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The Dynamic-Systemic-Process Model of International Competencies for Psychologists and Trainees

Lawrence H. GERSTEIN¹, Erica HURLEY², Ashley HUTCHISON³

Abstract

A new model called the Dynamic-Systemic-Process Model of International Competencies that can contribute to psychologists and trainees developing and employing culturally relevant and effective international skills is introduced. This model represented by double helix Möbius strands is based on previous models of international competencies, and also Dynamic Systems Theory (Thelen & Smith, 1994) and Expectancy Theory (Vroom, 1964). In general, our model is guided by the assumption that psychologists and trainees' learning and development of international competencies is continuous, not sequential but recursive, constantly evolving and changing, cumulative, highly dynamic, and in a reciprocal relationship with the environment. The background, structure, and suppositions linked with this model as well as implications for training and research are discussed.

Keywords: competencies, international, culture, training, multicultural.

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The Dynamic-Systemic-Process Model of International Competencies for Psychologists and Trainees

Psychologists have come a long way in their ability to effectively address cultural issues in their work. While similarities exist between cultural and cross-cultural practices (Gerstein, Heppner, Ægisdóttir, Leung, & Norsworthy, 2009), there is a need to target the development of graduate students (trainees) and psychologists' cross-cultural competencies. This focus may ensure these persons employ culturally appropriate strategies and research methods in today's interconnected world. This article introduces a new cross-cultural competencies model, the *Dynamic-Systemic-Process Model of International Competencies* that can contribute to psychologists and trainees developing and employing culturally effective international skills. The background, structure, and assumptions of the model, and implications for training and research are discussed. Before discussing this unique model, other models of cross-cultural competencies are briefly reviewed.

Models of Cross-Cultural Competencies

Models from psychology. In clinical and counseling psychology, cross-cultural competencies are often a facet of multiculturalism. While targeted interventions have been proposed for working with immigrants living in the United States (U.S.) (e.g., Andrés-Hyman, Ortiz, Anez, Paris, & Davidson, 2006), no frameworks for clinical psychologists to practice in international contexts have emerged. There are three models in the counseling psychology literature, however, that specifically addressed cross-cultural or international competencies. The first (Heppner, Leong, & Gerstein, 2008) focuses on utilizing knowledge about cultural context and subsystems in cross-cultural activities. One important shortcoming of this ecological model is that it does not explain how counseling psychologists' values, beliefs, and behaviors might affect their work in an international context (Hurley & Gerstein, 2013). The second model (Ægisdóttir & Gerstein, 2010) adapted the three-component (Awareness, Knowledge, and Skills sAKSt) multicultural counseling competencies model (Arredondo *et al.*, 1996; Sue, Arredondo, & McDavis, 1992). This new model included four components: Motivation, Awareness, Knowledge, and Skills (MAKS) linked with providing international services in different contexts. One important limitation of this model, however, is that it was not grounded in a theory tied to psychology. A third model, cross-national cultural competence model (Heppner, Wang, Heppner, & Wang, 2012), incorporates a systems perspective and the AKS paradigm.

Models from business. Black and Mendenhall (1990) developed a cross-cultural training model based on social learning theory (Bandura, 1977). In part, a trainee's ability to learn and reproduce new behaviors was thought to lead to skill

development in three areas of cross-cultural competencies: (a) the self-dimension (e.g., self-confidence), (b) the relational dimension (e.g., forming relationships with host nationals), and (c) the perceptual dimension (e.g., the ability to perceive a host culture accurately). Skill development then was considered to directly impact one's job performance, or it was further moderated by one's ability to adjust to a new culture.

Leiba O'Sullivan (1999) extended Black and Mendenhall's (1990) framework by identifying more specific cross-cultural competencies. She argued such competencies could be categorized as stable or dynamic, and that competencies positively affected cross-cultural adjustment. Leiba O'Sullivan claimed, for example, that emotional stability could be considered a stable competency, and factual cultural knowledge could be viewed as a dynamic competency.

