively predicted the frequency of watching TV in the second model).

The broad category of maintenance was negatively related to Self-Restraint vs. Sensation-Seeking and Openness to Change vs. Conservation. The same pattern of relations was found for eating and waiting. Plasticity was positively associated with traveling and waiting, and Integration was negatively associated with sleeping. Hygiene was negatively

related to Openness to Change vs. Conservation and getting ready was negatively related to Self-Restraint vs. Sensation-Seeking.

We found only few effects for socializing behaviors. Talking with friends was positively associated with Openness to Change vs. Conservation and negatively associated with Plasticity vs. Passiveness. Talking with one's partner was also negatively related to Plasticity. Spending time with the family was positively predicted by Self-Transcendence vs. Self-Enhancement.

The frequency of religious practices was associated negatively with Openness to Change vs. Conservation. This is one of the most significant effects found in this study and in line with expectations and findings from previous research (e.g., Schwartz & Huisman, 1995).

Autonomy was positively related to Integration and also Openness to Change vs. Conservation and Self-Transcendence vs. Self-Enhancement (in the first model). In models in which various types of company were predicted by personality, Stability was related positively to being with the partner and Plasticity to being with friends and strangers. Integration was positively related to being with the partner and Self-Restraint negatively related to being with friends. Openness to Change vs. Conservation was positively related to being alone and negatively to being with family members. The opposite pattern of relations was found for Self-Transcendence vs. Self-Enhancement, which was related positively to being with family and negatively to being alone. Most of these effects were consistent with expectations.

In Table 7 we summarize all significant effects and tendencies found in the multilevel logistic regression models. It is clearly evident that the two dimensions of personal values predicted more behavioral and situational variables than did the dimensions of personality metatraits.

## Table 7

Stability is defined as emotional, motivational, and social stability expressed in social adaptation and the ability to delay gratification. People higher in Stability reported being accompanied by partner, participating in cultural events, and preparing meals more often than people lower on this dimension. The opposite pole of this dimension, that is, Disinhibition, defined as antisocial tendencies, promoted playing computer games, watching TV, and being engaged in leisure activities.

Plasticity is defined as openness to new experiences and the tendency to explore, initiative in social relations, and orientation towards personal growth. People higher in Plasticity were more frequently engaged in traveling and waiting. They were more often accompanied by friends or strangers than people scoring lower in this metatrait. The opposite pole of this dimension, Passiveness (defined as apathy, inhibition, and submissiveness in social relations), was related to talking with one's partner, talking with friends, and reading.

Integration, defined as intrapersonal and interpersonal harmony, prosocial attitude, and effectiveness in attaining important goals, was positively associated with attending cultural events, walking, cooking, spending time with one's partner, and perceiving autonomy in one's actions. The opposing pole, Disharmony, defined as inaccessibility in interpersonal relationships, depressiveness, and pessimism, was related to being engaged in leisure activities such as watching TV, playing computer games, as well as sleeping and talking with one's partner.

Self-Restraint, defined as low emotionality, high behavioral control, and a tendency to adjust oneself, was related to being engaged in working. The opposing pole, Sensation-Seeking (impulsiveness, stimulation-seeking, and expansiveness in interpersonal relations) was associated with maintenance activities, such as eating, waiting, and getting ready to go out, as well as with being accompanied by friends.

People who preferred Openness to Change values over Conservation values were more often engaged in listening to music, reading, and talking with friends. They also reported being alone more often and feeling autonomous in their behavior. People who preferred Conservation values spent more time being engaged in religious practices, cooking, watching TV, and maintenance activities, such as eating, hygiene, and waiting. They were also more often accompanied by family members.

Participants higher in Self-Transcendence values spent more time with family and engaging in household activities, such as cleaning the house, but also watching TV. They experienced more autonomy in their everyday decisions. Participants who were closer to the opposing pole of this value dimension, that is, Self-Enhancement, were more often engaged in studying and personal hygiene. They were also more often alone or with strangers.

In Appendix B, we report correlations between raw scores on the opposite poles of each metatrait and value bipolar dimension and the frequencies of categories of activities (Table B3), as well as situational variables (Table B5). The analysis of these correlations can be useful in a deeper understanding of the results of this study, indicating which pole of a particular dimension had a greater impact on the uncovered effect.

## **Discussion**

An important aim of this study was to identify relationships between personality metatraits and higher-order values and everyday activities. Our approach differed from the approaches implemented in similar studies: Instead of presenting participants with a short list of activities, we asked them an open-ended question about what they had been doing before being prompted. This allowed us to collect more accurate responses because the participants described their actual behaviors, which we then empirically categorized. This enabled us to identify the categories of activities in which participants engaged the most frequently. On most occasions, participants reported working/studying or routine behaviors (maintenance).



Among leisure activities, the most frequent was watching TV/movies. It might be a bit surprising that surfing the Internet accounted for only 1.3% of all reported activities. The reason is that this category included only browsing websites. Other Internet behaviors were included in other categories: watching videos was categorized in watching TV/movies and networking in social interactions on the phone or Internet. A number of categories of activities were rarely reported, for instance, socializing, babysitting, physical activity, or creative hobbies. Therefore, using these activities as dependent variables in multilevel logistic regressions resulted in few significant effects, especially when multiple predictors were included. Hence, we present and discuss not only the significant effects but also the tendencies we uncovered.

We conducted multilevel logistic regressions for 35 categories of activities (accounting for 94.3% of all activities reported by participants), five broader categories of activities, six kinds of company, and perceived autonomy. Using metatraits and higher-order values as predictors, we found significant effects or tendencies for 20 categories of activities (accounting for 71% of all reports provided by participants), four categories of activities, five kinds of company, and autonomy. Thus, one can conclude that personality dimensions (metatraits and higher-order values) play a significant role in explaining everyday behavior.

However,  $R^2$ s in all models were small. This could be explained by the fact that everyday behavior depends on many factors. Relationships between personality and behavior found in different studies are usually weak. It is extremely hard to find a relationship between a personality construct and a single behavior, but it becomes easier, if it is possible to observe patterns of behavior across some period of time. When the time of observation is long, the effects can be larger. Moderate correlations of personality traits and values with frequencies of behaviors during a one-year period found by Skimina et al. (2018) can serve as an example. In the present study, we measured the frequencies of behaviors for only a period of one week.

This period of time could be too short to capture patterns of behaviors typical for participants. Moreover, we analyzed relationships between narrow categories of everyday activities and broad personality constructs. For this reason, instead of strong relations with one activity that is particularly specific for a given personality construct, we expected weaker links with multiple activities.

When analyzing small effects and, especially, tendencies, there is always a risk that we interpret a finding which is in fact a statistical artifact. To minimize this risk, we suggest to view the results of this study from a broader perspective. Instead of trying to explain each effect separately, we sought patterns in the sets of effects that were found. We related them to the theoretical meaning of metatraits and higher-order values and to the results from previous research. In general, we can say that the findings met our expectations and that the patterns of associations found for particular metatraits and higher-order values correspond with their theoretical meanings.

Alpha/Stability vs. Disinhibition is defined as a tendency to general social adaptation whereas the negative pole of this dimension represents antagonism towards people and social norms (Strus & Cieciuch, 2017). This metatrait was related to behaviors which, taken together, seem to correspond with its theoretical meaning. Participation in cultural events, being accompanied by a partner, and preparing meals create a convincing picture of a well-socialized person. None of analyzed categories of activities represented the antisocial tendencies that characterize Disinhibition. Negative relations with playing computer games and watching TV or movies suggest that less socialized people tend to spend more time engaging in indoor leisure activities which do not demand any company.

Beta/Plasticity vs. Passiveness represents the tendency to explore and openness to new experiences vs. apathy and stagnation (Strus & Cieciuch, 2017), which is well reflected in relations between this dimension and everyday activities and context. It was positively related

to behaviors that are characteristic for active people who engage in some kind of outdoor activities—people higher in this metatrait more frequently reported being on their way to some place and waiting for something. They could have been waiting for people to meet or things to happen (e.g., for a concert or show to start or for a taxi to pick them up). They were also more frequently in the company of friends and strangers. A lower level of Beta metatrait was related to reading and talking with friends and partner. These relationships do not perfectly correspond to the theoretical meaning of Passiveness. Reading could be potentially associated with cognitive openness. However, it can be also seen as a rather passive and not very exciting activity. Talking with friends but not being accompanied by them may suggest that people lower in Plasticity vs. Passiveness prefer talking to friends on the phone or via messenger applications rather than meeting them in person. Staying in touch with the partner and friends can be also interpreted as seeking support. People scoring high on Passiveness are submissive and sometimes even dependent. Talking to close ones can help them feel more safe and confident in everyday situations. In general, they prefer to maintain relationships with a group of established friends instead of meeting new people. On the contrary, people scoring higher on Plasticity like forming new acquaintanceships. This tendency was reflected in the positive association between Plasticity vs. Passiveness and the frequency of being in the company of strangers.

