Personality Structure and Assessment in French-Speaking African Cultures

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Abstract

Personality includes personality traits and several processes regulating the expression of these traits, sometimes called characteristic adaptations. Culture has more influence on these processes than on person's basic tendencies because these processes allow people to express culturally adapted behaviors. Since well-known personality inventories or questionnaires assessing personality disorders are available in French or Arabic, several studies have evaluated whether models of personality traits developed in Western countries replicate in French-speaking African cultures. Most of these studies have concluded that personality models, such as Eysenck's PEN model, the five-factor model, or the alternative five-factor model do replicate in these cultures, suggesting that the personality inventories associated with these models can also be used in French-speaking African cultures. Moreover, in these cultures personality disorders relate to normal personality dimensions in a very similar manner to the relationships observed in Western countries. However, the mean scores observed in African cultures are usually slightly different from the mean scores observed in other French-speaking countries, suggesting that the use of norms developed in Western French-speaking countries might not be adequate. This was confirmed by the fact that personality dimensions did not reach scalar invariance across French-speaking countries from different parts of the world. More research should be conducted in the field of personality psychology in Africa as this region of the world is largely understudied. Finally, culture-specific norms as well as culturally adapted personality inventories and interviews in local languages should be developed.

Key words: Personality, Personality Disorders, Personality Assessment, French-speaking Africa.

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Personality is frequently defined as an inner set of organized dispositions, also called basic tendencies, and psychological dynamic processes underlying people's behavioral and affective expression. Each individual is characterized by a specific personality profile that is stable over time and across situations. Personality predicts several important life outcomes such as academic performance, job satisfaction or subjective wellbeing. Whereas personality includes stable aspects and more dynamic psychological aspects of the person, personality dispositions are usually described in terms of traits that can be explained by five or six independent higher-order personality dimensions. The most common model of personality traits is certainly the five-factor model (FFM), which is conceptually very similar to the Big Five identified in many lexical studies since the sixties (John, Naumann, & Soto, 2008). It considers that a five dimensional space can parsimoniously describe all personality traits (these dimensions are labeled neuroticism, extraversion, openness, agreeableness and conscientiousness). Even though these traits are biologically rooted and partly inherited, for about 40% of the variance (Vukasović & Bratko, 2015), the context—in particular the cultural context—influences the way people express their personality in terms of behaviors and affects.

Since the 90s, an abundance of cross-cultural research has examined the universality of personality trait models, such as Eysenck's psychoticism-extraversion-neuroticism (PEN) model, the Big Five, the FFM, the alternative five-factor model (AFFM), the Big Two, or the Big Six. Some of these studies have been conducted in very large samples from more than 50 cultures (e.g. McCrae, Terracciano, et al., 2005a). However, French-speaking African cultures were very often underrepresented in these large-scale cross-cultural studies. For example, only two samples from this region were included in the study by McCrae and colleagues and by Schmitt, Allik,

McCrae, Benet-Martínez and colleagues (2007). Surprisingly, all the above-mentioned personality models replicate well across cultures and claim to be universal. This could mean that all these models might be integrated in more general and maybe hierarchical personality trait models, or that all properly developed and translated personality inventories replicate well across cultures. If this is the case, the culture-specific aspects of personality structures may have been underestimated. Whereas most studies having adopted an *etic* (or universalistic) approach have confirmed the universal aspect of personality structure, some other studies having adopted an *emic* (or culture-specific) approach, usually in Asian cultures, have identified specific indigenous personality structures (Cheung & Leung, 1998). More recently, a combined emic-etic approach allowed identifying both universal and culture-specific aspects of personality in South Africa (Fetvadjiev, Meiring, van de Vijver, Nel, & Hill, 2015). In addition, several studies have investigated the trait profiles of nations by relating them to cultural or context variables, such as national prosperity, geographic location or cultural values. Some studies have also shown that trait profiles of geographically close nations are similar and that Western cultures tend to be more extraverted and open while African and Asian cultures tend to be more agreeable and conscientious (Allik & McCrae, 2004). However, results obtained using a given personality inventory seem to be difficult to replicate with other inventories. This is confirmed by the fact that, across nations, correlations between very similar personality dimensions captured using different inventories are usually low and inconsistent (McCrae et al., 2005b; Schmitt et al., 2007). Therefore, considering the potential methodological challenges of such cross-cultural comparisons, this type of results can only be considered as preliminary and further research is undoubtedly needed to better understand how cultural factors influence personality, and vice versa.

  Personality cannot be conceived only in terms of personality traits but also includes other

less stable and more dynamic components. According to the Five-Factor Theory (FFT), "the core components of the personality system … are … the basic tendencies [or the five main personality dimensions that summarize personality trait covariation], characteristic adaptations, and the self-concept" (McCrae & Costa, 1999, p. 142). Characteristic adaptations mediate the expression of personality dispositions and contribute to the regulation of their expression (Rossier, 2015b). According to the FFT, these adaptations include self-esteem, attitudes, skills, interests, etc., but could also include other regulation skills such as career adaptability (Rossier, 2015a) or emotional regulation (Rossier, Verardi, Genoud, & Zimmermann, 2012). Characteristic adaptations "…help the individual to fit into the ever-changing social environment. Characteristic adaptations and their configurations vary tremendously across cultures, families, and portions of the life span" (McCrae & Costa, 1999, p. 144). The impact of these characteristic adaptations changes quite quickly over time under the influence of contextual feedbacks and contributes to people's adaptation to their context. These characteristics are thus also "culturally conditioned" (p. 142). Matsumoto (2007) developed a very similar conceptualization of the personality system. This system includes dispositions, that constitute human nature, and what he calls personality corresponds to the characteristic adaptations within the FFT. The interaction between human nature (the inherited dispositions of humans) and the ecological climate contributes to the emergence of a cultural context that in turn contributes to define a situational context. The expression of dispositional traits is mediated by this personality (that includes among others narratives, values, and motives), and the interaction between this expression and the situational context induces an adaptation. The conceptualization that Rossier (2015a) developed recently is very similar but suggests that the context is rather in interaction with behaviors and that this interaction will support a fast feedback loop on characteristic adaptations or regulation processes and a slow feedback loop on the dispositions themselves, explaining for example the slowly

evolving development of personality across the life span.

The feedbacks that constitute the responses of the environment reinforce or tend to fade out some specific behaviors. This aspect was conceptualized by Bandura in the social cognitive theory of personality when describing the triadic reciprocal causation that "involves a dynamic interplay among personal determinants, behaviors, and environmental influences (Bandura, 1999, p. 157). These interactions allow self-regulation of the expression of personality traits. However, the structure of a person can be seen as relatively stable and evolving relatively slowly, especially during adulthood, but adaption to the environment and adjustments are always required. Moreover, the differentiation of personality traits during childhood and adolescence and the way a person learns to express these traits are both partially under the influence of the proximal and distal social and cultural context, as already noticed by Linton (1945). If Benedict (1934) suggested that each culture would favor the emergence of specific personalities, Linton (1945) argued convincingly, on the contrary, that individuals and their environment are in a constant, complex and dynamic interaction allowing the development of adapted behavioral responses. For this reason personality results from a combination of nature and more or less nurture, and this conceptualization is in essence very modern. "There seems to be abundant evidence that neither innate abilities nor environment can be regarded as constantly dominant in personality formation" (p. 133). Finally, self-concept is also part of this personality system and certainly contributes to this self-regulation and is certainly strongly influenced by the cultural context (Rossier, Maggiori, & Zimmermann, 2015).

The aim chapter is to make a review of the work done in the field of personality psychology in French-speaking African cultures. French-speaking Africa being difficult to define, because some countries that used to have French as an official language do not anymore, and because of some other countries that had never French as an official language belongs to the

so called, we will first try describe this part of Africa. After, we will describe a indigenous Sub-Saharan personality model that gives an idea about how the construct of personality can be described in some of these cultures. Personality traits and personality disorders research conducted in these cultures will be reviewed. Finally, this chapter will describe the practices and challenges of psychological assessment in French-speaking Africa.

French-Speaking Africa

The term French-speaking Africa is generally used to refer to a geographical part of the African continent whose people speak French. It designates a geographical space that brings together people speaking French to communicate and exchange. Military invasion, colonial conquest and the colonial administrative organization of territories in Africa, including the creation of an educational system, were the main vectors of the spread of the French language in Africa, to the point that this second language has become a first language in some countries (Kayira, 2015). The colonial conquest took place from the sixteenth century to the twentieth century with an acceleration of this process between 1870 and 1913. In pre-colonial Africa, French was not a usual language and even less an official or first language. The conquest and administrative organization of the colonial territories made a geographical distinction between West Africa and Equatorial Africa. These territories were federated and administered by two different governors. On the one hand, the West African territories were put under the authority of a colonial governor based in Dakar, Senegal. These ten French colonies formed what was then called French West Africa (Afrique occidentale française). On the other hand, there was a second group of federated colonies located in the central part of Africa that formed French Equatorial Africa (Afrique-Équatoriale Française), administered by a colonial governor based in Brazzaville (Fierro, n.d.).

The first goal of the colonization was to ensure a political and economical domination of

the conquered territories. The first forts, ports and trading posts were created on the African Gold Coast, at Elmina. In the part of Africa dominated by the French, the use of French was required for various business transactions. The *White Fathers*, a missionary society, created the first private schools (Lange, 2007). They designed the student selection process, the school administration and the educational programs. These programs were developed specifically for the African population and the first topic taught was the local language. Students only had to learn French once they were able to read and write in their mother tongue (Harding, 1971). Around 1900, the colonial ministry took control of all existing schools on its territories. Through a directive that turned the previous allocation to the White Fathers into a grant-in-aid, the ministry changed the status of schools from private to state schools and asked them to follow new instructions concerning their organization and programs. French became the official language of instruction in these first state schools of West Africa (Spaëth, 2001). For the colonial administration, this newly created educational system allowed to provide a cultural and intellectual education to a new African elite, supposed to occupy mid-level positions in the colonial administration. The first African university was established in Dakar in 1957 (Lange, 2007), and this was the final accomplishment of this colonial policy aiming at developing a complete educational system going from primary to post-secondary education.