Johnson, Lenartowicz, and Apud (2006) also proposed a cross-cultural competence model for persons involved in international business. Their model focused on adequate cultural knowledge, abilities related to cross-cultural adaptation, and personal attributes necessary for cross-cultural competence. Further, the model proposed the link between these three dimensions was moderated by institutional ethnocentrism (i.e., working abroad like at home without consideration of the host culture) and cultural distance (i.e., the general differences between a home and host country's culture). Importantly, greater cultural difference has been found to negatively affect persons' ability to adjust to new cultures (e.g., Thomas & Mueller, 2000).

U.S. Army model. In contrast to the models just mentioned, Abbe, Gulick, and Herman's (2007) framework for leaders in the U.S. Army, largely based on empirical findings, positioned competencies within a broader context. Cross-cultural competencies were conceptualized as knowledge (cultural awareness, cross-cultural schema, cognitive complexity), motivation and affect (attitudes & initiative, empathy, need for closure), and skills (interpersonal skills, self-regulation, flexibility). Although Abbe *et al.* challenged readers to address the complexity of cross-cultural training by recognizing important contextual factors, the complexity of training tied to other factors was neglected (e.g., how cross-cultural competencies may evolve over time).

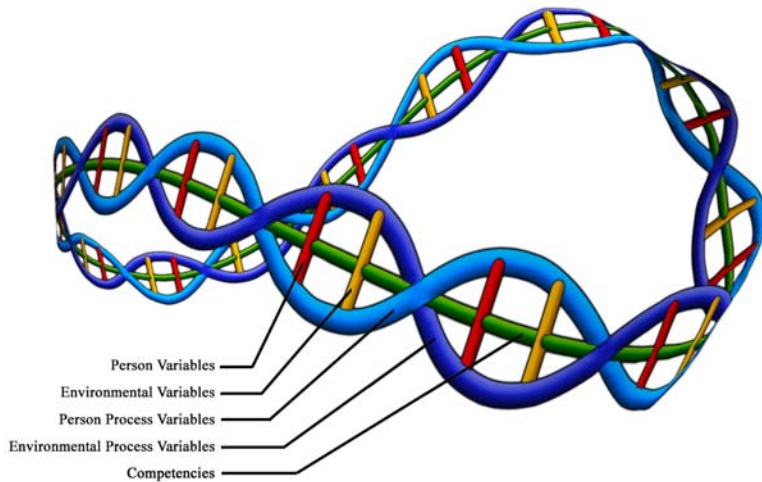
Overview: The Dynamic-Systemic-Process Model of International Competencies

The previously described models as well as Dynamic Systems Theory (DST; Thelen & Smith, 1994) and Expectancy Theory (Vroom, 1964) contributed, in part, to the new model of international competencies (see Figure 1) introduced in this article. In general, our Dynamic-Systemic-Process Model of International Competencies is guided by the assumption that individuals' learning and

development of international competencies is continuous, not sequential but recursive, constantly evolving, cumulative, and highly dynamic. Further, it is assumed that change is a constant and inevitable aspect of the human experience, and as a result, individuals' affect, cognition, and behavior (e.g., international competencies) is complex, fluid, and in a reciprocal relationship with the environment. Stated differently, it is believed that individuals' competencies are both shaped by and shape the environment.

In our model there are two sets each of person and environmental variables, and one competency variable that are reciprocally and intricately connected, in constant motion, diverse in color, shape, width, and height, and unrestricted by time meaning there is no starting or ending point to acquiring international competencies. In general, the diversity in shape, width, and height of the geometric representations of the model's components, however, implies variability in the extent to which a specific component is both present and influences other components including the breadth and depth of individuals' repertoire of international competencies.

Figure 1: Dynamic-Systemic-Process Model of International Competencies



Dynamic Systems Theory

Our model is guided, in part, by suppositions about development and learning in DST (Thelen & Smith, 1994). Dynamic systems theorists forgo parsimony for the chance to embrace a more holistic understanding of development. DST is a theory of development with its origins in physics, mathematics, and chemistry. Physics, mathematics, and chemistry are also essential to our model. Therefore, for DST and our model development is conceptualized as a constant, fluid, non-linear, and multiply determined process occurring within systems (Spencer & Thelen, 2003). These attributes are represented through the royal blue and sky blue double helix Möbius strands found in Figure 1. In mathematics like our model, the primary characteristics of our Möbius strands are that there are inconsistencies in the surface feature of the design. Moreover, this shape has two sides and two edges, but it is not possible to move from one side to the other without crossing an edge. The geometric object in Figure 1, however, like other Möbius strands, in certain locations as a result of a half twist, has only one side and one edge.