Gamma/Integration vs. Disharmony is more than simply a combination of Stability and Plasticity. This metatrait represents intrapersonal and interpersonal harmony, prosocial attitude, and effectiveness in attaining important goals. A person high in Gamma not only cares about social adaptation, but is characterized by well-being as well as a positive attitude towards people and the world (Strus & Cieciuch, 2017). Gamma's relationships with behavioral and situational variables show that Stability is its most important component. Like Stability, Integration was positively related to participating in cultural events, cooking, and

being accompanied by a partner, and negatively related to playing computer games and watching TV or movies. Integration was also positively related to walking and perceived autonomy, and negatively to talking with one's partner and sleeping. Walking, as a form of physical activity, can increase well-being (Bakir & Kangalil, 2017). The positive relationship between Integration and perceived autonomy was expected because this metatrait reflects internal harmony and self-direction, which promote intrinsic motivation in everyday life. Also, the negative association with sleeping is congruent with the theoretical meaning of Gamma. Its negative pole, Disharmony, reflects depressiveness, which is linked with sleeping (Haefel, 2017). Disharmony was also associated with talking to one's partner but not with being accompanied by one's partner, which may suggest that the conversations were held mostly on the phone or online. It is important to note that the category *talking with partner* included arguing. Disharmony is characterized by distrust and distance in interpersonal relationships. Possibly, Integration promotes spending time with one's partner in a pleasant way whereas Disharmony promotes having conversations, which can also be unpleasant. Another possible explanation for this association is that contacting the partner was a form of seeking support by a pessimistic and depressed person.

Also, Delta/Self-Restraint vs. Sensation-Seeking showed links with everyday behavior and situational context that correspond with its theoretical meaning. The only positive relation was found for being engaged in work, which is characteristic for people with high behavioral control and tendency to conformism (Strus & Ciecuch, 2017). Negative correlations describe a person high in Sensation-Seeking, defined as impulsiveness, stimulation-seeking, and expansiveness in interpersonal relations. Specifically, people higher in Sensation-Seeking more often reported getting ready to go out, waiting, being accompanied by friends, and eating. This pattern of behaviors is similar to the one related to Plasticity, which is situated close to Sensation-Seeking in the circular structure. Association with getting ready may

suggest paying more attention to one's appearance and more frequent eating may be related to impulsiveness.

Openness to Change values reflect readiness for new ideas, actions, and experiences (Schwartz et al., 2012). They embrace Self-Direction-Thought, Self-Direction-Action, Stimulation, and Hedonism. All relations with behavioral and situational variables found in this study can be considered meaningful expressions of these values. Listening to music and reading correlated with openness also in previous studies (e.g., Skimina et al., 2018). Talking with friends can express Stimulation or Hedonism, as well as openness to new ideas. Being alone and perceiving autonomy in everyday actions seem to express Self-Direction, which is an aspect of Openness to Change. Also negative relations correspond with the meaning of the opposite pole of Openness to Change vs. Conservation value dimension. Conservation values emphasize self-restriction, order, and avoiding change (Schwartz et al., 2012). They embrace Humility, Conformity-Interpersonal, Conformity-Rules, Tradition, Security-Societal, and Security-Personal. People who valued Conservation more reported more frequently activities that taken together create a picture of humble person, living a simple life in which family and religion play important roles. Specifically, these individuals were engaged in religious practices, cooking, watching TV or movies, waiting, personal hygiene, and eating. They were also more frequently accompanied by family members.

Self-Transcendence values reflect transcending one's own interests for the sake of others (Schwartz et al., 2012). These values include Benevolence-Caring, Benevolence-Dependability, Universalism-Concern, Universalism-Nature, and Universalism-Tolerance. The set of behavioral and situational variables of the Self-Transcendence values are similar to the set of variables associated with Conservation values, including spending time with family, household activities (cleaning), and watching TV or movies. Both Self-Transcendence and Conservation represent a focus on other people (Schwartz et al., 2012), which is reflected not

only in spending time with one's family, but also in engaging in household duties, a behavior that can be motivated by caring for household members. The difference between these two broad categories of values is reflected in other associations. While Conservation, located in the Self-Protection/Anxiety-Avoidance sector in the motivational circle, promoted religious practices, Self-Transcendence, located in the Growth/Anxiety-Free sector, promoted perceived autonomy. Although the results of this study do not say much about the relationship between religiosity and autonomy, they show some subtle differences between self-protective and anxiety-free social focus. Because we included the two value dimensions in the same regression models, we can say that associations with Conservation reflect a social focus somehow based on anxiety-avoidance, whereas associations with Self-Transcendence reflect a social focus combined with personal growth (anxiety-free).

The opposition of Self-Transcendence, that is Self-Enhancement, represents both personal focus and self-protection. These values include Achievement, Power-Dominance, and Power-Resources, and are defined as pursuing one's own interests. This goal was expressed by being involved in studying and personal hygiene, as well as spending time alone or in the company of strangers. Taken all together, they create a picture of an individualistic person focused on his or her development and body.

Our results demonstrate that personality dimensions such as metatraits and higher-order values can be interpreted as dispositions which are expressed in some general patterns of everyday behavior. All these results make sense theoretically, and they show that people differing in the levels of personality metatraits and value preferences, differ also in the frequencies of various kinds of day-to-day activities and situations they find themselves in.

Our findings are strengthened by the study design. Collecting data from participants going about their daily lives is ecologically valid. Although all measures were self-report, they overcame some problems specific for typical self-reports, that is, questionnaires. Because

activities and situational variables were measured in real time, the risk of recall bias was minimized. Also common method bias was reduced by collecting personality and behavioral data at different time points and in different ways. Using non-questionnaire methods in studies examining the relations between personality and behavior is still infrequent, especially in those with a focus on personal values (Fischer, 2017).

Another advantage of this study was the analysis of a large pool of categories of activities derived from the data. It allowed us to include categories of activities overlooked in previous studies, and by doing so revealed associations with personality constructs such as participating in cultural events, getting ready to go out, playing computer games, or waiting.

We also found some relationships between personality dispositions and the frequency of perceiving autonomy in one's actions. People differ in their strength of need for autonomy (Prentice, Halusic, & Sheldon, 2014) and also in the frequency with which they experience autonomy on daily basis. However, not much is known about correlates of these individual differences (Converse et al., 2019). The results of our current study indicate links between the frequency of experience of autonomy in everyday behaviors and general personality dispositions. One of these personality correlates is the metatrait Integration vs. Disharmony, which is interpreted as a general factor of mental health vs. internalizing psychological problems (Strus & Ciecuch, 2017). Strus and Ciecuch suggest that Integration could be underpinned by the sensitivity of behavioral inhibition system (BIS), which is responsible for reactions to anxiety-relevant cues (Gray, 1991). Perceived autonomy was also associated with Self-Transcendence and Openness to Change values, which are located in the anxiety-free sector of the motivational circle (Schwartz et al., 2012). All these results correspond to Miner and Dowson's (2008) findings demonstrating that anxiety is related to lower autonomy. Based on these results we can formulate a hypothesis for future research: Effectiveness of coping with anxiety is a mechanism that can explain relationships between autonomy and personality

dimensions. Noneffective coping with anxiety might lead to development of dispositions embraced by Disharmony (distrust in interpersonal relationships, depressiveness, pessimism, and proneness to suffer from psychological problems; Strus & Ciecuch, 2017). Based on these dispositions, an anxious person can formulate goals reflecting their core motivation of self-protection and anxiety-avoidance (Conservation and Self-Enhancement values, opposing to Openness to Change and Self-Transcendence values). To avoid punishment and humiliation, an anxious person can tend to avoid responsibility and choose dependency over autonomy.

One of our aims was to compare traits and values as predictors of everyday activities and situational contexts. Traits and values differ in their nature: Traits are considered as basic dispositions, to a large degree biologically determined, and values are considered as beliefs (general goals), developed on the basis of traits and their interactions with the environment (McAdams, 1995). There have been different hypotheses formulated regarding relationships between traits, values, and behavior, but not many studies have been conducted to verify them. According to Roccas et al. (2002), traits, as basic tendencies, are linked to behavior automatically whereas association between values and behavior requires cognitive control. Therefore, traits may be more strongly related to behaviors subject to little cognitive control, and values may be more strongly related to behaviors under cognitive, volitional control. Pozzebon and Ashton (2009) hypothesized that because traits directly involve enduring patterns of behavior, they may be better predictors of individually oriented behaviors, whereas values may be better predictors of collectively oriented behaviors because they refer to the relationship between a person and society. These two hypotheses are consistent with the view that only values have motivational character. Other researchers argue that also traits play a role in motivational processes. For instance, Parks and Guay (2009) proposed a model in which values are responsible for the goal content, whereas traits are involved in goal striving.



A similar standpoint was presented by Fleeson and Jayawickreme (2015) who suggested that traits are tools for accomplishing goals.

The theorizing summarized above can help to interpret the results of this study. In each regression model, two dimensions of traits and two dimensions of values were included as predictors of behavioral and situational variables. Some variables were predicted only by traits (e.g., participating in cultural events or playing computer games), other were predicted only by values (e.g., studying or religious practices), and some were predicted by both traits and values (e.g., reading or perceived autonomy). This shows that traits and values are distinct constructs that contribute to each other in the prediction of behavior and situational context. This also suggests that some behavioral and situational variables are better predicted by traits and others are better predicted by values. Activities predicted only by traits are indeed rather individualistic. These are mostly leisure activities with low influence on social functioning, such as participating in cultural events, walking, and playing computer games. Activities predicted only by values seem to have a larger impact on social life: studying, spending time with one's family, and religious practices—they are all important for the formulation of social judgments. These findings can be interpreted as supporting the hypothesis formulated by Pozzebon and Ashton (2009).