Until the early sixties, the schools of French-speaking Africa were strongly influenced by the French curriculum. Following decolonization and the processes of independence, some African leaders and political elites took over educational policy and educational content taking into account the socio-cultural realities of African cultures (Verdelhan-Bourgade, 2014). In North Africa, the development of an Arabic educational system induced a very rapid and important increase of the usage of Arabic where French was used previously. In 1970, the first organization of multilateral cooperation between independent francophone countries was created under the

name of *Agence de coopération culturelle et technique* (ACCT) [Agency of Cultural and Technical Cooperation]. In 1986, the first summit of heads of states and governments sharing the use of French was held in Paris and this summit opened the way for a broader cooperation between all members of that *Francophonie*. The *Organisation Internationale de la Francophonie* (OIF) was founded in 1995. It brings together 54 states, 3 associate members and 23 observers, which amounts to more than 274 million French-speakers from all over the world, including 11 West African countries, 12 Central African countries, and 3 North African countries. Many countries of West and Central Africa are former French colonies where French is still an official language of communication, but with many exceptions such as Cape Verde or Ghana. On the contrary, in North Africa, French is no longer an official language and its use is limited to a very small proportion of the population.

French-Speaking African Personality Models

Most empirical research on personality psychology conducted in the French-speaking African regions used scales and measures developed in Western countries for comparison purposes. Moreover, using well-known instruments facilitate later publication of the results, as reviewers sometimes find it difficult to assess results obtained through instruments they are not familiar with. For these reasons, much of the personality research conducted in French-speaking Africa adopted an etic approach based on the assumption that instruments can be transposed from one region to the other and that some personality models may be regarded as universal. However, other studies have adopted an emic approach leading to the development of indigenous personality models, like the Sub-Saharan African personality model by Sow.

Sow's Personality Model

Sow is a psychiatrist known for having written two books: *Psychiatrie dynamique africaine* [African dynamic psychiatry] (1977) and *Les structures anthropologiques de la folie en*

Afrique Noire [Anthropological structures of madness in Central Africa] (1978) where he describes an African personality and psychopathology or what could be called an indigenous personality model for Sub-Saharan cultures. In his opinion, a person cannot be described alone—the social context has to be considered. A person is made of four layers (see Figure 3-1). The outer layer represents the biological envelope of a person—the body. Next is a layer representing a principle of vitality common to humans and animals, which corresponds to the physiological aspects of living, allowing people to move physically in the social space. Next is a second vitality layer, but this vital principle is specific to humans. This layer is the location of human psychic life. Finally, in the center, one finds the immortal spiritual substance. A person can be described according to these layers but also has to be situated according to three axes. The first axis is vertical and represents a person's phylogeny, connecting him/her to his/her Ancestor. "Sur "Lui" repose tout le reste" [Everything else depends on "him"] (Sow, 1977, p. 29). This axis, which allows a person to be spiritually situated and to connect with their community and culture, supports the two other axes. The second horizontal sociocultural axis represents the relation between a person's physiological principle of vitality and the larger community with its system of alliances. This axis defines all relational configurations within the community. It defines the place of a person in reference to all others, social rules, institutions, relations, practices, the world, and nature. Finally, the existential axis allows situating people's psychic life according to their own family lineage, linking them with their ancestors and descendants. Thus, people have to be described in consideration of a proximal and distal social space situated on a temporal and spiritual frame.

Sow (1977) developed the idea that these three axes allow people to develop relationships with their spiritual and social environment and that these relationships usually reach a state of equilibrium. If this equilibrium is disturbed it can induce the emergence of an illness or mental

disorder. More precisely, mental disorders are conceived as an alteration of the ego, namely of that equilibrium on its three poles: the phylogenetic lineage, the sociocultural context, and the ontological dimension associated with family lineage. In this context, the etiological diagnosis consists in identifying on which axis the equilibrium is disturbed and for which reason. The therapy consists in redefining a new equilibrium with the different actors of that equilibrium - ancestors, family members, community members, etc. Traditional medicine uses sorcery, fetishism or trance for this purpose. According to Sow, to understand a psychopathology it is crucial to take into account the cultural context: "…l'intelligibilité des conduites, des opérations, représentations, pensées, et par voie de conséquence celle des modèles africains traditionnels, sera conçue par nous comme auto-suffisante et auto-fondatrice, en fonction des thèmes et symboles fondamentaux de l'Univers culturel africain lui-même…" […the intelligibility of behaviors, processes, representations, thoughts, and consequently the intelligibility of traditional African models, will be conceived by us as being self-sufficient and self-founded, based on the fundamental themes and symbols of the African cultural universe itself…] (p. 13). His etic approach implies that constructs, both as personality and diagnostic categories, have to be described and defined in reference to the cultural meaning they have in a specific context.

It is interesting to note that in the African tradition described by Sow (1977, 1978), mental illnesses are due to a lack of equilibrium in the relationships between a person and members of his/her spiritual and proximal and distal social environment. Illness is not the result of an intrapsychic or biological phenomenon (as commonly conceived in Western individualistic cultures), but rather of the alteration of a relationship situating a person socially and spiritually. As such, in a collectivistic culture, a person cannot be understood without considering the entire community and the spiritual context. This can be illustrated by the South African concept of Ubuntu that refers to the fact that a person can only exist through his/her relations with others.

Ubuntu "is grounded in the interconnectedness of beings, values the contributions of others and emphasizes reciprocity and responsibility. In the West, human identity tends to lie in the rationalistic and individualistic approach as captured in the Cartesian mantra: "I think, therefore I am"; whereas [Ubuntu] asserts, "I am because we are, and because we are, therefore, I am" (Mbiti 1969, p. 108)" (Kayira, 2015, p. 110). The community does not absorb the individual and a dialectical tension always exists between the individual and collective aspects of the African personality (Corin, 1980).

Personality Trait Research in French-Speaking African Cultures

Most of the research on personality traits conducted in Africa was not conducted in French-speaking African cultures, but in countries such as South Africa (e.g., Heaven, Connors, & Stones, 1994; Fetvadjiev et al., 2015) or Kenya (Thuo, Ndetei, Maru, & Kuria, 2008). Moreover, among the personality trait research conducted in Africa, only a very limited number of studies were conducted using local African languages. The attempt to adapt the Revised NEO Personality Inventory (NEO-PI-R) in Shona, a language spoken in Zimbabwe is one example of such studies (Piedmont, Bain, McCrae, & Costa, 2002). However, in the past 20 years different large-scale cross-cultural studies have been conducted to investigate the relationship between personality and culture, including French-speaking African samples (e.g., McCrae et al., 2005a; Thalmayer & Saucier, 2014). These studies usually used French or Arabic versions of personality inventories in North Africa and a French version in the other French-speaking African cultures.

Personality Structure in French-Speaking African Cultures

Only few studies on the structure of personality traits in French-speaking Africa were published before 2005. The first studies were conducted in Egypt, using an Arabic version of Western personality measurement, and observed that the main and most common personality dimensions such as Neuroticism or Extraversion could also be identified in this cultural context

(Abdel-Khalek, 1981; Soueif, 1965). Concerning the replication of the factor structure of personality models, Cattell's sixteen personality factor (16PF) structure seemed difficult to replicate in the Egyptian context (Abdel-Khalek, Ibrahim, & Budek, 1986) whereas Eysenck's PEN personality structure replicated quite well (Abdel-Khalek & Eysenck, 1983; Ibrahim, 1982). However, the factor structure of the Arabic version of the Junior version of the Eysenck Personality Questionnaire (JEPQ) did not replicate well in Egypt (Eysenck & Abdel-Khalek, 1989). In fact, the results differed for boys and girls and the authors concluded that "the psychoticism factor was unreliable in Egypt as measured by the items chosen for English children" (p. 7). All large-scale studies having analyzed the universality of the PEN triad always included one sample from French-speaking Africa. This sample was always from Egypt (that belongs to the International Organization of the Francophonie since 1983 without being a French-speaking country) and data were collected using an Arabic version of the Eysenck Personality Questionnaire (EPQ). All studies confirmed the overall replicability of the PEN model, but results per country were not provided (Barrett & Eysenck, 1984; Barrett, Petrides, Eysenck, & Eysenck, 1998).

McCrae (2002) published the first large-scale study about the universal features of the FFM, but no French-speaking African sample was included among the 36 cultures. In 2005, Rossier, Dahourou, and McCrae published a study analyzing the replicability of the FFM and of Levenson's locus of control (LOC) structure using the French version of the NEO-PI-R in Burkina Faso and Switzerland. The FFM replicated well across the two countries separated by a large cultural distance, but the structure of the LOC seemed to be more influenced by the cultural context. For this reason they concluded that "from the perspective of FFT, it would perhaps be best to classify LOC as a characteristic adaptation, subject to both dispositional and environmental influences" (p. 242). In fact LOC can be conceived as a meaningful trait in

French-speaking Africa to predict for example resilience to ecological degradation (van Haaften & van de Vijver, 2003), but at the same time, it seems "more determined by local situations than by global, stable environments. The locus of control concept allows a far more explicit role for cultural context in the making of personality… It can also be seen as a precursor to other social-cognitive perspectives in which the person is seen as the outcome of the interactions between organism and social environment" (Berry, Poortinga, Breugelmans, Chasiotis, & Sam, 2011, p. 120).