Systems are central to DST and our model. Spencer and Thelen (2003) theorized systems were comprised of an organism and its environment, and were assumed to be self-organizing and unique. These assumptions also guide our model. In relation to DST, Thelen (2005) argued the current state of any system was contingent upon prior states, and its current state served as the starting point for future states. For DST, then, there was no ultimate end goal for development, but rather development occurred as persons solved problems in their own unique ways (Spencer *et al.*, 2006). Similarly, for our model, there is no final goal of psychologists developing international competencies. Instead, there is a lifelong and unique process of psychologists acquiring and refining such competencies as a result of professional and personal experiences, obtaining new knowledge, and the influence of an ever changing environment and their exposure to diverse cultural contexts.

Person Variables

Are there certain characteristics people embody that might make them more successful in a cross-cultural context? We refer to such features as person variables (see Figure 1). A dark red bar connecting the double helix Möbius processes represents these variables. These variables are the individual, relatively stable characteristics that a person has prior to receiving cross-cultural training. For DST, it is expected that person variables serve as the foundation of development because when faced with a novel task, persons may first recall information about past successes. For our model, we incorporate two (personality & previous

international experiences) of the most often examined person variables tied to international competencies.

Personality. It has been argued if persons are placed in an unfamiliar context, personality may, indeed, become one of the guiding determinants of behavior (Shaffer, Harrison, Gregersen, Black, & Ferzandi, 2006). There is evidence certain personality types may adjust better in cross-cultural settings. Thus, this variable appears in our model. In a meta-analysis, Mol, Born, Willemsen, and Van Der Molen (2005) found with the exception of openness, all the big five personality traits (extraversion, emotional stability, agreeableness, & conscientiousness) were positively related to cross-cultural work performance for expatriates. Openness has been found, however, to have a positive relationship with cross-cultural work adjustment (Shaffer *et al.*, 2006). Nonetheless, personality has been shown to yield only a small effect on cross-cultural performance and general cross-cultural adjustment (Abbe *et al.*, 2007). Thus, when examined in isolation to other variables, it is conceivable personality may add little to understanding cross-cultural success. In our model, therefore, person variables alone (e.g., personality) are irrelevant. Instead, we theorize these characteristics interact in a dynamic, ongoing, developmental, reciprocal process with all the other variables contributing to the outcome (e.g., intercultural effectiveness) of demonstrating international competencies. Since our model is recursive in nature, we also posit the person variables are influenced by the competencies.

Previous experience. Previous international experience is another person variable that researchers believe relates to cross-cultural competence. Thus, it is included in our model. Prior experience can facilitate workers' adjustment in an international context and may positively impact expectations and motivation to travel abroad (Abbe *et al.*, 2007). Scholars employing meta-analyses found, however, past international experience had only a small association with cultural, interpersonal, and work adjustment (Bhaskar-Shrinivas, Harrison, Shaffer, & Luk, 2005; Hechanova, Beehr, & Christiansen, 2003). Further, Mol et al's (2005) meta-analyses study revealed previous experience was unrelated to cross-cultural job performance.

Person Process Variables

Several other person variables have been linked to cross-cultural adaptation and intercultural effectiveness. In general, individuals have a certain degree of control over these person variables, and they interact with the context to potentially influence an individuals' cross-cultural or international competence. Further, these variables are more dynamic, meaning they may change over time or with cross-cultural training. Because of this, we call these variables "person process variables" depicted as a sky blue wavelength Möbius in Figure 1.

Emotion. Individuals' emotions are quite dynamic and often changing given the circumstances and context. Interestingly, according to Taylor (1994), current models of cross-cultural competencies have ignored the role of emotion. He argued and discovered through research that emotions should be included in such models. Therefore, we theorize that the emotional experiences of psychologists and trainees pursuing activities outside of their home country will influence their cross-cultural learning and receptivity to cross-cultural training.