It is important to note that, in this study, participants were asked to describe their recent behavior themselves, thus the content of their responses could be affected by their dominating motives. For instance, a person high in achievement motivation is more prone to include agentic content in the descriptions of their actions (Abele & Wojciszke, 2014). As a result, descriptions of behavior provided by our participants may reflect values (motives, goals) more often than traits. In the current study participants were asked to mention only one main activity they were engaged in during the 15 minutes prior to the prompt. If traits influence behavior automatically and values shape behavior under cognitive control (Roccas

et al., 2002), then people can report more value-driven behaviors, of which they are more aware. This can explain why we found more significant effects and tendencies for value dimensions than for personality metatraits.

Finally, analyzing the content of Table 7, we can conclude that behavioral and situational variables related to opposing poles of value dimensions (related positively vs. negatively) rather reflect conflicting motives, whereas variables related to opposing poles of metatrait dimensions rather reflect differences in ways of acting. For instance, both poles of Gamma/Integration vs. Disharmony were related to leisure activities but there is a noticeable difference in the types of these activities. Integration was associated with activities reflecting openness to the world, requiring going out and investing one's energy (participating in cultural events and walking). Disharmony, in contrast, was associated with indoor activities (playing computer games and watching TV). Variables related positively to Self-Transcendence vs. Self-Enhancement seem to represent different goals (caring about other people) than variables negatively related to this dimension of values (pursuing one's own interests).

An interesting finding from this study is that one of our six predictors was substantially better than all the others—both in terms of the number of significant effects and tendencies and in terms of the average odd ratio in all regressions. The best performing predictor was the value dimension Openness to Change vs. Conservation. In light of theoretical models mentioned above, this result may suggest that this dimension is particularly important for motivating everyday behavior. Verification of this hypothesis requires further research.

It is important to note that the analyses presented in this paper were conducted on the data transformed into difference scores. We combined scores on the opposing poles of metatrait and value dimensions into one score reflecting the distance between the two poles.

This analytic strategy met the Reviewers' reservations as being prone to reduce the reliability and making the interpretation of findings less intuitive. As an alternative, conducting analyses on the raw scores has been suggested. We did not follow this recommendation for a few reasons. First, our intention was to include multiple predictors in one regression model in order to be able to compare metatraits and values. Including highly correlated predictors in one regression model is not recommended because of a substantial amount of shared variance, which is especially problematic in the case of the opposing poles of metatrait dimensions. Including both poles of the same dimension in one regression model results in an exclusion of a substantial part of the variance and causes difficulties in the interpretation of coefficients. Second, we found using difference scores in the case of our study justified by the assumptions of theoretical models of both personality metatraits and personal values. Strus et al. (2014) claim that one can distinguish four bipolar dimensions of personality metatraits, which enables locating people on these dimensions by determining to which pole of the dimension a particular person was closer. The same strategy is acceptable in the case of the quasi-circumplex model of values, in which, according to Schwartz et al. (2012), four higher-order values can be organized into two dimensions with contrasting values on both ends. Third, we calculated internal consistencies of difference scores, which suggest that the reliability did not decrease after data transformation (see Table 3).

### **Conclusions**

This study showed that broad personality tendencies (metatraits and higher-order values) significantly contribute to explaining the frequencies of a large pool of everyday activities, as well as the kind of company and perceived autonomy in one's action. The Openness to Change vs. Conservation value dimension was a better predictor of activities and context than the Self-Transcendence vs. Self-Enhancement value dimension and the metatraits distinguished within the Circumplex of Personality Metatraits. The results of this study also

showed that autonomy experienced in everyday actions is positively related to the metatrait Integration vs. Disharmony, which reflects mental health, and to anxiety-free motivation (included in two higher-order values: Self-Transcendence and Openness to Change).

### **Limitations**

The current study is not free of limitations. First, our sample did not have a large age variance. Wrzus et al. (2016) showed that some links between personality and contextual variables are moderated by age. In this study, we could not control the effect of age because the sample consisted mostly of younger people in their twenties. There is a possibility that we missed some effects that are specific for people from different age groups.

Another limitation is that we did not control for general life circumstances. Some activities strongly depend on certain life circumstances, for instance, caring for children depends on being a parent, studying depends on being a student, and so forth. It would be beneficial to conduct future research on samples homogenized in terms of similar life circumstances.

Also, all participants in this study were Polish. There is a possibility that results presented in this paper are specific to the Polish culture and will not replicate in similar studies conducted in other countries. In different cultures, different categorizations of everyday behaviors may be more adequate. Countries may also differ in frequencies of engagement in various kinds of activities. In turn, this can affect associations between personality dispositions and the behavioral and situational variables.

Including only measures of personality metatraits and not controlling for basic traits, like the Big Five, comprise another limitation of our study. As a consequence, we were not able to determine whether effects found in this study were due to the general dispositions or only their aspects that are better embraced by narrower constructs, such as the Big Five.

All measures used in this study were self-reports, which is also a limitation. Self-report has been criticized as the assessment method of personality traits, personal values, and, especially, behavior (e.g., Baumeister, Vohs, & Funder, 2007; Dobewall & Aavik, 2016; Fischer, 2017). Self-report inventories of personality metatraits and value preferences used in this study could be replaced by other-reports. Self-reports of activities and company in the experience sampling method could be replaced by acoustic samples automatically collected by an electronically activated recorder (EAR; Mehl, Pennebaker, Crow, Dabbs, & Price, 2001).

### **Acknowledgment**

The data collection was supported by Grant 2014/14/M/HS6/00919 from the National Science Centre, Poland. The work of Ewa Skimina was supported by Grant 2018/28/T/HS6/00224 from the National Science Centre, Poland. The work of Jan Ciecuch was supported by the University Research Priority Program Social Networks of the University of Zurich. We are grateful to William Revelle for his valuable advice in the statistical analysis.

### **Ethics Statement**

All of the authors declare no conflict of interest. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

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Table 1

*Description of the Metatraits Postulated by the Circumplex of Personality Metatraits (Strus & Cieciuch, 2017)*

Metatrait	Big Five configuration	Meaning
Delta-Plus (Self-Restraint)	N-, E-, O-, A+, C+	Low emotionality (both negative and positive), high behavior control, a tendency to adjust oneself (cf. Becker, 1999), conformism (cf. DeYoung et al., 2002), and conventionality
Alpha-Plus (Stability)	N-, A+, C+ (E <sub>0</sub> , O <sub>0</sub> )	Stability in the area of emotional, motivational, and social functioning (DeYoung et al., 2002), expressed as a general social adaptation tendency (Digman, 1997; Simsek, 2014), an ethical attitude towards the world, and the ability to delay gratification, motivate oneself, and perseverance (cf. Becker, 1999)
Gamma-Plus (Integration)	N-, E+, O+, A+, C+	Well-being, a warm and prosocial attitude towards people, both intra- and interpersonal harmony, openness to the world in all its richness, and effectiveness in attaining important goals (cf. Becker, 1999; Musek, 2007; Rushton & Irwing, 2011)
Beta-Plus (Plasticity)	E+, O+ (N <sub>0</sub> , A <sub>0</sub> , C <sub>0</sub> )	Cognitive and behavioral openness to change and engagement to new experiences, a tendency to explore (DeYoung et al., 2002), initiative and invention in social relations, as well as orientation towards personal growth (Digman, 1997; cf. Becker, 1999; Simsek, 2014)
Delta-Minus (Sensation-Seeking)	N+, E+, O+, A-, C-	Broadly defined impulsiveness, high emotional lability, stimulation-seeking, provocativeness and expansiveness in interpersonal relations (cf. Becker, 1999; DeYoung et al., 2008, 2010b; Zuckerman, 1979)
Alpha-Minus (Disinhibition)	N+, A-, C- (E <sub>0</sub> , O <sub>0</sub> )	High level of antisocial tendencies underpinned by unrestraint and a low frustration tolerance, as well as aggression and antagonism towards people, social norms, and obligations (cf. Becker, 1999; Settles et al., 2012)
Gamma-Minus (Disharmony)	N+, E-, O-, A-, C-	Inaccessibility (distrust, coldness, distance) in interpersonal relationships, depressiveness, pessimism, and a proneness to suffer from psychological problems (cf. Becker, 1999; Musek, 2007; Rushton & Irwing, 2011)
Beta-Minus (Passiveness)	E-, O- (N <sub>0</sub> , A <sub>0</sub> , C <sub>0</sub> )	Apathy, submissiveness in interpersonal relations, cognitive and behavioral passivity, as well as some type of inhibition and stagnation (cf. Becker, 1999)

*Note.* N = Neuroticism; E = Extraversion; O = Openness to Experience; A = Agreeableness; C =

Conscientiousness; + means positive pole of the trait; - means negative pole of the trait. Table reprinted from Strus and Cieciuch (2017).