The second large-scale study evaluating the universal features of the FFM among 50 cultures included two samples from French-speaking Africa—one from Burkina Faso and one from Morocco—using respectively the French and English-version of the NEO-PI-R (McCrae et al., 2005). In Burkina Faso, all congruence coefficients were above .90 except for openness, whereas they were lower in Morocco. In addition, the authors observed that in Sub-Saharan African cultures congruence coefficients were lower and that the quality of the data was weaker in Morocco where they used an English language version of the NEO-PI-R. A similar study on the Big Five personality traits in 56 nations included 7 African nations, and among them 2 French-speaking African nations, the Democratic Republic of Congo and Morocco, where data were collected in English (Schmitt et al., 2007). The Big Five factor structure was replicated in all world regions including Africa, but the internal reliabilities and congruence coefficients were slightly lower in Africa and South and Southeast Asia. Recently, Zecca et al. (2012) also studied the replicability of the FFM in nine French-speaking African countries from four African regions (North, West, Central, and Eastern Africa). They found that the structure in French-speaking Africa was very similar to the structure observed in French-speaking Switzerland (see Table 3-1). Moreover, the structures observed in the different African regions were not more similar to the Burkinabè structure than to the Swiss structure, but two specificities were observed. The first

specificity was that the exploratory factor analysis recombined the facet scales of extraversion and agreeableness in two factors that have been previously labeled love and dominance (Katigbak, Church, & Akamine, 1996). The second specificity was that the facet of excitement seeking loaded consistently on the openness factor instead of the extraversion factor.

Not so many studies have been conducted using local African languages with the exception of the study conducted by Piedmont et al. (2002) in Shona, a Zimbabwean language, and the study that allowed to develop the South African Personality Inventory (SAPI) simultaneously in 9 Bantu and 2 Germanic languages (Fetvadjiev et al., 2015). In order to study personality structure in a preliterate sample, Rossier, Ouedraogo, Dahourou, Verardi, and de Stadelhofen (2013) have translated the NEO-PI-R in Mooré, the most frequently spoken local language in Burkina Faso, and administered that inventory as an interview to two sub-samples, one from the urban area of Ouagadougou and one from a rural village in the Northern part of Burkina Faso. They observed that the structure of the Mooré translations was very similar for both sub-samples but very different from the original one, suggesting the existence of a translation bias. "It should be noted that Mooré is mainly an oral language which slightly changes from one region to the other. For this reason, we had to adapt our Mooré translation for the field trials in Ouagadougou and Soumiaga" (p. 9). This study illustrates well how difficult it can be to adapt an instrument and a data collection procedure to a French-speaking African cultural context.

Recently, another multi-centric research project studied the cross-cultural generalizability of the alternative five-factor model (AFFM) in 23 cultures (Rossier et al., 2015) including one large sample from Senegal ($n > 1,500$). In this cultural context, the authors used the previously validated French version of the Zuckerman-Kuhlman-Aluja personality questionnaire (ZKA-PQ) and observed that the structure could be replicated in this cultural context. However, the internal

consistencies were slightly lower in African and Asian countries. In fact these internal consistencies were lower in collectivist cultures, suggesting that interpersonal constructs or realities might be more important for defining the self-concept in such cultures. That might be the consequence of the fact that "traditional Burkinabè society is a tribal society, in which the place of the individual is defined more in terms of social than of personal criteria" (Dahourou, Koné, & Mullet, 1995).

All this research seems to indicate that well-developed and validated personality models such as the PEN model, the Big Five, the FFM or the AFFM can be replicated and used in French-speaking Africa. The structure seems however less robust in this region of the world and some specificities that are sometimes systematic are observed. The openness dimension of the Big Five or of the FFM for example seems more difficult to identify in the French-speaking African cultural context. Finally, the adaptation of these instruments in local languages was only tried once and appear to be difficult. Indeed, these local languages have a strong oral tradition and can vary from one region to the other.

Mean Level of Personality Traits

From the early studies conducted in the 80s to assess the universality of the PEN model, and in particular its replicability in Egypt, researchers have tried to compare the mean level of personality traits. Eysenck and Abdel-Khalek (1989) observed that "Egyptian children were more introverted… than their English counterparts… [, that] no difference was observed on neuroticism…" (p. 9), and that the psychoticism scale was unreliable. Barrett and Eysenck (1984) observed that Egyptians seemed to score higher on neuroticism. For extraversion results seemed to be inconsistent across genders. Allik and McCrae (2004) analyzed the patterns of national mean personality profiles, using the FFM, and observed that these profiles were geographically organized. Countries separated by a small cultural distance, such as Austria, Germany, and

Switzerland, or Belgium and France, or China and Korea tend to have similar mean personality profiles whereas countries separated by large cultural distance, such as China and Norway, have less similar profiles. Globally, North American and European countries scored higher on extraversion and openness, and lower on agreeableness than Asian and African countries. However, this study did not include any French-speaking African culture. This geographical distribution was also replicated on a larger set of cultures, including Burkina Faso and Morocco (McCrae et al., 2005b). These two countries seemed to have a similar profile, scoring slightly higher on neuroticism and lower on extraversion.

Mean personality traits at the national level have been related to several cultural factors or *context variables* (van de Vijver & Leung, 1997) such as gross national product, geographic location, the overall level of collectivism, well-being, etc. National prosperity has been associated negatively with conscientiousness in some studies, suggesting that people in a difficult economic context tend to be more organized and perseverant when pursuing their goals (McCrae, 2001). In comparison, in a later study the gross national product per capita and the human development index have been associated positively with extraversion, openness, and agreeableness (McCrae et al., 2005b). The mean personality profiles have also been related to the geographical location and climatic conditions;. both latitude and temperature correlate positively with extraversion and conscientiousness. However, there are some discrepencies about this relationship in the litterature and its theoretical foundation is not very clear yet (Allik & McCrae, 2004). Cultural values, as described by Hofstede (2001), have also been related to personality traits, and in particular with the main dimensions of the FFM. Individualism correlates positively with extraversion; power distance correlates negatively with extraversion and openness, but positively with conscientiousness; masculinity correlates positively with neuroticism and openness, but negatively with agreeableness; and uncertainty avoidance correlates positively with neuroticism,

and negatively with agreeableness (Hofstede & McCrae, 2004). However, this pattern of correlation was only partially replicated in a later study using observer ratings and including a larger set of nations (McCrae et al., 2005b).

Based on the correlation between mean personality traits and cultural values, and on the level of cultural values observed by Hofstede (2001) for the West African region and Switzerland, Rossier et al. (2005) hypothesized that participants in Burkina Faso would score lower on neuroticism, extraversion and openness, but higher on conscientiousness. These expectations were also in line with the mean values observed for Black South African and Zimbabweans compared to the Swiss (McCrae, 2002). As expected, Burkinabè scored lower on extraversion and openness, higher on conscientiousness, and had similar scores on agreeableness (the difference was significant but the effect size was negligible). Contrary to the hypothesis however, Burkinabè scored higher on neuroticism than the Swiss. In McCrae's and colleagues' study (2005b) based on observer ratings, the dissimilarities between Burkinabè and Swiss were slightly different. Burkinabè scored lower on extraversion and openness, but the differences on the three remaining main personality dimensions were negligible ($d < .20$). Interestingly, the Burkinabè profile was more similar to the French-speaking Swiss profile than to the profile of the other French-speaking African nation, Morocco. However, data in Morocco were collected in English, and this could have affected the quality of the data, as participants were not fluent in this language. If we compare the profiles for Morocco and Switzerland as observed in the study by McCrae and colleagues (2005b), using the NEO-PI-R, and in the study by Schmitt et al. (2007), using the Big Five Inventory (BFI), the profiles were similar for extraversion and openness but different for the three other dimensions. Then, if we compare the scores obtained by the Burkinabè and the Swiss on neuroticism and extraversion in the study by Rossier et al. (2005) with the scores obtained by the Senegalese and the Swiss in the study by Rossier et al. (2015) on

the same dimensions but measured with the ZKA-PQ, the differences are similar. Recently,

Thalmayer and Saucier (2014), using a Big Six inventory, also observed that North

Africa/Middle East samples tend to score lower on extraversion compared to Western Europe,

but they did not observe a difference on the resiliency factor that may correspond to neuroticism.

It is very important to keep in mind that heterogeneity within a cultural group is much

more important than the very small differences observed between cultural groups. Actually, these

very small differences may be very difficult to capture. Nevertheless, differences on mean

personality profiles could reveal true differences, but they could also be linked to the cultural

context. Indeed, in a study combining an emic and etic approach, Valchev, Nel, van de Vijver,

Meiring, de Bruin, and Rothmann (2012) observed that the different South African groups did not

use the personality descriptors at the same frequency. Black South Africans seemed to describe

people using more behaviors and perceptions whereas White South Africans seemed to use more

trait-like attributes. Moreover, they observed that in their descriptions, Black South Africans used

personality characteristics associated with personal growth and extraversion or openness

dimensions much more frequently, suggesting that these dimensions are more meaningful in a

collectivistic culture. On the contrary, the attributes associated with social stratification, in terms

of power such as leading or supporting, emotional stability and integrity were more represented

among Whites. The authors concluded that "the individualism-collectivism framework implies

that in individualistic cultures it is more important to be able to establish good relationships with

foreigners, whereas in collectivistic cultures, the emphasis is more on preserving relationships

with in-group members" (p. 385). However, if we take into account the fluidity of social

structures, this has to be a little more complex. If geographical mobility is limited, preserving in-

group relationships is necessary, whereas in the contemporary liquid society where people are

nomadic (Bauman, 2000), the ability to always reestablish quality relationships with foreigners is

crucial. So, traditional societies that can be conceived as more structured should promote the preservation of in-group relationships whereas contemporary less structured societies could encourage people to develop the ability to establish good relationships with foreigners. This could explain why Burkinabè tend to be less extraverted than the Swiss for example.