We also contend that psychologists and trainees' ability to recognize, interpret, and respond to others' expressions of emotions within their cultural context is an important cross-cultural skill. For example, it seems critical that psychologists and trainees accurately interpret and respond to nonverbal expressions of emotion when engaged in activities outside of their home country since this may facilitate more effective intercultural communication and prevent misunderstandings due to differences in emotional expressions.

Motivation as a person process. Motivation is an important aspect of our model. Our assumptions about motivation are guided by Vroom's (1964) Expectancy Theory that posits individuals' selection of behavior is motivated by their decisions and cognitive processes linked with the expectations or desirability of the specific outcomes. For Vroom, motivation is a process persons control to guide their choice of one behavioral option over another. There are three components to this theory: Expectancy, Instrumentality, and Valence. Expectancy is a person's belief his/her effort will lead to achieving the desired performance goal. Past experience, self-efficacy, and the perceived difficulty of the goal affect this expectancy. Instrumentality, in contrast, is a person's belief s/he will obtain a reward if the expectation for the goal is reached. Finally, valence-is the value individuals associate with the performance rewards. These values derive from needs, goals, and values in general. For Vroom, motivation equals expectancy x instrumentality x valence, an assumption also guiding our model.

A person's motivation has been often cited as a major force in determining cross-cultural engagement and eventual effectiveness (e.g., Black & Mendenhall, 1990; Johnson *et al.*, 1996; Aegisdóttir & Gerstein, 2010). It has been argued to become a cross-culturally competent professional, persons must possess a certain degree of motivation to first seek out international work, and then possess the motivation to adapt to stressors involved in a new cultural context.

A persons' motivation to pursue and effectively behave and cope in a new cultural context seems to fluctuate from little to very high motivation. Like Vroom (1964), in our model, motivation equals expectancy x instrumentality x valence. Additionally, we posit this unique individual process (motivation) is in a constant reciprocal relationship with features of the cultural context and environmental processes influencing this context, and the eventual acquisition and demonstration of psychologists and trainees' international competencies.

Cultural adaptability. The ability to adapt to new cultural contexts appears to be key in succeeding in an international environment. Thus, adaptation is a person process variable in our model. Kim (1991) suggested intercultural competency, in general, depends on adaptability. Kim also proposed until a person can suspend old cultural behaviors and learn to replace them with new ones, s/he could not move towards intercultural transformation and eventual intercultural competency. Adjustment to a foreign culture involves developing an ability to become more familiar, comfortable, and efficient towards expected behaviors, values, and norms (that differ significantly from a home culture) in the new culture (Torbiörn, 1982). Successful cross-cultural adjustment results in a person's ability to perform or inhibit certain behaviors based on cultural context (Black & Mendenhall, 1990). We contend cultural adaptation or adjustment reciprocally interacts, in part, with environmental processes leading to persons acquiring and/or displaying functional international competencies resulting in intercultural effectiveness.

Cultural intelligence. Another person process variable in our model tied to an aspect of cultural adaptability is cultural intelligence. As defined by Earley (2002), cultural intelligence within an organizational context "...reflects a person's capability to adapt as s/he interacts with others from different cultural origins" (p. 283). It requires the use of meta-cognitive skills to cope with novel social situations, involves searching for new information, and requires a high level of perseverance during stressful situations (Earley). In Johnson *et al.*'s (1996) view, cultural intelligence has cognitive, motivational, and behavioral tenets operating as process and content variables that contribute to the dynamic adaptation processes occurring in new cultural contexts.

In our model, we posit psychologists and trainees' cultural intelligence influences their adaptation, competence, and intercultural effectiveness in a new environmental context. We also believe, however, that the environmental context and concomitant processes that are in operation contribute to persons' acquisition and the effective use of their cultural intelligence.