Table 2

*Descriptive Statistics and Reliability Coefficients for the Raw Questionnaire Scores*

	<i>M</i>	<i>SD</i>	$\alpha$	$\omega_g$	$\omega_t$
Stability	3.79	0.47	.70	.50	.75
Plasticity	3.84	0.60	.83	.73	.86
Integration	3.95	0.52	.78	.58	.83
Self-Restraint	3.16	0.58	.77	.54	.82
Disinhibition	2.35	0.70	.81	.59	.87
Passiveness	2.38	0.60	.76	.61	.79
Disharmony	2.64	0.87	.86	.78	.90
Sensation-Seeking	3.05	0.72	.81	.66	.84
Openness to Change	4.72	0.61	.85	.58	.89
Conservation	4.03	0.73	.88	.74	.93
Self-Transcendence	4.70	0.64	.88	.70	.93
Self-Enhancement	3.72	0.80	.83	.68	.90

*Note.*  $\omega_g$  = omega general – the percentage of the variance of a scale that is due to a general factor, calculated when a scale is multidimensional;  $\omega_t$  = omega total – the total reliable variance of a scale estimated by a factor model.

Table 3

*Descriptive Statistics and Correlations for the Metatraits and Higher-Order Value Scales Transformed Into Scores Representing Bipolar Dimensions*

	<i>M</i>	<i>SD</i>	<i>r</i>	Zero-order correlations				
				2	3	4	5	6
1. Alpha (Stability vs. Disinhibition)	1.44	1.01	.84	.17	.66	.45	-.26	.48
2. Beta (Plasticity vs. Passiveness)	1.45	1.09	.87		.47	-.52	.51	.01
3. Gamma (Integration vs. Disharmony)	1.31	1.26	.89			.07	-.01	.26
4. Delta (Self-Restraint vs. Sensation-Seeking)	0.11	1.12	.86				-.61	.27
5. Openness to Change vs. Conservation	0.69	0.92	.86					-.36
6. Self-Transcendence vs. Self-Enhancement	0.97	1.06	.83					

*Note.*  $r$  = reliability of difference scores calculated using the following formula:  $r_{dd} = (\sigma_d^2 - \sigma_{ed}^2) / \sigma_d^2$

where  $\sigma_{ed}^2 = \sigma_f^2 (1 - r_{ff}) + \sigma_s^2 (1 - r_{ss})$ , with  $f$  representing the pole indicated by the first part of the label of a given dimension and  $s$  representing the pole indicated by the second part of the label of that dimension, and  $\sigma_d^2$  representing the variance of the difference score (McFarland & Ryan, 2006).

Table 4

*Observed Proportions and Predicted Probabilities for Activities and Situational Variables (Autonomy and Company)*

	Activities									Situational variables							
	%	Proba- bility		%	Proba- bility		%	Proba- bility		%	Proba- bility		%	Proba- bility		%	Proba- bility
<i>Working/ studying</i>	30.6	.27	<i>Household</i>	13.6	.12	<i>Socializing</i>	5.3	.03	<i>Leisure</i>	21.3	.20	<i>Maintenance</i>	23.1	.22	Autonomy	69.3	.72
Working	17.3	.08	Cooking	4.3	.04	Talking to friends	1.3	.01	Watching TV/movies	7.0	.05	Eating	9.7	.09			
Studying	7.1	.03	Shopping	4.1	.04	Time with friends	1.1	.01	Resting	3.9	.02	Traveling	7.0	.06	<i>Company</i>		
Lectures	5.1	.01	Cleaning	3.6	.03	Talking to family	1.0	.00	Reading	2.4	.01	Sleeping	3.0	.02	Alone	46.0	.46
Extra classes	0.7	.00	Babysitting	1.2	.00	Talking to partner	0.7	.00	Sports	1.6	.01	Hygiene	1.5	.01	Partner	14.9	.07
Exams	0.4	.00	Errands	0.4	.00	Time with family	0.7	.00	Walking	1.5	.01	Getting ready	0.8	.00	Family	11.4	.06
						Caring for pets	0.5	.00	Surfing the Internet	1.3	.00	Waiting	0.6	.00	Friend	18.0	.13
<i>Religious practices</i>	0.4	.00							Beauty treatment	1.1	.01	Medical care	0.5	.00	Colleague	10.6	.04
									Computer games	1.1	.00				Stranger	8.5	.04
<i>Other</i>	0.6	.00							Listening to music	0.6	.00						
									Creative hobby	0.4	.00						
									Cultural events	0.4	.00						

Table 5

*Results of Multilevel Logistic Regressions with Alpha/Stability vs. Disinhibition, Beta/Plasticity vs. Passiveness, and Higher-Order Values as Predictors of Activities, Autonomy, and Company*

	Alpha (Stability vs. Disinhibition)			Beta (Plasticity vs. Passiveness)			Openness to Change vs. Conservation			Self-Transcendence vs. Self-enhancement			R <sup>2</sup> GLMM(m)
	<i>b</i> (SE)	<i>p</i>	OR	<i>b</i> (SE)	<i>p</i>	OR	<i>b</i> (SE)	<i>p</i>	OR	<i>b</i> (SE)	<i>p</i>	OR	
<b>Activities</b>													
<i>Working/studying</i>	.05(.07)	.455	1.05	.00(.07)	.991	1.00	.07(.08)	.431	1.07	<b>-.13(.06)</b>	<b>.051</b>	<b>0.88</b>	.00
Working	.08(.13)	.513	1.08	-.09(.12)	.476	0.91	.01(.16)	.932	1.01	-.09(.12)	.422	0.91	.00
Studying	.05(.11)	.677	1.05	.14(.11)	.192	1.15	.02(.13)	.856	1.02	<b>-.25(.10)</b>	<b>.014</b>	<b>0.78</b>	.02
<i>Household</i>													
Cooking	.06(.05)	.189	1.06	-.06(.05)	.213	0.94	-.04(.06)	.446	0.96	<b>.09(.05)</b>	<b>.047</b>	<b>1.09</b>	.01
Cleaning	<b>.13(.06)</b>	<b>.044</b>	<b>1.14</b>	-.08(.06)	.210	0.92	-.06(.08)	.457	0.94	.04(.06)	.500	1.04	.01
	.02(.07)	.794	1.02	.02(.07)	.791	1.02	-.12(.08)	.123	0.89	.10(.06)	.108	1.11	.01
<i>Leisure</i>													
Watching TV/movies	<b>-.10(.04)</b>	<b>.033</b>	<b>0.90</b>	-.06(.04)	.185	0.94	.06(.05)	.305	1.06	<b>.08(.04)</b>	<b>.048</b>	<b>1.08</b>	.00
Reading	<b>-.24(.06)</b>	<b>&lt;.001</b>	<b>0.79</b>	-.09(.06)	.174	0.91	-.11(.08)	.177	0.90	<b>.11(.06)</b>	<b>.073</b>	<b>1.12</b>	.02
Music	.11(.11)	.313	1.12	<b>-.18(.10)</b>	<b>.091</b>	<b>0.84</b>	<b>.29(.13)</b>	<b>.025</b>	<b>1.34</b>	.16(.10)	.108	1.17	.01
Events	-.12(.17)	.474	0.89	.00(.18)	.983	1.00	<b>.40(.22)</b>	<b>.066</b>	<b>1.49</b>	-.07(.16)	.640	0.93	.04
Computer games	<b>.46(.24)</b>	<b>.051</b>	<b>1.58</b>	.29(.22)	.177	1.34	.04(.26)	.891	1.04	-.09(.20)	.637	0.91	.06
Walking	<b>-.42(.21)</b>	<b>.050</b>	<b>0.66</b>	-.02(.21)	.920	0.98	.26(.26)	.313	1.30	.26(.20)	.209	1.30	.02
	.11(.14)	.454	1.12	.18(.13)	.176	1.20	-.22(.17)	.183	0.80	.06(.13)	.662	1.06	.02
<i>Maintenance</i>													
Eating	-.04(.04)	.343	0.96	.06(.04)	.119	1.06	<b>-.08(.05)</b>	<b>.075</b>	<b>0.92</b>	-.03(.04)	.390	0.97	.00
Traveling	-.01(.05)	.818	0.99	.01(.05)	.876	1.01	-.07(.06)	.257	0.93	.04(.05)	.379	1.04	.00
Sleeping	.01(.06)	.833	1.01	<b>.14(.06)</b>	<b>.019</b>	<b>1.15</b>	-.06(.08)	.419	0.94	-.08(.06)	.166	0.92	.01
Hygiene	-.13(.09)	.137	0.88	-.08(.09)	.392	0.92	.13(.11)	.242	1.14	.00(.09)	.986	1.00	.01
Getting ready	.06(.10)	.587	1.06	-.01(.10)	.890	0.99	<b>-.28(.13)</b>	<b>.026</b>	<b>0.76</b>	-.15(.10)	.118	0.86	.02
Waiting	-.22(.14)	.121	0.80	.19(.14)	.174	1.21	-.15(.18)	.298	0.86	.00(.14)	.992	1.00	.01
	-.30(.19)	.114	0.74	<b>.39(.19)</b>	<b>.039</b>	<b>1.48</b>	<b>-.53(.23)</b>	<b>.025</b>	<b>0.59</b>	-.25(.19)	.180	0.78	.04
<i>Socializing</i>													
Talking with friend	-.03(.08)	.665	0.97	-.01(.08)	.872	0.99	.01(.09)	.909	1.01	.10(.07)	.159	1.11	.00
Talking with partner	.21(.14)	.123	1.23	<b>-.24(.13)</b>	<b>.081</b>	<b>0.79</b>	<b>.29(.16)</b>	<b>.075</b>	<b>1.34</b>	-.03(.13)	.840	0.97	.01
Time with family	-.15(.19)	.423	0.86	<b>-.32(.19)</b>	<b>.089</b>	<b>0.73</b>	.17(.23)	.472	1.19	.15(.18)	.417	1.16	.02
Religious practices	.28(.22)	.196	1.32	.20(.20)	.312	1.22	-.34(.25)	.174	0.71	.26(.19)	.183	1.30	.06
<b>Situational variables</b>													
Autonomy	.13(.22)	.552	1.14	.12(.20)	.546	1.13	<b>-.42(.25)</b>	<b>.094</b>	<b>0.66</b>	.15(.20)	.454	1.16	.05
<i>Company</i>													
Alone	.05(.06)	.416	1.05	-.06(.06)	.289	0.94	<b>.18(.07)</b>	<b>.012</b>	<b>1.20</b>	<b>.10(.05)</b>	<b>.065</b>	<b>1.11</b>	.01
Partner	.00(.04)	.968	1.00	-.05(.04)	.243	0.95	<b>.10(.05)</b>	<b>.061</b>	<b>1.11</b>	<b>-.10(.04)</b>	<b>.022</b>	<b>0.90</b>	.01
Family	<b>.20(.12)</b>	<b>.087</b>	<b>1.22</b>	-.12(.11)	.293	0.89	-.10(.14)	.503	0.90	.10(.11)	.362	1.11	.02
Friend	-.02(.10)	.820	0.98	.13(.09)	.149	1.14	<b>-.32(.12)</b>	<b>.006</b>	<b>0.73</b>	<b>.24(.09)</b>	<b>.007</b>	<b>1.27</b>	.03
Stranger	-.04(.08)	.612	0.96	<b>.14(.07)</b>	<b>.068</b>	<b>1.15</b>	.05(.09)	.612	1.05	.00(.07)	.962	1.00	.01
	.04(.11)	.710	1.04	<b>.22(.10)</b>	<b>.033</b>	<b>1.25</b>	-.14(.13)	.268	0.87	-.13(.10)	.199	0.88	.01