Overall, the comparison of personality profiles across cultures obtained with different instruments led to mixed results. The results obtained using the NEO-PI-R, the EPQ, or the ZKA-PQ on similar dimensions can be quite different (Rossier et al., 2015). For example, the profiles observed by Rossier and colleagues (2007) using the Zuckerman-Kuhlman Personality Questionnaire (ZKPQ) were very different to the profiles observed by McCrae (2002) using the NEO-PI-R: "expectations were only partly true for [impulsive sensation seeking], [aggression-hostility], and [sociability], and totally erroneous for [neuroticism-anxiety], although [this dimension] is highly correlated with the NEO-PI-R domain" (p. 195). Moreover, at the national level the correlation between different instruments measuring similar dimensions (BFI, EPQ, NEO-PI-R, ZKPQ, ZKA-PQ) is very unstable and difficult to predict (e.g., Rossier et al., 2007; Schmitt et al., 2007). Moreover, correlation between personality dimensions and cultural values vary across studies (e.g., Hofestede & McCrae, 2004; McCrae et al., 2005b). "All these studies suggest that culture-level mean personality score differences are small and might not be consistently observed using different personality measurements. This might be due either to the fact that these measurements do not assess exactly the same dimensions or to the fact that the differences are too small to be reliably assessed" (Zecca et al., 2012, p. 688).

Several methodologists have claimed that mean scores at culture or national level can be compared only when structural (configural), metric (factorial), and scalar measurement invariance is reached (Duarte & Rossier, 2008; van de Vijver, & Leung, 1997). Six independent studies have analyzed the level of cross-cultural measurement invariance of five different

personality inventories or questionnaires and three studies have included African samples and two French-speaking African samples (Church, Alvaez, Mai, French, Katigbak, & Ortiz, 2011; Johnson, Spinath, Krueger, Angleitner, & Riemann, 2008; Nye, Roberts, Saucier, & Zhou, 2008; Rossier et al., 2015; Thalmayer & Saucier, 2014; Zecca et al., 2012). Most studies, including the three with French-speaking samples (Rossier et al., 2015; Thalmayer et al., 2014; Zecca et al., 2012) have concluded that personality inventories reach structural and sometimes metric measurement invariance.

Moreover several authors have suggested that these aggregate personality traits may be biased by response styles, such as acquiescence (Smith, 2004), self-presentation norms (Yik, Bond, & Paulhus, 1998), or the reference group effect (Heine, Lehman, Peng, & Greenholtz, 2002). If self-enhancement bias may indeed have an impact on how people assess themselves taking into account local social and cultural norms (Heine & Hamamura, 2007), the reference group effect (Mõttus et al., 2012) and the response styles (Verardi et al., 2010) seem to have little impact on self-assessment. Despite the fact that comparisons of aggregate scores might potentially be affected by yet another bias such as the sampling bias, McCrae (2013) still suggested that "the aggregate scores, even if imperfect, are useful in characterizing different cultures […] We are only at the beginning to learn what these profiles mean; the nomological network of aggregate personality scores is still very limited" (p. 563). For this reason more research is definitely needed to better understand the meaning of these aggregate scores or which bias might affect them. One other difficulty we might encounter when comparing aggregate personality scores is that people in self-report inventories describe their behaviors, emotional reactions, and other aspects of what is defined according to the FFT as belonging to the *objective biography*. The objective biography is not only under the influence of the basic tendencies but is also influenced by cultural context that has an impact on the characteristic adaptations regulating

the expression of personality traits. For this reason, the differences observed using a self-report inventory might rather reflect the differences at behavioral level rather than at the dispositional level. For all the reasons mentioned above, comparison of personality profiles across cultures has to be made with great caution, because it is not clear yet whether such profiles are the result of some systematic bias or if they really provide reliable information on the relation between personality and cultural context.

Personality Disorders in French-Speaking African Cultures

During many years the definitions of personality disorders and of normal personality have been conceived separately. However, Eysenck claimed from the beginning that abnormal personality should be related and defined according to normal personality and "[…] that psychiatric classification in terms of diagnostic labels is not an adequate method of description and […] proposed a description in terms of a dimensional framework derived from empirical studies (Eysenck & Claridge, 1962, p. 46). According to the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association [APA], 2013) classification of personality disorders, the first general diagnostic criterion (criterion A) is that it should be an "enduring pattern of inner experience and behavior that deviates markedly from the expectations of the individual's culture and is manifested in at least two of the following areas: cognition, affectivity, interpersonal functioning, or impulse control" (p. 647). Traditionally the DSM considers that the 10 personality disorders are grouped into three clusters based on some symptomatic similarities. Cluster A is characterized by odd and eccentric behaviors and includes paranoid, schizoid, and schizotypal personality disorders. Cluster B is characterized by dramatic, emotional, or erratic behaviors and includes antisocial, borderline, histrionic, and narcissistic personality disorders. Finally, cluster C is characterized by anxious and fearful behaviors and includes avoidant, dependent, and obsessive-compulsive personality disorders. As such,

according to the general definition given by the *DSM-5*, personality disorders can be conceived as a personality system that promotes behaviors that are not well adapted to the social requirements or expectations of a specific cultural context or that do not function well in a specific environment (Magnavita, 2004). Several authors have mentioned that this categorical model of personality disorders suffers from different weaknesses, such as excessive comorbidity, and lack of convergent and discriminant validity (e.g., Clark, 2007). The DSM-5 also acknowledged "that this clustering system […] has serious limitations and has not been consistently validated" (APA, 2013, p. 646). For this reason, several authors have recently argued that personality disorders could be more accurately described using contemporary models of personality traits, such as the FFM (Samuel & Widiger, 2008).

If the cultural context has an impact on personality disorders, this could affect the underlying structure of personality disorders or have an influence on the characteristic adaptations or regulation processes allowing a person to express adapted behaviors. Thus, personality disorders could be considered as extreme and maladaptive variants of normal personality dimensions, or as dysfunctions associated with the general personality system, and in particular with regulation processes.

Concerning the structure underlying personality disorders, most studies have considered four higher-order components that Livesley, Jang, and Vernon (1998) called emotional dysregulation, dissocial behavior, inhibition, and compulsivity. This structure has been replicated in different European (Van Kampen, 2002), Asian (Zheng, Want, Huang, Sun, Zhu, & Livesley, 2002) and African cultures (Rigozzi et al., 2009). Moreover, this four-factor structure replicated well across four regions of French-speaking Africa (North, West, Central, and East; Riggozzi et al., 2009). Concerning the relationships between personality disorders and models of normal personality traits, several studies have found meaningful associations (Widiger & Costa, 2012).

For example, a schizoid personality disorder is usually associated with low scores on extraversion and openness. Rossier et al. (2008) observed the same associations in French-speaking Africa (see Table 3-2) as in Switzerland (see also Dahourou & Rossier, 2008). These patterns of associations were also stable across the regions of French-speaking Africa. Recently, Kounou et al. (2015) studied the relationships between childhood maltreatment, normal personality, and personality disorders in a sample of patients treated for major depression in Togo and France. They observed that in both samples, childhood maltreatment was associated with cluster A personality disorder symptoms, and that emotional instability or neuroticism was associated with all three clusters of personality disorder (see also Kounou et al., 2013). Noted however that the relationship between childhood maltreatment and personality disorders was partially mediated by normal personality, in Togo only.

The overall prevalence rate for personality disorders is 9.1%, with a prevalence rate of 5.7% for cluster A, of 1.5% for cluster B, and of 6.0% for cluster C according to Lenzenweger, Lane, Loranger, and Kessler (2007), and comorbidity between disorders of different clusters is frequent. Moreover, the prevalence rates of personality disorders vary between studies (e.g., Grant et al., 2004), and from one region or culture to another, with lower prevalence rates in Nigeria and Western Europe compared to South Africa and the United States (Huang et al., 2009). In fact, studies reporting prevalence rates in non-Western societies are very scarce and concern only few countries, and African and South American countries are much underrepresented. Still, evidence suggests that the overall prevalence rate of personality disorders in a sample of psychiatric hospital patients is low in Kenya (20%) compared to the prevalence of about 50% usually observed in the Western countries (Thuo et al., 2008). This is confirmed by a study by Alexandre, Ribeiro, and Cardoso (2010) who compared 189 patients who were first-, second-, or third-generation migrants of African origin with 788 patients from mixed or Western

origin. Patients of African origin were more frequently diagnosed with mental illness such as

schizophrenia (24.0% vs. 17.6%) but less frequently with illnesses such as personality disorders

(1.0% vs. 4.0%). This type of results is also in line with those of other cultures, suggesting that

some personality disorders might be less frequent in collectivistic countries, such as India for

example (Gupa & Mattoo, 2010). These disparities might be attributed to some methodological

bias in assessing these personality disorders, but also simply to the impact of the socio-cultural

context. For example, Paris (1998) suggested that in collectivistic cultures the prevalence rates

should be higher for cluster C and lower for cluster B personality disorders. This should be due to

excessive social control exacerbating avoidant, dependent, and obsessive-compulsive traits, and

to an important social support reducing and common social values preventing the expression of

antisocial, histrionic, or narcissistic traits. Such influences of the cultural context on the

prevalence rates of the different personality disorders make sense, but appear difficult to observe

empirically in French-speaking Africa. Rossier and colleagues (2013) observed that scores were

simply systematically higher in Burkina Faso for all personality disorders compared to

Switzerland, but that profiles remain very similar, suggesting that such scales are sensitive to the

cultural context and that scores cannot be compared.

The tolerance of the social environment for abnormal behaviors obviously also has an

impact on the definition of personality disorders in a specific context. Sow (1977) suggested that

in some African regions the social environment might be quite tolerant of abnormal behaviors.

This can give a slightly different meaning to Sow's idea that personality disorders can be

understood as resulting from a conflict between the different spheres of a person. Personality

disorders or dysfunctional personalities could be the result of a mismatch between a person and

their social political, economical and cultural context, which does not allow this person to adapt,

and express culturally appropriate behaviors. An illustration of the consequences of such a

mismatch was given by the study of Caldewell-Harris and Ayçiçegi (2006) conducted in Turkey and the United States. They observed that Turkish students scoring high on individualism and/or low on collectivism tend to score higher on personality disorder traits, such as schizoid, antisocial, or borderline traits. On the contrary, American students low on individualism and/or high on collectivism tend to score higher on the same personality traits, illustrating the fact that having individual characteristics or values that probably fit the cultural environment promotes or allows a better adaptation and could be considered as a protective factor buffering the development of mental disorders, thus promoting well-being (Triandis, 2000). For this reason, both cultural and personal values have to be considered to better understand the variation of prevalence rates across cultures.