Coping skills. We consider coping skills as a person process variable as well. These are methods persons, in general, employ to handle stress (Selmer, 1999) and are often categorized as problem or symptom focused. Symptom-focused skills are used to decrease emotional distress by attending to subjective distress or physiological symptoms (Lazarus & Folkman, 1984), while problem-focused skills are proactive efforts to alter the situation appearing to be the source of one's distress (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). These two strategies have a different effect on adjustment in an international context. In this context, in general, problem-focused compared to symptom-focused coping has been found to lead to better adjustment (e.g., Feldman & Thomas, 1993). In specific, active attempts to change a work environment were positively linked with positive adjustment, whereas psychological withdrawal had a negative effect

on adjustment. Thus, we expect the use of the two coping strategies will be reciprocally influenced by the environmental process variables leading to their development and/or display of international competencies linked with intercultural effectiveness.

Cognitive complexity and flexibility. Cognitive complexity and flexibility are also person process variables in our model. Researchers have reported these constructs impact intercultural effectiveness. Cognitive complexity in an international context has been described as a person's ability to increase understanding of a foreign culture based on new knowledge and experiences (Abbe *et al.*, 2007). This process often involves making attributions about others' behaviors (Abbe *et al.*) and continual updating of one's knowledge base.

Cognitive flexibility also may be connected with effectiveness in international contexts. When studying 250 young executives, Ratiu (1983) found cognitive flexibility, or the ability to change one's views about people in a culture, was tied to international effectiveness. One form of cognitive flexibility warranting further research is perspective taking. This is the ability to suspend one's sense of egocentrism to experience another person's affective or cognitive state (Abbe *et al.*, 2007).

In our model, therefore, we predict psychologists and trainees' high levels of cognitive complexity and flexibility in relation to new environmental contexts and processes will impact their international competencies leading to intercultural effectiveness. Moreover, it is theorized that focusing on, and developing, cognitive complexity and flexibility is a critical feature of training psychologists and trainees to be cross-culturally competent.

Cognitive closure. Another person process variable in our model is cognitive closure. This construct has been defined as the motivation all individuals' experience to find answers or solutions to problems, and their resistance to new information that may conflict with those solutions (Kruglanski & Webster, 1996). Although the research on the relationship between need for closure and cross-cultural competency is limited, initial findings with immigrants suggested persons with a higher need for closure may use avoidant coping strategies when adjusting to a new culture (Kosic, 2004). Others discovered that expatriates with high levels of need for closure experienced lower social adjustment and lower cultural sensitivity (Kashima & Loh, 2006). It is possible, therefore, to predict that psychologists and trainees with a lower need for closure may adapt to a foreign culture more effectively, enabling them to acquire and/or further develop international competencies resulting in intercultural effectiveness.

Ethnocentrism to ethno-relativism. Another person process variable in our model is actually a continuum from ethnocentrism to ethno-relativism. Authors claim challenging a person's ethnocentrism is a goal of developing cross-cultural competence. Ethnocentrism has been described as a persons' persistent belief that

their own cultural beliefs, values, and traditions were “right,” while other cultures’ practices were “wrong” (Black, 1990). In comparison, ethno-relativism has been viewed as the acceptance of, adaptation to, and integration of cultural differences into individuals’ worldview (Bennett, 1986). Another term for ethno-relativism is cosmopolitanism, or a persons’ worldview that the traditions, beliefs, and values of other cultures are equally important as their own (Shaffer *et al.*, 2006).

Some empirical evidence exists supporting a link between an ethno-relativist worldview and intercultural effectiveness. Wiseman, Hammer, and Nishida (1989) discovered that ethno-relativism was the strongest predictor of forming accurate impressions and the correct understanding of foreign cultures among Japanese and U.S. participants. Further, Shaffer and colleagues (2006) found that cosmopolitanism, among expatriates, accounted for greater variance in its relation to international work adjustment in comparison to the Big Five personality factors. Although additional research is needed to determine the exact developmental process involved in becoming ethno-relativistic, it appears adopting ethno-relativism enhanced individuals’ ability to function effectively in an international environment. Thus, in our model we expect persons with a greater degree of ethno-relativism will possess more effective international competencies.