*Note.* OR = odd ratio;  $R^2_{\text{GLMM}(m)}$  = marginal  $R^2$  for generalized linear mixed-effects models. Significant effects and tendencies are reported in bold.

Table 6

*Results of Multilevel Logistic Regressions With Gamma/Integration vs. Disharmony, Delta/Self-Restraint vs. Sensation-Seeking, and Higher-Order Values as Predictors of Activities, Autonomy, and Company*

	Gamma (Integration vs. Disharmony)			Delta (Self-Restraint vs. Sensation-Seeking)			Openness to Change vs. Conservation			Self-Transcendence vs. Self-Enhancement			R <sup>2</sup> GLMM(m)
	<i>b</i> (SE)	<i>p</i>	OR	<i>b</i> (SE)	<i>p</i>	OR	<i>b</i> (SE)	<i>p</i>	OR	<i>b</i> (SE)	<i>p</i>	OR	
<b>Activities</b>													
<i>Working/studying</i>	.00(.05)	.975	1.00	.08(.07)	.200	1.08	.12(.08)	.149	1.13	<b>-.11(.06)</b>	<b>.068</b>	<b>0.90</b>	.01
Working	.06(.09)	.503	1.06	<b>.23(.12)</b>	<b>.051</b>	<b>1.26</b>	.10(.15)	.503	1.11	-.11(.11)	.303	0.90	.01
Studying	.00(.08)	.974	1.00	.00(.10)	.990	1.00	.11(.13)	.391	1.12	<b>-.21(.10)</b>	<b>.032</b>	<b>0.81</b>	.01
<i>Household</i>	.04(.03)	.242	1.04	.01(.05)	.823	1.01	-.09(.06)	.117	0.91	<b>.09(.04)</b>	<b>.036</b>	<b>1.09</b>	.01
Cooking	<b>.07(.05)</b>	<b>.099</b>	<b>1.07</b>	.01(.06)	.910	1.01	<b>-.13(.08)</b>	<b>.084</b>	<b>0.88</b>	.05(.06)	.385	1.05	.01
Cleaning	-.04(.05)	.398	0.96	.00(.06)	.964	1.00	-.11(.08)	.171	0.90	<b>.13(.06)</b>	<b>.032</b>	<b>1.14</b>	.01
<i>Leisure</i>	<b>-.06(.03)</b>	<b>.077</b>	<b>0.94</b>	.03(.04)	.467	1.03	.06(.05)	.300	1.06	.05(.04)	.238	1.05	.00
Watching TV/movies	<b>-.13(.05)</b>	<b>.005</b>	<b>0.88</b>	-.02(.06)	.731	0.98	<b>-.14(.08)</b>	<b>.076</b>	<b>0.87</b>	.03(.06)	.577	1.03	.01
Reading	.05(.07)	.487	1.05	.16(.10)	.105	1.17	<b>.26(.13)</b>	<b>.037</b>	<b>1.30</b>	.13(.09)	.144	1.14	.01
Music	-.11(.12)	.348	0.90	-.01(.17)	.963	0.99	<b>.41(.21)</b>	<b>.045</b>	<b>1.51</b>	-.09(.15)	.558	0.91	.04
Events	<b>.30(.16)</b>	<b>.062</b>	<b>1.35</b>	-.07(.20)	.722	0.93	.09(.26)	.733	1.09	.04(.19)	.823	1.04	.03
Computer games	<b>-.30(.15)</b>	<b>.049</b>	<b>0.74</b>	.07(.21)	.738	1.07	.38(.26)	.140	1.46	.16(.19)	.404	1.17	.02
Walking	<b>.19(.10)</b>	<b>.050</b>	<b>1.21</b>	-.07(.13)	.617	0.93	-.18(.17)	.271	0.84	.08(.12)	.501	1.08	.02
<i>Maintenance</i>	.00(.03)	.916	1.00	<b>-.10(.04)</b>	<b>.005</b>	<b>0.90</b>	<b>-.11(.05)</b>	<b>.014</b>	<b>0.90</b>	-.03(.03)	.409	0.97	.00
Eating	.02(.04)	.491	1.02	<b>-.12(.05)</b>	<b>.016</b>	<b>0.89</b>	<b>-.15(.06)</b>	<b>.013</b>	<b>0.86</b>	.04(.05)	.402	1.04	.00
Traveling	.05(.04)	.232	1.05	-.02(.06)	.702	0.98	.01(.07)	.862	1.01	-.06(.06)	.271	0.94	.00
Sleeping	<b>-.18(.06)</b>	<b>.005</b>	<b>0.84</b>	.01(.09)	.885	1.01	.12(.11)	.259	1.13	-.01(.08)	.888	0.99	.01
Hygiene	.03(.07)	.670	1.03	-.06(.10)	.548	0.94	<b>-.34(.12)</b>	<b>.006</b>	<b>0.71</b>	-.14(.09)	.129	0.87	.02
Getting ready	-.02(.10)	.806	0.98	<b>-.37(.14)</b>	<b>.008</b>	<b>0.69</b>	-.29(.18)	.103	0.75	-.02(.13)	.889	0.98	.02
Waiting	-.04(.13)	.773	0.96	<b>-.40(.18)</b>	<b>.026</b>	<b>0.67</b>	<b>-.51(.23)</b>	<b>.027</b>	<b>0.60</b>	-.26(.18)	.136	0.77	.04
<i>Socializing</i>	-.08(.05)	.132	0.92	.04(.07)	.606	1.04	.04(.09)	.651	1.04	.11(.07)	.103	1.12	.00
Talking with friend	-.09(.10)	.373	0.91	.21(.13)	.119	1.23	.26(.16)	.113	1.30	.03(.12)	.833	1.03	.01
Talking with partner	<b>-.26(.13)</b>	<b>.048</b>	<b>0.77</b>	.11(.18)	.567	1.12	.06(.22)	.778	1.06	.09(.17)	.590	1.09	.02
Time with family	.24(.15)	.115	1.27	.01(.20)	.965	1.01	-.26(.25)	.294	0.77	<b>.32(.19)</b>	<b>.086</b>	<b>1.38</b>	.05
Religious practices	.21(.15)	.170	1.23	-.27(.20)	.179	0.76	<b>-.59(.26)</b>	<b>.023</b>	<b>0.55</b>	.18(.19)	.325	1.20	.06
<b>Situational variables</b>													
Autonomy	<b>.08(.04)</b>	<b>.038</b>	<b>1.08</b>	-.03(.05)	.554	0.97	.10(.07)	.160	1.11	.08(.05)	.116	1.08	.01
<i>Company</i>													
Alone	-.05(.03)	.109	0.95	.06(.04)	.127	1.06	<b>.12(.05)</b>	<b>.026</b>	<b>1.13</b>	<b>-.09(.04)</b>	<b>.017</b>	<b>0.91</b>	.01
Partner	<b>.15(.08)</b>	<b>.071</b>	<b>1.16</b>	.06(.11)	.562	1.06	-.18(.14)	.213	0.84	.10(.10)	.326	0.91	.02
Family	.08(.07)	.232	1.08	-.10(.09)	.277	0.90	<b>-.30(.11)</b>	<b>.008</b>	<b>0.74</b>	<b>.24(.08)</b>	<b>.005</b>	<b>1.27</b>	.03
Friend	-.04(.05)	.421	0.96	<b>-.17(.07)</b>	<b>.021</b>	<b>0.84</b>	.03(.09)	.735	1.03	.03(.07)	.608	1.03	.01
Stranger	.05(.08)	.480	1.05	.06(.10)	.580	1.06	.04(.13)	.759	1.04	-.08(.09)	.380	0.92	.00