Personality Assessment in French-Speaking African Cultures

In French-speaking Africa, as in other regions of the world, psychological assessment is a very important aspect of psychologists' work. Many interventions in the field of school, clinical or counseling psychology include an initial assessment. Indeed, it is ubiquitous in various interventions and is even regarded as the first stage of the work of the psychologist. This initial assessment allows the psychologist to identify some factors having an impact on the difficulties of a patient/beneficiary/client/counselee so as to define and plan his/her intervention. An evaluation is an act by which the psychologist express an opinion about an event, a person, or an object, considering one or a set of criteria (Noizet & Caverni, 1978). This definition highlights the problem of the choice of criteria.

The use of psychological assessment tools in French-speaking Africa, particularly in Burkina Faso, is explained by different factors. With Internet, some tests are easily available , but this raises the question of their psychometric validity. As mentioned, the cultural context in which a test is developed obviously has an impact on its content. In addition, the test should have

been standardized in the context where it is used. Indeed, the use of psychological tests with people from different cultures from the normative population raises many questions both in terms of the administration, the computation of the scores, or interpretation of the results (Vercruysse & Chomé, 2002). There are very few instruments that provide norms for French-speaking African countries even if some data are actually available. Publishers do not seem very interested in issuing specific products for a market which they might perceive as relatively small. However, psychological assessment is popular among professionals of that region because it is perceived as a tool helping professionals to analyze a situation and to generate diagnostic hypotheses.

The use of psychological assessment tools should imply having access to valid instruments or developing culturally adapted instruments, which is not easy in a heterogeneous and dynamic cultural context (Dahourou, 2003). For example in Burkina Faso, there are over 60 different ethnic groups speaking different languages. Should we offer tests in French, knowing that this is not the mother tongue of the population? If specific norms are not available, the interpretation of the results is obviously problematic, given that the instruments assessing personality do not seem to reach scalar invariance. The lack of instruments with specific norms is therefore a real problem. For this reason, it would be important to adapt more instruments, also in local languages, and to develop specific norms more systematically. In French-speaking Africa, psychologists use both projective and objective tests, but the problem of adequacy to the cultural context remains the same (e.g. Crasson, Stassart, & Timsit, 1990). One aspect that may have an important impact on the assessment procedure is that individuals are usually unfamiliar with the testing situation, especially in rural areas where a large part of the population is illiterate. Moreover, self-evaluation does not seem to be customary in these populations. For example, Burkinabè are used to being modest, but it is also culturally inappropriate to deprecate oneself. For this reason, it may difficult for them to answer some negatively formulated items. Moreover,

as mentioned by Rolland (2004), when the reading and verbal abilities are insufficient, people will have difficulties in understanding the items and this will of course increase the measurement error. Despite the numerous difficulties in conducting personality assessments in French-speaking Africa, several instruments are available in French or Arabic. Moreover, appropriate reference groups are available for instruments such as the Levenson locus of control scale, the EPQ, the IPDE, the NEO-PI-R, or the ZKA-PQ, and norms could thus be developed.

The emic-etic approach used to develop the SAPI (Fetvadjiev et al., 2015) is certainly also a method that would allow developing new personality inventories for the French-speaking part of Africa, in different countries with different ethnic groups. However, considering that in a country like Burkina Faso 60 different ethnic groups can be found, these cannot all be considered but should be grouped in larger families (Rossier et al., 2013). To our knowledge, no lexical studies of personality descriptors have been conducted in French-speaking Africa, and having an idea of the type of descriptors available in the local languages of this region and of the underlying structure of these descriptors would be of interest. The availability of psychological assessment instruments in local languages is especially important for preliterate cultures or in regions where part of the population is illiterate. In this case, the use of interviews seems to be an adequate technique. Some interviews to assess personality traits, such as the Structured Interview for the Five-Factor Model (SIFFM, Trull & Widiger, 1997), or personality disorders, such as the IPDE, are available and are certainly useful in such a cultural context, but they would need to be translated in the local languages. Finally, it would also be very interesting to study whether the 6-dimensional structure found in South Africa (positive social-relational, negative social-relational, neuroticism, extraversion, conscientiousness, openness) would also be relevant in French-speaking Africa.

Conclusion

Most studies have shown that culture has only a modest impact on the structure of personality traits. But it certainly has a greater impact on characteristic adaptations or processes regulating the expression of traits, and an even more crucial influence on the self-concept of people and their narrative identity or life story. Indeed, culture provides the individual with a structure in terms of norms and constraints and a set of shared values and narratives that helps the individual to define his socially situated identity (McAdams, 2014). For this reason, an underlying similar level on a disposition such as neuroticism can be expressed quite differently in the United States or in Africa. Such negative affectivity can be associated with excessive rumination or depression in Western countries, whereas it can be associated with somatic symptoms or magical thinking in some rural African regions, and could thus affect differently the development of that identity (Adams, 2005). One interesting result is that the relationship between normal personality and personality disorders is similar in French-speaking African cultures as in Western societies, even if the prevalence rates of personality disorders seem to be influenced by the cultural environment. The status of national mean personality profiles has yet to be determined. Do they result from an artifact, do they give us some meaningful information about the interaction between people's personality and the cultural context; the question remains open. It is interesting to note that empirical studies on personality and cultures confirm what Linton wrote in 1945, although we still do not know how these norms are established and how exactly they influence people's behavioral expression:

"All anthropologists who have come to know the members of non-European societies intimately are in substantial agreement on certain points. These are: (1) Personality norms differ in different societies. (2) The members of any society will always show considerable individual variation in personality. (3) Much of the same range of variation and much the same personality types are to be found in all societies." (pp. 127-128)

Research in French-speaking African cultures in the area of personality psychology should really be encouraged in order to allow the development of more culturally adapted psychological assessment tools. Considering that several personality inventories developed in Western cultures seem to be valid in French-speaking African cultures, such as the EPQ, the NEO-PI-R, or the ZKA-PQ, it would be important to develop specific norms for these cultures. Research on more fundamental aspects could also be of great interest. The status of models such as the model by Sow (1977, 1978) that can be seen as a shared representation by a cultural group or as popular folklore is not clear. Sow's model is now almost 40 years old, and it is not certain that it still corresponds to the current representation of the people of Sub-Saharan cultures. Nevertheless, this type of shared representations confirms the importance of adopting a transcultural perspective to understand how personality should be conceived, in particular in relation to psychopathology. Would a lexical study of the specific personality descriptors of French-speaking African cultures serve to find a structure similar to that observed in South Africa, or would the structure be similar to those observed in other lexical studies such as the Big Six or the Big Two? Many questions remain open and much has to be done in order to increase our knowledge about the exact nature of the relationship between personality and culture in this specific region, and to develop and make available adapted instruments with the proper norms to allow professionals to conduct high-quality psychological assessments.

References

Abdel-Khalek, A. M. (1981). Extraversion and neuroticism as basic personality dimensions in

Egyptian samples. *Personality and Individual Differences*, *2*, 91-99. doi:10.1016/0191-

8869(81)90001-5

Abdel-Khalek, A. M., & Eysenck, S. B. G. (1983). A cross-cultural study of personalty: Egypt

and England. In A. M. Abdel-Khalek (Ed.). *Research in Behaviour and Personality* (Vol.

3, pp. 215-226). Alexandria, Egypt: Dar Al-Maaref.

Abdel-Khalek, A. M., Ibrahim, A. S., Budek, M. H. (1986). The factorial structure of the 16PF

and EPQ in Egyptian samples: A preliminary study. *Personality and Individual*

Differences, *7*, 65-72. doi:10.1016/0191-8869(86)90109-1

Adams, G. (2005). The cultural grounding of personal relationship: Enemyship in North

American and West African worlds. *Journal of Personality and Social Psychology*, *88*,

948-968. doi:10.1037/0022-3514.88.6.948

Alexandre, J., Ribeiro, R., & Cardoso, G. (2010). Ethnic and clinical characteristics of a

Portuguese psychiatric inpatient population. *Transcultural Psychiatry*, *47*, 314–321.

doi:10.1177/1363461510369191

Allik, J., & McCrae, R. R. (2004). Toward a geography of personality traits: Patterns of profiles

across 36 cultures. *Journal of Cross-Cultural Psychology*, *35*, 13-28.

doi:10.1177/0022022103260382

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders

(5th ed.). Washington, DC: Author.

Bandura, A. (1999). Social cognitive theory of personality. In L. Pervin & O. John (Eds.),

Handbook of personality: Theory and research (pp. 154-196). New York, NY: Guilford

Press.

Bauman, Z. (2000). *Liquid modernity*. Cambridge, UK: Polity Press.

Barrett, P., & Eysenck, S. (1984). The assessment of personality factors across 25 countries. *Personality and Individual Differences*, *5*, 615-632. doi:10.1016/0191-8869(84)90110-7

Barrett, P. T., Petrides, K. V., Eysenck, S. B. G., & Eysenck, H. J. (1998). The Eysenck personality questionnaire: An examination of the factorial similarity of P, E, N, and L across 34 countries. *Personality and Individual Differences*, *25*, 805-819. doi:10.1016/S0191-8869(98)00026-9

Benedict, R. (1934). *Patterns of culture*. Boston, MA: Houghton Mifflin.

Berry, J. W., Poortinga, Y. H., Segall, M. H., & Dasen, P. R. (2002). *Cross-cultural psychology: Research and applications* (2nd ed.). Cambridge, UK: Cambridge University Press.

Berry, J. W., Poorting, Y. H., Breugelmans, S. M., Chasiotis, A., & Sam, D. L. (2011). *Cross-cultural psychology: Research and applications* (3rd ed.). Cambridge, UK: Cambridge University Press.