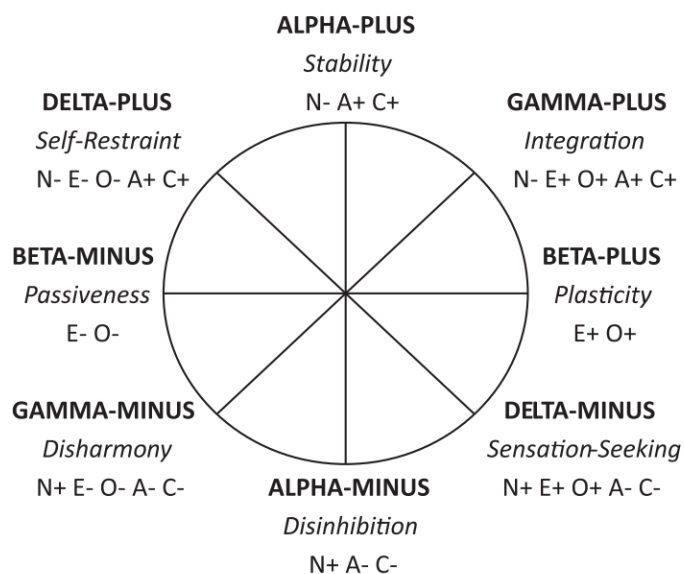
*Note.* OR = odd ratio;  $R^2_{\text{GLMM}(m)}$  = marginal  $R^2$  for generalized linear mixed-effects models. Significant effects and tendencies are reported in bold.

Table 7

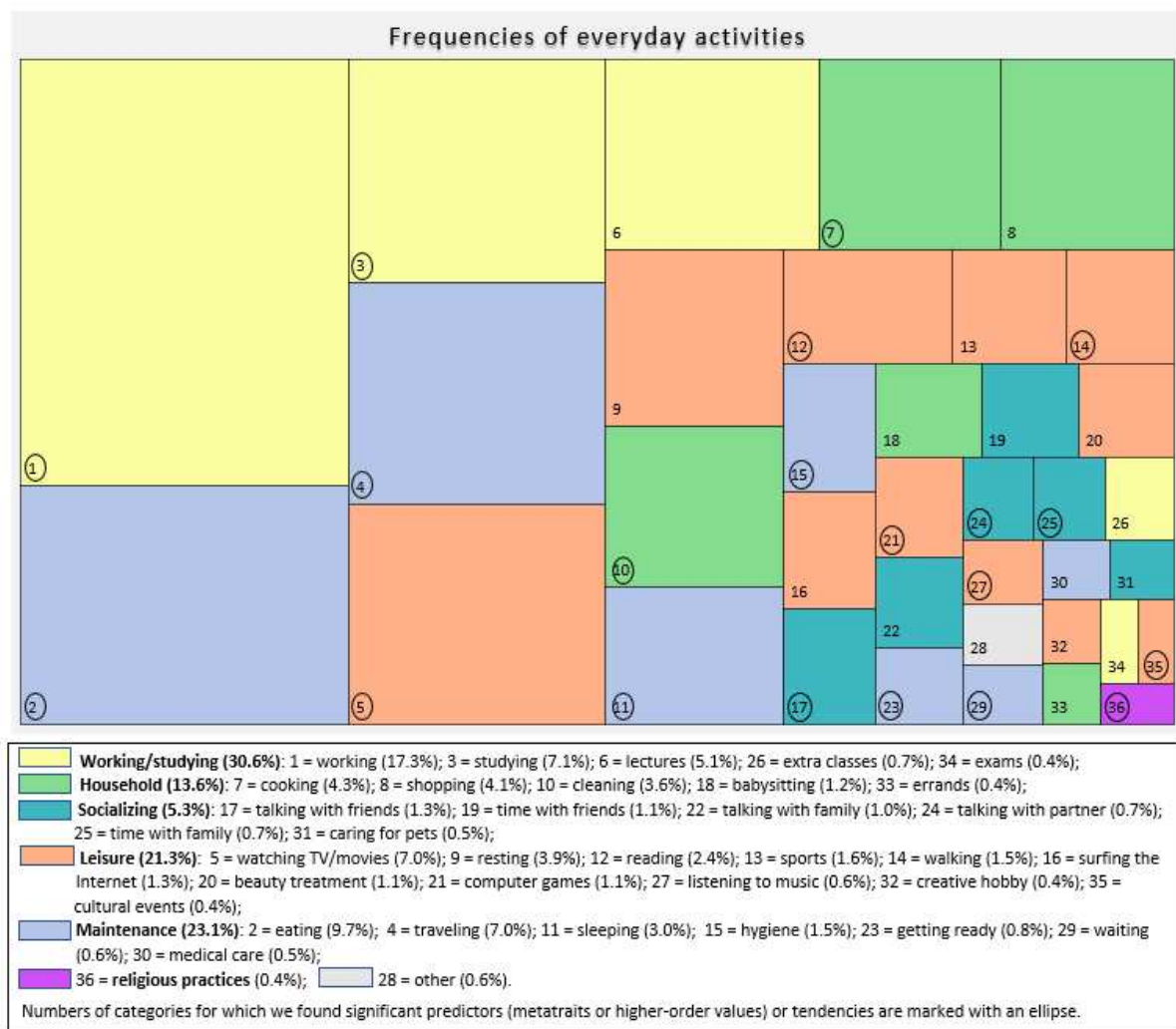
*Summary of Significant Effects and Tendencies Found in Multilevel Logistic Regressions*

Alpha (Stability vs. Disinhibition)	Beta (Plasticity vs. Passiveness)	Gamma (Integration vs. Disharmony)	Delta (Self-Restraint vs. Sensation-Seeking)	Openness to Change vs. Conservation	Self-Transcendence vs. Self-Enhancement
Positive associations					
Events Company: partner Cooking	Waiting Company: stranger Traveling Company: friend	Events Walking Company: partner Autonomy  Cooking	Working	Music Reading Talking with friend Company: alone  Autonomy	Time with family Company: family Cleaning Watching TV/movies Household Leisure Autonomy
Negative associations					
Computer games  Watching TV/movies Leisure	Talking with partner Talking with friend  Reading	Computer games  Talking with partner Sleeping Watching TV/movies Leisure	Waiting  Getting ready  Company: friend Eating  Maintenance	Waiting  Religious practices Company: family Hygiene  Eating Watching TV/movies Cooking Maintenance	Studying  Working/studying Company: alone Hygiene  Company: stranger

*Note.* Positive association means that the activity or situational variable was reported more frequently when the difference score was higher. The higher the difference score, the closer to the pole indicated by the first part of the label of a given dimension and the further away from the pole indicated by the second part of the label of that dimension. Negative association means that the activity or situational variable was reported more frequently when the difference score was lower. The lower the difference score, the further away from the pole indicated by the first part of the dimension label and the closer to the pole indicated by the second part of the dimension label.



*Figure 1.* Circumplex of Personality Metatraits. N = Neuroticism; E = Extraversion; O = Openness to Experience; A = Agreeableness; C = Conscientiousness; + indicates positive pole of the trait; - indicates negative pole of the trait. Figure reprinted from Strus, Ciecuch, and Rowiński (2014).



*Figure 2.* A map of everyday activities based on observed proportions.

## Appendix A

Table A1

*Categories of Behaviors Used for Coding Open-Ended Responses Provided by Participants to the Question “What Have You Been Doing During the Past 15 Minutes?”*

No	Category	Description
1	<i>in lecture</i>	participating in lectures/classes at university/school
2	<i>studying</i>	studying, preparing for lectures/classes/exams
3	<i>exams</i>	having exams
4	<i>extra classes</i>	participating in extra classes (e.g., foreign language course)
5	<i>working</i>	working, also from home
6	looking for a job	looking for a job, having a job interview
7	<i>babysitting</i>	caring for a child, e.g., feeding, dressing, playing with a child
8	caring for a family	e.g., preparing meals, shopping for family members
9	<i>caring for a pet</i>	e.g., feeding, playing with a pet
10	<i>eating</i>	eating
11	<i>sleeping</i>	sleeping, napping
12	<i>hygiene</i>	having shower, bathing, using toilet
13	<i>cleaning</i>	cleaning house
14	<i>cooking</i>	cooking, preparing meals
15	<i>[formal] errands</i>	errands at the post office, bank, etc.
16	informal errands	e.g., making an appointment at a beauty salon
17	<i>medical care</i>	seeing a doctor, caring for one’s health
18	<i>getting ready</i>	dressing, putting on make-up, etc.
19	do-it-yourself	repairing, redecorating
20	shopping online	doing shopping online
21	<i>shopping</i>	doing shopping
22	buying gifts	buying a present for someone
23	<i>cultural events</i>	seeing a movie/play, attending a concert, etc.
24	<i>beauty treatment</i>	having a massage or a beauty treatment at a beauty salon
25	drinking alcohol	drinking alcohol
26	<i>sports</i>	playing sports, jogging, working out, having fitness classes
27	<i>reading</i>	reading books, magazines
28	news	reading/watching news
29	<i>listening to music</i>	listening to music
30	ability games	playing ability games, e.g., table tennis
31	intellectual entertainment	e.g., sudoku, puzzles
32	board games	playing board games, e.g., scrabble
33	<i>computer games</i>	playing computer games
34	hobby	e.g., fishing
35	<i>creative hobby</i>	e.g., playing instrument, singing, painting
36	<i>resting</i>	resting, lying on the bed/sofa
37	<i>watching TV/movies</i>	watching TV/movies/series/videos
38	<i>surfing the Internet</i>	visiting websites
39	thinking and internal life	reflecting, descriptions of internal experiences
40	sightseeing	sightseeing
41	<i>walking</i>	walking
42	<i>talking to family</i>	talking to family members, also on the phone or online

No	Category	Description
43	<i>talking to partner</i>	talking to a partner, also on the phone or online
44	<i>talking to friends</i>	talking to friends, also on the phone or online
45	talking to acquaintances	talking to acquaintances, also on the phone or online
46	talking to strangers	talking to a stranger, also on the phone or online
47	<i>time with family</i>	spending time with family members
48	time with partner	spending time with a partner
49	<i>time with friends</i>	spending time with friends
50	time with acquaintances	spending time with acquaintances
51	date	being on a date
52	important events	participating in a wedding, christening, etc.
53	social activity	participating in a meeting of community organization, volunteering
54	helping	helping someone
55	<i>waiting</i>	waiting for someone or something
56	surveys, lotteries	participating in surveys or lotteries
57	planning	making plans
58	sexual activity	sexual activities
59	getting ready for a party/date	dressing, putting on make-up for a party or date
60	<i>traveling</i>	traveling somewhere, coming back home
61	<i>religious practices</i>	praying, participating in a holy mass
62	other	other activities
63	Unclassifiable	nonwords or unintelligible responses

*Note.* Names of categories included in analysis are italicized.

Appendix B

Table B1

*Correlations Between Personality Variables (Raw Scores)*

No	Personality variable	2	3	4	5	6	7	8	9	10	11	12
1	Stability	-.48	.29	-.08	.57	-.46	.46	-.22	.11	.41	.41	-.13
2	Disinhibition		-.05	.15	-.39	.61	-.27	.39	.00	-.26	-.27	.40
3	Plasticity			-.63	.56	-.25	-.20	.48	.54	-.05	.26	.22
4	Passiveness				-.42	.37	.52	-.39	-.42	.30	-.05	-.01
5	Integration					-.61	.08	.15	.31	.22	.39	-.04
6	Disharmony						-.08	.15	-.09	-.13	-.14	.18
7	Self-Restraint							-.48	-.21	.54	.23	-.03
8	Sensation-Seeking								.43	-.24	-.06	.34
9	Openness to Change									.07	.35	.34
10	Conservation										.63	-.05
11	Self-Transcendence											-.08
12	Self-Enhancement											

Table B2

*Correlations Between Categories of Activities (Means Calculated for Participants)*

No	Name	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
1	In lecture	.30	.02	.01	-.29	-.12	.02	-.13	-.13	-.11	-.12	-.04	-.09	-.06	.08	-.05	-.03	-.03	.07	-.09	-.07	-.12	.00	-.06	-.14	.00	-.13	.00	.00	-.01	-.01	.03	.11	.13	.07
2	Studying		.23	.03	-.32	-.14	-.05	-.20	.02	-.16	-.13	.00	-.11	-.11	.02	-.08	-.10	-.06	.07	-.03	.04	-.08	.00	-.02	-.23	-.03	-.08	.01	-.01	.03	-.09	.00	.07	.05	.02
3	Exams			-.04	-.13	-.03	-.04	.01	.09	-.06	-.06	.06	-.04	-.05	-.05	-.08	-.03	-.04	-.02	-.01	.02	.00	.05	-.09	-.03	.02	-.05	-.05	.03	.01	-.04	.03	.10	-.08	-.05

No	Name	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35		
4	Extra classes				-.04	-.01	-.05	-.07	-.04	-.02	-.05	-.09	.04	-.03	-.03	-.04	.00	-.08	-.01	-.02	-.07	.11	.08	-.07	-.03	-.08	-.04	-.05	-.06	.01	-.01	.00	-.03	.06	.04		
5	Working					-.09	-.06	-.14	-.19	-.22	-.21	-.22	.03	-.12	-.18	-.11	-.07	-.17	-.15	-.12	-.15	-.13	-.13	.00	-.17	-.08	-.08	-.18	-.12	-.22	-.02	-.09	-.08	-.12	-.08		
6	Babysitting						-.01	-.07	-.02	.07	.08	.02	-.03	.07	-.01	-.02	.03	-.04	-.05	-.06	-.08	-.06	-.05	.07	-.02	-.05	.01	-.05	-.02	.00	.05	-.06	-.04	-.08	-.05		
7	Caring for a pet							-.07	.03	.08	.12	-.02	.00	.03	-.02	-.02	.03	.03	-.05	.02	-.02	.13	-.01	.00	.06	.01	.00	-.06	.02	-.04	.03	-.09	-.01	-.08	-.06		
8	Eating								.06	.13	.03	-.04	-.02	.02	-.09	.03	.05	.00	.04	-.02	-.03	-.07	.02	.01	.00	.03	.06	-.06	-.07	-.02	-.12	-.08	-.06	-.07	.01		
9	Sleeping									.06	.03	-.01	-.04	-.02	.09	-.10	-.03	.10	-.07	-.07	.01	.22	-.08	-.06	.02	.15	-.05	-.05	.07	.05	-.01	.06	.00	-.14	-.10		
10	Hygiene										.09	.05	-.01	.24	-.05	.10	.02	.18	-.03	.02	-.02	.05	.01	.01	.15	.02	.05	-.02	.01	.17	-.08	.08	-.01	-.14	-.05		
11	Cleaning											.22	-.03	.12	-.01	.16	.08	.03	.02	.10	.03	.07	.05	.03	-.05	-.01	.03	.04	.04	.01	-.01	-.02	-.14	-.15	.01		
12	Cooking												-.01	.12	.07	.02	-.01	-.04	.09	.17	.02	-.06	-.01	-.04	.00	-.05	.09	.00	-.01	-.01	.06	-.02	-.12	-.14	.06		
13	Errands													.10	-.01	.00	-.02	-.01	-.02	.01	.00	-.04	-.02	-.02	.05	-.07	-.03	.00	-.01	.00	.13	.00	-.03	.01	-.03		
14	Medical care														-.02	.13	.01	-.01	-.04	.09	-.01	-.08	-.01	-.02	.04	-.05	-.03	.02	-.01	-.03	.07	.02	-.10	-.10	.00		
15	Getting ready															-.06	.05	.14	-.06	-.10	.02	.04	-.09	-.10	.02	.08	-.02	.06	-.04	.05	.16	.14	.08	.05	.05		
16	Shopping																.10	.07	.02	.05	-.03	-.07	.00	-.06	.02	-.06	.05	-.05	.02	.00	.05	.01	-.15	.00	-.02		
17	Cultural events																	.06	-.06	-.01	-.03	.00	-.01	-.10	-.07	.01	.01	.06	.08	.16	.06	.10	-.01	.01	.03		
18	Beauty treatment																			.04	-.04	.01	.06	.00	-.09	.08	.04	.00	.01	.04	.06	.03	-.03	.02	.02	-.06	
19	Sports																			.05	.02	-.04	.12	-.10	-.02	-.09	.10	.01	.03	-.06	-.08	-.04	-.03	-.06	.00		
20	Reading																				.19	-.01	.02	-.14	.04	-.05	.05	.09	-.01	.03	-.04	-.04	-.10	-.12	-.11		
21	Listening to music																					.07	.16	-.01	.06	.09	.02	.17	.00	.08	-.12	.01	-.08	-.02	-.02		
22	Computer games																							-.02	-.02	.19	.00	.06	-.05	.04	-.04	-.02	.09	.04	-.09	-.02	
23	Creative hobby																								-.07	-.03	-.04	-.01	.09	.01	.06	-.06	.00	-.04	.09	.11	
24	Resting																									-.08	-.04	.00	-.08	-.08	-.11	-.12	-.08	-.08	-.12	-.08	
25	Watching TV/movies																										.05	.01	.00	-.03	-.03	-.02	-.03	.00	-.07	-.04	
26	Surfing the Internet																												-.11	.01	.00	.03	-.04	-.03	-.05	-.02	.01
27	Walking																													.00	-.08	-.04	.03	.05	-.09	-.06	.07
28	Talking to family																													.20	.21	.09	.02	.07	.02	.14	
29	Talking to partner																														.14	-.05	-.08	.10	.01	-.01	





*Note.* Stability = Alpha-Plus; Disinhibition = Alpha-Minus; Plasticity = Beta-Plus; Passiveness = Beta-Minus; Integration = Gamma-Plus; Disharmony = Gamma-Minus; Self-Restraint = Delta-Plus; Sensation-Seeking = Delta-Minus. 1 = in lecture; 2 = studying; 3 = exams; 4 = extra classes; 5 = working; 6 = babysitting; 7 = caring for a pet; 8 = eating, 9 = sleeping; 10 = hygiene; 11 = cleaning, 12 = cooking; 13 = errands; 14 = medical care; 15 = getting ready; 16 = shopping; 17 = cultural events; 18 = beauty treatment; 19 = sports; 20 = reading; 21 = listening to music; 22 = computer games; 23 = creative hobby; 24 = resting; 25 = watching TV/movies; 26 = surfing the Internet; 27 = walking; 28 = talking to family; 29 = talking to partner; 30 = talking to friends; 31 = time with family; 32 = time with friends; 33 = waiting; 34 = traveling; 35 = religious practices.