Caldwell-Harris, C. L., & Ayçiçegi, A. (2006). When personality and culture clash: The psychological distress of allocentrics in an individualist culture and idiocentrics in a collectivist culture. *Transcultural Psychiatry*, *43*, 331-361. doi:10.1177/1363461506066982

Clark, L. A. (2007). Assessment and diagnosis of personality disorder: Perennial issues and an emerging reconceptualization. *Annual Review of Psychology*, *58*, 227-257. doi:10.1146/annurev.psych.57.102904.190200

Corin, E. (1980). Vers une réappropriation de la dimension individuelle en psychologie africaine [Towards a reappropriation of the individual dimension in African psychology]. *Canadian Journal of African Studies/Revue Canadienne des Études Africaines*, *14*(1), 135-156.

Cheung, F. M., & Leung, K. (1998). Indigenous personality measures: Chinese examples.

Journal of Cross-Cultural Psychology, *29*, 233-248. doi:10.1177/00220221982291012

Church, A. T., Alvarez, J. M., Mai, N. T. Q., French, B. F., Katigbak, M. S., & Ortiz, F. A.
   (2011). Are cross-cultural comparisons of personality profiles meaningful? Differential
   item and facet functioning in the Revised NEO Personality Inventory. *Journal of
   Personality and Social Psychology*, *101*, 1068-1089. doi:10.1037/a0025290

Crasson, M., Stassart, M., & Timsit, M. (1990). Attitude face au choix vocationnel chez des
   adolescents maghrébins: Dynamique conflictuelle à travers T.A.T. et Rorschach. *Bulletin
   de Psychologie*, *43*(14-17), 705-715.

Dahourou, D. (2003). Validation de la version française de l'échelle de contrôle de Levenson
   (IPS) chez des sujets du Burkina Faso [Validation of the French-version of Levenson's
   control scale in sample from Burkina Faso]. *Les Cahiers du CERLESHS*, *20*, 47-66.

Dahourou, D., Koné, D., & Mullet, E. (1995). Prediction of performance from motivation and
   ability information in Burkina Faso adolescents. *Journal of Psychology*, *129*, 417-431.
   doi:10.1080/00223980.1995.9914978

Dahourou, D., & Rossier, J. (2008). Personnalité et troubles de la personnalité au Burkina Faso et
   en Suisse [Personality and personality disorders in Burkina Faso and Switzerland]. In E.
   Loarer, P. Vrignaud, J.-L. Mogenet, F. Cuisinier, H. Gottesdiener, & P. Mallet (Eds.),
   Perspectives différentielles en psychologie [*Individual differences perspectives in
   psychology*] (pp. 195-198). Rennes, France: Presses Universitaires de Rennes.

Duarte, M. E., & Rossier, J. (2008). Testing and assessment in an international context : Cross-
   and multi-cultural issues. In J. Athanasou & R. Van Esbroeck (Eds.), *International
   handbook of career guidance* (pp. 489-510). New York, NY: Springer Science.
   doi:10.1007/978-1-4020-6230-8_24

Eysenck, H. J., & Claridge, G. (1962). The position of hysterics and dysthymics in a two-

dimensional framework of personality description. *Journal of Abnormal and Social Psychology*, *64*, 46-55. doi:10.1037/h0047528

Eysenck, S. B. G., & Abdel-Khalek, A. M. (1989). A cross-cultural study of personality: Egyptian and English children. *International Journal of Psychology*, *24*, 1-11. doi:10.1080/00207594.1989.10600028

Fetvadjiev, V. H., Meiring, D., van de Vijver, F. J. R., Nel, J. A., & Hill, C. (2015). The South African Personality Inventory (SAPI): A culture-informed instrument for the country's main ethnocultural groups. *Psychological Assessment*, *27*, 827-837. doi:10.1037/pas0000078

Fierro, A. (n.d.). *Afrique-Occidentale française (AOF)* [*French West Africa (AOF)*]. In *Encyclopædia Universalis.* Retrieved September 28, 2015, from http://www.universalis-edu.com/encyclopedie/afrique-occidentale-francaise/

Fierro, A. (n.d.). *Afrique-Équatoriale française (AEF)* [*French Equatorial Africa (AEF)*]. In *Encyclopædia Universalis.* Retrieved September 28, 2015, from http://www.universalis-edu.com/encyclopedie/afrique-equatoriale-francaise/

Grant, B. F., Hasin, D. S., Stinson, F. S., Dawson, D. A., Chou, S. P., Ruan, W. J., & Pickering, R. P. (2004). Prevalence, correlates, and disability of personality disordes in the United States: Results from the national epidemiologic survey on alcohol and related conditions. *Journal of Clinical Psychiatry*, *65*, 948-958. doi:10.4088/JCP.v65n0711

Gupta, S., & Mattoo, S. K. (2012). Personality disorders: Prevalence and demography at a psychiatric outpatient in North India. *International Journal of Social Psychiatry*, *58*, 146-152. doi:10.1177/0020764010387548

Harding, L. (1971). L'école des pères blancs au Soudan français, 1895-1920 [The school of the White Fathers in French Sudan, 1895-1920]. *Cahiers d'Études Africaines*, *11*(41), 101-

128.

Heaven, P., Connors, J., & Stones, C. (1994). Three or five personality dimensions? An analysis

of natural language terms in two cultures. *Personality and Individual Differences*, *17*,

181-189. doi: 10.1016/0191-8869(94)90024-8

Heine, S. J., & Hamamura, T. (2007). In search of East Asian self-enhancement. *Personality and*

Social Psychology Review, *11*, 4-27. doi:10.1177/1088868306294587

Heine, S. J., Lehman, D. R., Peng, K., & Greenholtz, J. (2002). What's wrong with cross-cultural

comparisons of subjective Likert scales?: The reference-group problem. *Journal of*

Personality and Social Psychology, *82*, 903-918. doi:10.1037/0022-3514.82.6.903

Hofstede, G. (2001). *Culture's consequence: Comparing values, behaviors, institutions, and*

organizations across nations (2nd ed.). Thousand Oaks, CA: Sage.

Hofstede, G., & McCrae, R. R. (2004). Personality and culture revisited: Linking traits and

dimensions of culture. *Cross-Cultural Research*, *38*, 52-88.

doi:10.1177/1069397103259443

Huang, Y., Kotov, R., de Girolamo, G., Preti, A., Angermeyer, M., Benjet, C.,…Kessler, R. C.

(2009). DSM–IV personality disorders in the WHO World Mental Health Surveys. *The*

British Journal of Psychiatry, *195*, 46-53. doi:10.1192/bjp.bp.108.058552

Ibrahim, A. S. (1982). The factorial structure of the Eysenck personality questionnaire among

Egyptian students. *The Journal of Psychology*, *112*, 221-226.

doi:10.1080/00223980.1982.9915377

John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative big five trait

taxonomy: History, measurement, and conceptual issues. In O. P. John, R. W. Robins, &

L A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 114-158).

New York, NY: Guilford Press.

Johnson, W., Spinath, F., Krueger, R. F., Angleitner, A., & Riemann, R. (2008). Personality in Germany and Minnesota: An IRT-based comparison of MPQ self-reports. *Journal of Personality*, *76*, 665-706. doi:10.1111/j.1467-6494.2008.00599.x

Katigbak, M. S., Church, A. T., & Akamine, T. X. (1996). Cross-cultural generalizability of personality dimensions: Relating indigenous and imported dimensions in two cultures. *Journal of Personality and Social Psychology*, *70*, 99-114. doi: 10.1037/0022-3514.70.1.99

Kayira, J. (2015). (Re)creating spaces for uMunthu: Postcolonial theory and environmental education in southern Africa. *Environmental Education Research*, *21*, 106-128. doi:10.1080/13504622.2013.860428

Kounou, K. B., Bui, E., Dassa, K. S., Hinton, D., Fischer, L., Djassoa, G.,…Schmitt, L. (2013). Childhood trauma, personality disorders symptoms and current major depressive disorders in Togo. *Social Psychiatry and Psychiatric Epidemiology*, *48*, 1095-1103. doi:10.1007/s00127-012-0634-2

Kounou, K. B., Dogbe Foli, A. A., Djassoa, G., Amétépé, L. K., Rieu, J., Mathur, A., Biyong, I., & Schmitt, L. (2015). Childhood maltreatment and personality disorders in patients with a major depressive disorder: A comparative study between France and Togo. *Transcultural Psychiatry*, *52*, 681-699. doi:10.1177/1363461515572001

Lange, M.-F. (2007). Espaces scolaires en Afrique francophone [Scholastic space in French Africa]. *Ethnologie Française*, *37*, 639-645. Doi:10.3917/ethn.074.0639

Lenzenweger, M. F., Lane, M. C., Loranger, A. W., & Kessler, R. C. (2007). DSM-IV personality disorders in the national comorbidity survey replication. *Biological Psychiatry*, *62*, 553-564. doi:10.1016/j.biopsych.2006.09.019

Linton, R. (1945). *The cultural background of personality*. New York, NY: Appleton-Century-

Crofts.

Livesley, W. J., Jang, K. L., & Vernon, P. A. (1998). Phenotypic and genetic structure of traits

delineating personality disorders, *Archives of General Psychiatry*, *55*, 941-948.

doi:10.1001/archpsyc.55.10.941

Magnavita, J. J. (2004). Classification prevalence, and etiology of personality disorders: Related

issues and controversy. In J. J. Magnavita (Ed.), *Handbook of personality disorders:*

Theory and practice (pp. 3-23). Noboken, NJ: John Wiley & Sons.

Matsumoto, D. (2007). Culture, context, and behavior. *Journal of Personality*, *75*, 1285-1319.

Doi:10.1111/j.1467-6494.2007.00476.x

Mbiti, J. S. (1969). *African religions and philosophy*. New York, NY: Praeger.

McAdams, D. P. (2014). The psychological self as actor, agent, and author. *Perspectives on*

Psychological Science, *8*, 272-295. doi:10.1177/1745691612464657

McCrae, R. R. (2001). Trait psychology and culture: Exploring intercultural comparisons.

Journal of Personality, *69*, 819-846. doi:10.1111/1467-6494.696166

McCrae, R. R. (2002). NEO-PI-R data from 36 cultures. In R. R. McCrae & J. Allik (Eds.), *The*

five-factor model of personality across cultures (pp. 105-125). New York, NY: Kluwer

Academic/Plenum.