Table B4

*Correlations Between Personality Variables (Difference Scores), Situational Variables (Means Calculated for Participants), and Categories of Activities (Means Calculated for Participants)*

Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
<i>Personality variables</i>																																			
Alpha	-.02	.00	.00	-.02	.01	.04	-.08	.04	-.14	.02	.09	.13	-.01	.03	-.07	.02	.13	-.05	-.03	.06	-.09	-.10	-.06	.02	-.17	-.05	.11	.05	-.07	.03	.15	-.03	-.09	.03	.10
Beta	.06	.08	.09	.06	-.04	-.05	.01	-.02	-.05	-.08	-.04	-.08	-.03	-.09	.05	-.02	.13	-.03	.05	.00	.09	.04	.14	-.03	-.16	-.04	.06	-.02	-.11	-.03	.05	-.01	.06	.14	-.01
Gamma	-.05	-.03	.04	.05	.02	.08	-.09	.05	-.16	.00	-.01	.11	-.02	-.02	-.03	.04	.11	-.04	.05	.07	-.06	-.05	.04	-.03	-.13	-.08	.11	.01	-.11	-.06	.12	-.06	-.04	.05	.08
Delta	-.08	-.06	-.10	-.02	.08	.02	.04	-.05	-.03	.06	.09	.08	.04	.02	-.12	.03	-.03	.02	-.07	.04	-.12	-.02	-.18	.03	.04	.02	.04	.07	.04	.02	.06	-.04	-.10	-.06	.01
O vs. C	.07	.08	.08	.08	-.01	-.09	.03	-.08	.06	-.14	-.14	-.13	.01	-.06	.02	.01	.03	.00	.08	.05	.17	.10	.16	-.03	-.10	.02	-.06	-.08	-.03	.05	-.09	.03	-.04	.05	-.12
S-T vs. S-E	-.04	-.14	.02	.04	-.04	.15	-.04	.07	-.09	-.04	.14	.11	.09	.04	-.04	-.06	.04	.01	-.06	.09	-.06	.00	-.09	.01	.01	-.04	.10	.01	.02	-.04	.15	.02	-.09	-.05	.12
<i>Situational variables</i>																																			
Autonomy	.02	.00	.05	.01	-.43	-.03	-.01	.14	.07	.15	.06	.19	-.05	.06	.04	.05	.06	.11	.20	.18	.13	.16	.09	.01	.15	.06	.15	.09	.08	.02	-.01	.07	-.01	-.04	.03
Alone	-.12	.17	.09	-.11	-.07	-.20	.08	-.09	.25	.00	.00	.08	.00	-.08	.01	-.04	-.03	.10	-.01	.12	.11	.19	-.01	-.01	.12	.17	.04	-.04	-.04	-.04	-.12	-.06	.01	-.08	-.12
Partner	-.18	-.23	-.08	-.06	-.09	.13	.10	.23	-.03	.13	.19	.10	.07	.12	-.11	.16	.01	-.05	-.05	-.04	-.09	.06	-.06	.17	.13	-.01	.08	-.11	.22	-.16	.00	-.07	-.05	-.06	-.02
Family	-.13	-.15	-.08	-.05	-.22	.57	-.01	.08	-.08	.10	.15	.04	.01	.13	.02	.09	.03	.01	.01	.02	-.03	-.12	.06	.02	.08	-.07	.10	.25	-.01	-.01	.30	-.07	-.04	.02	.07
Friend	.54	.33	.14	.10	-.31	-.17	-.11	-.07	-.09	-.06	-.10	.00	-.07	-.05	.19	-.06	.02	.04	.14	-.04	.03	-.11	.05	-.14	-.18	-.09	-.01	-.01	-.06	.31	-.04	.26	.14	.12	.13
Colleague	-.19	-.24	-.11	.07	.72	-.08	-.07	-.07	-.12	-.17	-.16	-.20	.00	-.11	-.10	-.07	-.02	-.12	-.12	-.11	-.10	-.06	-.08	.03	-.14	-.05	-.13	-.14	-.09	-.14	-.06	-.05	-.13	-.12	-.06
Stranger	.25	.08	.01	.12	-.01	-.04	-.01	-.12	-.06	-.04	-.10	-.11	-.03	.02	.01	-.09	-.01	-.01	.10	-.01	-.01	-.05	.02	-.10	-.10	-.05	-.11	.06	-.08	.00	.05	.08	.05	.20	.11

*Note.* Alpha = Alpha-Plus – Alpha-Minus (Stability vs. Disinhibition); Beta = Beta-Plus – Beta-Minus (Plasticity vs. Passiveness); Gamma = Gamma-Plus – Gamma-Minus (Integration vs. Disharmony); Delta = Delta-Plus – Delta-Minus (Self-Restraint vs. Sensation-Seeking); O vs. C = Openness to Change vs. Conservation; S-T vs. S-E = Self-Transcendence vs. Self-Enhancement. 1 = in lecture; 2 = studying; 3 = exams; 4 = extra classes; 5 = working; 6 = babysitting; 7 = caring for a pet; 8 = eating, 9 = sleeping; 10 = hygiene; 11 = cleaning, 12 = cooking; 13 = errands; 14 = medical care; 15 = getting ready; 16 = shopping; 17 = cultural events; 18 = beauty treatment; 19 = sports; 20 = reading; 21 = listening to music; 22 = computer games; 23 = creative hobby; 24 = resting; 25 = watching TV/movies; 26 = surfing the Internet; 27 = walking; 28 = talking to family; 29 = talking to partner; 30 = talking to friends; 31 = time with family; 32 = time with friends; 33 = waiting; 34 = traveling; 35 = religious practices.

Table B5

*Correlations Between Situational Variables (Means Calculated for Participants) and Personality Variables (Raw Scores)*

No	Situational variable	Stability	Disinhibition	Plasticity	Passiveness	Integration	Disharmony	Self-Restraint	Sensation-Seeking	Openness to Change	Conservation	Self-Transcendence	Self-Enhancement
1	Autonomy	.01	-.05	.04	.00	.08	-.13	-.06	.05	.14	.01	.09	-.03
2	Alone	-.12	.07	.00	.02	-.08	.11	-.01	.04	.03	-.15	-.13	.13
3	Partner	.12	-.10	-.03	.07	.09	-.11	.09	-.05	-.01	.11	.08	-.09
4	Family	.16	-.11	-.04	-.01	.06	-.15	.06	-.13	-.08	.18	.14	-.18
5	Friend	-.05	.01	.11	-.09	.02	.07	-.14	.11	.04	-.06	.01	.04
6	Colleague	-.02	.05	-.03	.00	.00	-.01	.02	-.01	.04	-.02	.00	.02
7	Stranger	.00	-.03	.10	-.07	.00	-.03	-.01	-.01	-.04	-.02	-.05	.01

*Note.* Stability = Alpha-Plus; Disinhibition = Alpha-Minus; Plasticity = Beta-Plus; Passiveness = Beta-Minus; Integration = Gamma-Plus; Disharmony = Gamma-Minus; Self-Restraint = Delta-Plus; Sensation-Seeking = Delta-Minus

Table B6

*Correlations Between Situational Variables (Means Calculated for Participants) and Personality Variables (Difference Scores)*

No	Situational variable	Alpha	Beta	Gamma	Delta	O vs. C	S-T vs. S-E	2	3	4	5	6	7
1	Autonomy	.04	.02	.12	-.07	.08	.08	.05	.10	.10	.05	-.31	-.11
2	Alone	-.11	-.01	-.11	-.03	.14	-.18		-.31	-.32	-.28	-.33	-.29
3	Partner	.12	-.05	.11	.08	-.10	.12			.07	-.34	-.12	-.18
4	Family	.15	-.02	.13	.12	-.20	.22				-.17	-.22	-.03
5	Friend	-.03	.11	-.04	-.15	.08	-.03					-.18	.20
6	Colleague	-.04	-.02	.00	.01	.04	-.01						.00
7	Stranger	.02	.10	.02	.00	-.01	-.04						

*Note.* Alpha = Alpha-Plus – Alpha-Minus (Stability vs. Disinhibition); Beta = Beta-Plus – Beta-Minus (Plasticity vs. Passiveness); Gamma = Gamma-Plus – Gamma-Minus (Integration vs. Disharmony); Delta = Delta-Plus – Delta-Minus (Self-Restraint vs. Sensation-Seeking); O vs. C = Openness to Change vs. Conservation; S-T vs. S-E = Self-Transcendence vs. Self-Enhancement