McCrae, R. R. (2013). Exploring trait assessment of samples, persons, and cultures. *Journal of*

Personality Assessment, *95*, 556-570. doi:10.1080/00223891.2013.821075

McCrae, R. R., & Costa, P. T., Jr. (1999). A five-factor theory of personality. In L. Pervin & O.

John (Eds.), *Handbook of personality: Theory and research* (pp. 139-153). New York,

NY: Guilford Press.

McCrae, R. R., Terraciano, A., & 78 Members of the Personality Profiles of Cultures Project

(2005a). Universal features of personality traits from the observer's perspective: Data

from 50 cultures. *Journal of Personality and Social Psychology*, *88*, 547-561. doi:10.1037/0022-3514.88.3.547

McCrae, R. R., Terracciano, A., & 79 Members of the Personality Profiles of Cultures Project (2005b). Personality profiles of cultures: Aggregate personality traits. *Journal of Personality and Social Psychology*, *89*, 407-425. doi:10.1037/0022-3514.89.3.407

Mõttus, R., Allik, J., Realo, A., Rossier, J., Zecca, G., Ah-Kion, J.,… Johnson, W. (2012). The Effect of Response Style on Self-Reported Conscientiousness across 20 Countries. *Personality and Social Psychology Bulletin*, *38*, 1423-1436. doi:10.1177/0146167212451275

Noizet, G., & Caverni, J.-P. (1978).   [School assessment psychology]. Paris, France: Presses Universitaires de France.

Nye, C. D., Roberts, B. W., Saucier, G., & Zhou, X. (2008). Testing the measurement equivalence of personality adjective items across cultures. *Journal of Research in Personality*, *42*, 1524-1536. doi.10.1016/j.jrp.2008.07.004

Paris, J. (1998). Personality disorders in sociocultural perspective. *Journal of Personality Disorders*, *12*, 289-301. doi:10.1521/pedi.1998.12.4.289

Piedmont, R. L., Bain, E., McCrae, R. R., & Costa, P. T., Jr. (2002). The applicability of the five-factor model in a sub-Saharan culture. In R. R. McCrae & J. Allik (Eds.), *The five-factor model of personality across cultures* (pp. 155-173). New York, NY: Kluwer Academic/Plenum.

Rigozzi, C., Rossier, J., Dahourou, D., Adjahouisso, M., Ah-Kion, J., Amoussou-Yeye, D., …Verardi, S. (2009). A cross-cultural study of the higher-order structures underlying personality disorders in French-speaking Africa and Switzerland. *Journal of Personality Disorders*, *23*, 175-186. doi: 10.1521/pedi.2009.23.2.175

Rolland, J.-P. (2004). *L'évaluation de la personnalité : Le modèle en cinq facteurs* [Personality assessment: The five-factor model]. Bruxelles, Belgium: Mardaga.

Rossier, J. (2015a). Career adaptability and life designing. In L. Nota & J. Rossier (Eds.), *Handbook of life design: From practice to theory and from theory to practice* (pp. 153-167). Göttingen, Germany: Hogrefe.

Rossier, J. (2015b). Personality and career interventions. In P. J. Hartung, M. L. Savickas, & W. B. Walsh (Eds.), *APA handbook of career intervention: Foundations* (Vol. 1, pp. 327-350). Washington, DC: American Psychological Association. doi:10.1037/1438-018

Rossier, J., Aluja, A., Blanch, A., Barry, O., Hansenne, M., Carvalho, A., …Karagonlar, G. (2015). *Cross-cultural generalizability of the alternative five-factor model using the Zuckerman-Kuhlman-Aluja personality questionnaire*. Manuscript submitted for publication.

Rossier, J., Aluja, A., García, L. F., Angleitner, A., de Pascalis, V., Wang, W., Kuhlman, M., & Zuckerman, M. (2007). The cross-cultural generalizability of Zuckerman's alternative five-factor model of personality. *Journal of Personality Assessment*, *89*, 188-196. doi:10.1080/00223890701468618

Rossier, J., Dahourou, D., & McCrae, R. R. (2005). Structural and mean-level analyses of the five-factor model and locus of control: Further evidence from Africa. *Journal of Cross-Cultural Psychology*, *36*, 227-246. doi:10.1177/0022022104272903

Rossier, J., Maggiori, C., & Zimmermann, G. (2015). From career adaptability to subjective identity forms. In A. di Fabio, & J.-L. Bernaud (Eds.), *The construction of the identiy in 21st century: A Festschrift for Jean Guichard* (pp. 45-57). New York, NY: Nova Science Publishers.

Rossier, J., Ouedraogo, A., Dahourou, D., Verardi, S., & Meyer de Stadelhofen, F. (2013).

Personality and personality disorders in urban and rural Africa: Results from a field trial in Burkina Faso. *Frontiers in Psychology*, *4*, 79. doi:10.3389/fpsyg.2013.00079

Rossier, J., Rigozzi, C., & Personality Across Culture Research Group (16 members). (2008). Personality disorders and the five-factor model among French speakers in Africa and Europe. *Canadian Journal of Psychiatry*, *53*(8), 534-544.

Rossier, J., Verardi, S., Genoud, P. A., & Zimmermann, G. (2012). Ouverture émotionnelle et personnalité [Emotional openness and personality]. In M. Reicherts, P. A. Genoud, & G. Zimmermann (Eds.) *L'ouverture émotionnelle: Une nouvelle approche du vécu et du traitement émotionnels* (pp. 69-84). Wavre, Bergique: Mardaga.

Samuel, D. B., & Widiger, T. A. (2008). A meta-analytic review of the relationships between the five-factor model and *DSM-IV-TR* personality disorders: A facet level analysis. *Clinical Psychology Review*, *28*, 1326-1342. doi:10.1016/j.cpr.2008.07.002

Schmitt, D. P., Allik, J., McCrae, R. R., Benet-Martínez, V., et al. (2007). The geographic distribution of the big five personality traits: Patterns and profiles of humain self-description across 56 nations. *Journal of Cross-Cultural Psychology*, *38*, 173-212. doi:10.1177/0022022106297299

Smith, P. B. (2004). Acquiescent response bias as an aspect of cross-cultural communication style. *Journal of Cross-Cultural Psychology*, *35*, 50-61. doi:10.1177/0022022103260380

Soueif, M. I. (1965). Response sets, neuroticism and extraversion. *Acta Psychologica*, *24*, 29-40. doi:10.1016/0001-6918(65)90003-X

Sow, I. (1977). *Psychiatrie dynamique africaine* [Psychoanalytical African psychiatry]. Paris, France: Payot.

Sow, I. (1978). *Les structures anthropologiques de la folie en Afrique noire* [Anthropological structures of madness in central Africa]. Paris, France: Payot.

Spaëth, V. (2001) . L'enseignement du français en AOF [The teaching of French in French West Africa]. *Le Français Aujourd'hui*, *132*, 78-86. doi:10.3917/lfa.132.0078

Thalmayer, A. G., & Saucier, G. (2014). The questionnaire big six in 26 nations: Developing cross-culturally applicable big six, big five and big two inventories. *European Journal of Personality*, *28*, 482-496. doi:10.1002/per.1969

Thuo, J., Ndetei, D. M., Maru, H., and Kuria, M. (2008). The prevalence of personality disorders in a Kenyan inpatient sample. *Journal of Personality Disorders*, *22*, 217–220. doi:10.1521/pedi.2008.22.2.217

Triandis, H. C. (2000). Cultural syndromes and subjective well-being. In E. F. Diener & E. M. Suh (Eds.), *Subjective well-being across cultures* (pp. 87-112). Cambridge, MA: MIT Press.

Trull, T. J., & Widiger, T. A. (1997). *Structured Interview for the Five-Factor Model of Personality (SIFFM): Professional manual*. Odessa, FL: Psychological Assessment Resources.

Valchev, V. H., Nel, J. A., van de Vijver, F. J. R., Meiring, D., de Bruin, G. P., & Rothmann, S. (2012). Similarities and differences in implicit personality concepts across ethnocultural groups in South Africa. *Journal of Cross-Cultural Psychology*, *44*, 365-388. doi:10.1177/0022022112443856

van de Vijver, F., & Leung, K. (1997). *Methods and data analysis for cross-cultural research.* Newbury Park, CA: Sage.

van Haaften, E. H., & van de Vijver, F. J. R. (2003). Human resilience and environmental degradation: The eco-cultural link in the Sahel. *International Journal of Sustainable Development & World Ecology*, *10*, 85-99. doi:10.1080/13504500309469788

van Kampen, D. (2002). The DAPP-BQ in the Netherlands: Factor structure and relationship with basic personality dimensions. *Journal of Personality Disorders*, *16*, 235-254. doi:10.1521/pedi.16.3.235.22536

Verardi, S., Dahourou, D., Ah-Kion, U., Bhowon, U., Ng Tseung, C., Amoussou-Yeye, D.,… Rossier, J. (2010). Psychometric properties of the Marlowe-Crowne Social Desirability Scale in eight African countries and Switzerland. *Journal of Cross-Cultural Psychology*, *41*, 19-34. doi:10.1177/0022022109348918

Vercruysse, N., & Chomé, C. (2002). Situation projective et rencontre interculturelle [Projective situation and intercultural encounter]. *Cahiers de Psychologie Clinique*, *18*, 171-188. doi:10.3917/cpc.018.0171

Verdelhan-Bourgade, M. (2014). Programmes et instructions officielles pour le français en Afrique francophone: Un rapport ambigu à la décolonisation [Programs and official instructions for the French in French-speaking Africa: An ambiguous relationship to decolonization]. *Mots: Les Langages du Politique*, *106*, 27-42.

Vukasović, T., & Bratko, D. (2015). Heritability of personality: A meta-analysis of behavior genetic studies. *Psychological Bulletin*, *141*, 769-785. doi:10.1037/bul0000017

Widiger, T. A., & Costa, P. T., Jr. (2012). Integrating normal and abnormal personality structure: The five-factor model. *Journal of Personality*, *80*, 1471-1506. doi:10.1111/j.1467-6494.2012.00776.x

Yik, M. S. M., Bond, M. H., & Paulhus, D. L. (1998). Do Chinese self-enhance or sef-efface? It's a matter of domain. *Personality and Social Psychology Bulletin*, *24*, 399-406. doi:10.1177/0146167298244006

Zecca, G., Verardi, S., Antonietti, J.-P., Dahourou, D., Adjahouisso, M., Ah-Kion, J.,…Rossier, J. (2012). African cultures and the five-factor model of personality: Evidence for a

specific pan-African structure and profile? *Journal of Cross-Cultural Psychology*, *44*,

684-700. doi:10.1177/0022022112468943

Zheng, W., Wang, W., Huang, Z., Sun, C., Zhu, J., & Livesley, W. J. (2002). The structure of

traits delineating personality disorders in a Chinese sample. *Journal of Personality*

Disorders, *16*, 477-486. doi:10.1521/pedi.16.5.477.22126

Table 3-1

Factor loadings for French-speaking African cultures after Procrustes rotation with the Swiss

loading matrix as the target

| NEO-PI-R facet scales | Factor | | | | | Facet congruence |
	N	E	O	A	C	
N1: Anxiety	**.76**	-.01	.13	-.01	-.07	.99 [a]
N2: Angry Hostility	**.56**	.04	-.03	**-.52**	.02	1.00 [a]
N3: Depression	**.76**	-.07	.10	-.05	-.20	.99 [a]
N4: Self-Consciousness	**.68**	-.11	.07	.09	-.10	.99 [a]
N5: Impulsiveness	.40	.35	.10	-.34	-.25	.98 [a]
N6: Vulnerability	**.61**	.00	-.08	-.04	-.50	.95 [a]
E1: Warmth	-.16	**.65**	.19	.37	.23	.99 [a]
E2: Gregariousness	-.23	**.53**	.15	.14	-.03	.89 [b]
E3: Assertiveness	-.39	.35	.07	**-.41**	.27	.99 [a]
E4: Activity	-.14	.35	.03	-.27	.36	.97 [a]
E5: Excitement seeking	.06	**.41**	**.47**	-.23	-.06	.83
E6: Positive Emotions	-.17	**.63**	.21	.02	.09	.99 [a]
O1: Fantasy	.16	.14	**.41**	-.17	-.25	.95 [a]
O2: Aesthetics	.17	.19	**.60**	.00	.09	.97 [a]
O3: Feelings	.28	.43	.38	-.12	.13	.94 [a]
O4: Actions	-.12	-.03	**.54**	-.06	-.03	.87 [b]
O5: Ideas	-.15	.00	**.69**	-.01	.28	.95 [a]
O6: Values	-.21	-.15	**.55**	.04	-.19	.92 [b]
A1: Trust	-.25	.24	-.02	**.45**	.00	.96 [a]
A2: Straightforwardness	-.02	-.05	-.19	**.60**	.24	.96 [a]
A3: Altruism	.02	**.43**	.02	**.51**	.35	.97 [a]
A4: Compliance	-.16	-.14	-.01	**.71**	-.03	1.00 [a]
A5: Modesty	.17	-.28	.07	**.60**	-.10	.90 [b]
A6: Tender-Mindedness	.24	.28	.26	**.53**	.18	.97 [a]

C1: Competence	-.35	.15	.01	.02	**.67**	.98 [a]
C2: Dutifulness	-.08	-.07	.05	.02	**.68**	.94 [a]
C3: Order	-.08	.02	.00	.28	**.74**	1.00 [a]
C4: Achievement Striving	-.09	.12	.25	-.04	**.69**	.92 [b]
C5: Self-Discipline	-.34	.00	.05	.09	**.75**	.98 [a]
C6: Deliberation	-.27	-.22	-.06	.28	**.60**	.93 [b]
Factor congruence	.98[a]	.95 [a]	.89 [a]	.98 [a]	.97 [a]	.96 [a]

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

Conscientiousness. n = 2,491 for French-speaking Africa. n = 1,774 for Switzerland. Loadings

above .40 in absolute magnitude are in bold. [a] Congruence higher than that of 99% of rotations

from random data. [b] Congruence higher than that of 95% of rotations from random data (McCrae

et al., 1996). Reproduced with the special permission of the publisher, Sage (original table see

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Table 3-2

Replicability of correlations between personality disorders and the main personality dimensions of the five-factor model

PDs	Africa (*n* = 2,014)					Switzerland (*n* = 697)					rhos
	N	E	O	A	C	N	E	O	A	C	
Paranoid	.24	-.05	.05	-.27	-.09	**.31**	-.16	-.09	**-.34**	.01	.70
Schizoid	.13	**-.39**	-.19	-.11	-.05	.09	**-.45**	-.26	-.17	.03	1.00[a]
Schizotypal	**.30**	-.24	-.06	**-.30**	-.25	**.38**	-.28	-.09	**-.35**	-.24	.90[c]
Antisocial	**.32**	.03	.06	**-.41**	**-.39**	.16	.07	.05	**-.45**	**-.30**	.90[c]
Borderline	**.54**	-.03	.06	**-.31**	**-.34**	**.64**	-.07	.02	-.18	-.29	1.00[a]
Histrionic	.24	.20	.05	-.23	-.22	.28	.27	.16	-.13	-.29	.90[c]
Narcissistic	.12	.19	.08	**-.38**	.08	.07	.07	.03	**-.46**	.00	.95[c]
Avoidant	**.41**	-.20	-.12	-.10	-.09	**.50**	**-.42**	-.23	-.11	-.04	1.00[a]
Dependent	**.39**	-.03	-.09	-.19	-.26	**.52**	-.08	-.12	-.02	-.22	.70
Compulsive	.21	-.01	.01	-.20	.03	**.33**	-.12	-.18	-.22	.19	.90[c]
Rank-order correlations						.83[b]	.95[a]	.84[b]	.82[b]	.85[b]	.93[a]

Note. N = Neuroticism; E = Extraversion; O = Openness to Experience; A = Agreeableness; C = Conscientiousness. Correlations equal or above 0.30 in absolute magnitude are in bold. Pearson correlations equal to or above respectively 0.05 and 0.08 were significant (*p* < .05) in Africa and Switzerland. Reproduced with the special permission of the publisher, The Canadian Psychiatric Association (original table see Rossier et al., 2008, p. 539). Further reproduction is prohibited without permission of The Canadian Psychiatric Association. [a]*p* < 0.001, [b]*p* < 0.01, [c]*p* < 0.05.

Ancestors

Psychoses → | ← Trance
possession

Psychological
vitality
principle

Body

Sorcery

Physiological
vitality
principle

Fetishism

Family
lineage → ← Community

Acute organic
illness
Severe neuroses

Spiritual
principle

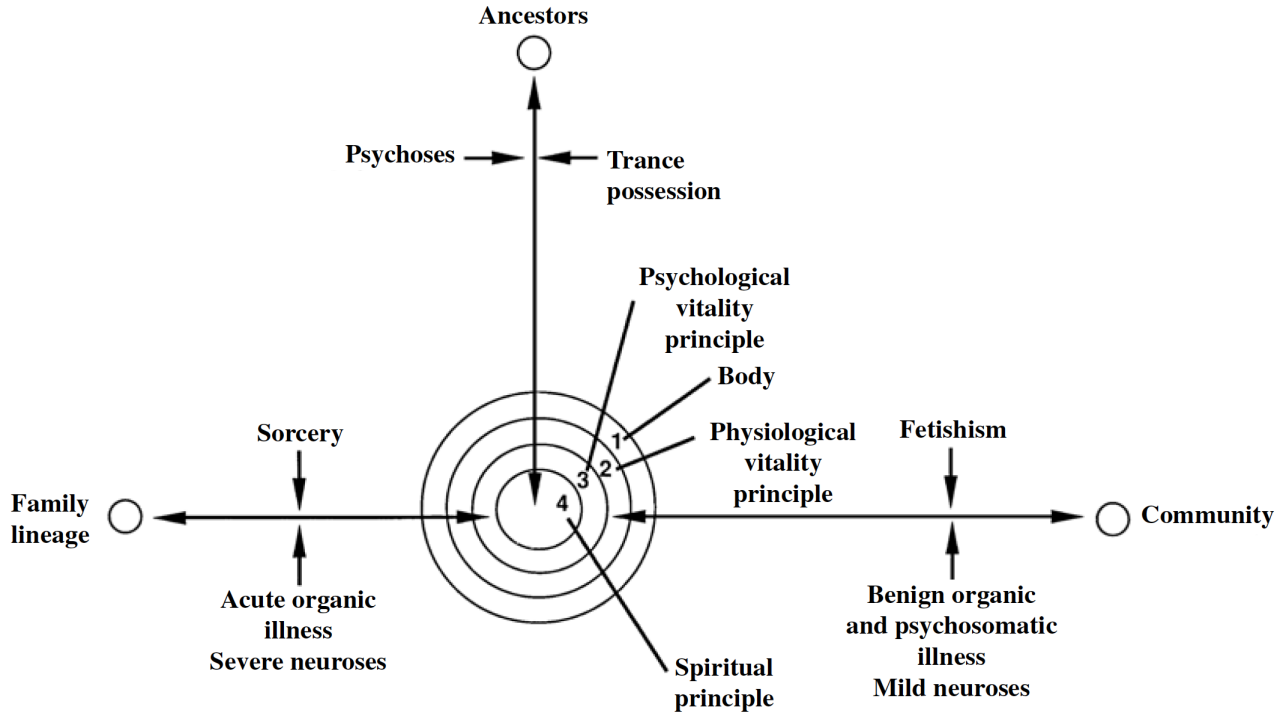Benign organic
and psychosomatic
illness
Mild neuroses

Figure 3-1. Sow's (1977, 198) African personality model as adapted by Berry, Poortinga, Segall, and Dasen (2002, p. 105)