Interpersonal skills. Considering the importance of relationships to psychologists, the ability to develop and maintain them is critical to their international competence. As a result, we include this person process variable in our model. There are many interpersonal skills (e.g., flexibility, respect, listening, relationship building, self-control, empathy, cooperation) that are relevant to international work (Spitzberg, 1989). Most authors agree, however, that intercultural communication is a primary interpersonal skill all persons need to achieve cross-cultural competence (e.g., Cui & Van Den Berg, 1991). Research supports this assertion (Hammer, Gudykunst, & Wiseman, 1978). Research also has linked empathy to higher behavioral competency for job applicants (Van der Zee, Zaai, & Piekstra, 2003) in their host cultures.

Overall, interpersonal skills may be more important than context-specific skills, such as language or prior international experience. Kealey (1989) discovered international workers who had higher interpersonal skills were better able to transfer their work-related skills to a local, foreign environment. Interpersonal skills also seem to be strong predictors of expatriates’ general adjustment (Hechanova *et al.*, 2003). Thus, in our model we predict a host of interpersonal skills are critical to psychologists and trainees’ effectiveness in an international context, as interpersonal and communication skills are often a focus of their work interactions.

While person process variables play an important role in the development and display of international competencies, these variables do not operate in isolation from the environmental context and processes. In fact, as shown in our model (see

Figure 1), contextual, or environmental factors interact, in part, with person process variables to reciprocally influence the development or display of effective international competencies.

Environmental Variables

When working in an international context, psychologists and trainees will inevitably be placed in an environment with different cultural norms, values, and expectations. Environmental variables are the stable aspects of the host culture including features of this culture, and more specifically, characteristics of the organization where someone is working. Consistent with DST, our model incorporates these variables (see Figure 1) because a new environment often creates novel challenges to which persons must adjust their cultural competencies. A gold cross bar connecting the double helix Möbius processes represents these variables in our model.

Cultural distance. Cultural distance is critical to possessing international competencies. Cultural distance, also described as cultural toughness (Littrell, Salas, Hess, Paley, & Riedel, 2006) or culture novelty (Bhaskar-Shrinivas *et al.*, 2005), refers to persons' level of difficulty in adjusting to the distance between their own and a new culture (Black, Gregersen, & Mendenhall, 1992). Cultural distance develops because of differences including cultural values, language, and political systems between a person's home and host culture. Individuals have limited ability to control cultural distance. It is expected the greater the perceived cultural distance, the more difficulty a person experiences in adjusting to it. For instance, a worker from Romania would most likely have an easier time adjusting to London, England compared to Africa (see Littrell *et al.*, 2006). In fact, Hechanova *et al.* (2003) found that expatriates who were employed in cultures vastly different from their own reported more difficulty interacting with host nationals. Thus, it is predicted in our model that the cultural distance between a psychologist and trainee's home and host culture may impact this person's interpersonal skills and adjustment in this new context.

Characteristics of the job and organization. In the same way that the culture effects the intercultural adjustment of persons, so do characteristics of the cross-cultural work environment. Broadly speaking, features of the job (e.g., difficulty, role conflict) and organization (social support) influence cross-cultural adjustment (Black *et al.*, 1992). In a meta-analytic review of job characteristics, Bhaskar-Shrinivas *et al.* (2005) reported role clarity and discretion were positively linked to interaction adjustment in the host culture, and at the organizational level, perceived organizational support was positively tied with work adjustment. Thus, we predict that features of the job and organization will be linked to psychologists and trainees' work adjustment and quality of their interpersonal relationships with people in their new cultural context.

Environmental Process Variables

When working abroad, environmental processes also will impact a person's ability to work effectively. Many processes have been identified as influential in determining an individual's intercultural effectiveness. These processes are represented by the royal blue wavelength Möbius strand in our model (see Figure 1). We contend environmental process variables interact with the person process variables, and together they influence psychologists and trainees' international competencies.

Training delivery, timing, and rigor. We view training as an environmental process variable. Typically, cross-cultural training has been delivered in different ways (Littrell *et al.*, 2006). The two most common methods are the didactic or information dissemination approach, and the experiential learning approach. The timing of cross-cultural training is thought to impact the effectiveness of training workers traveling abroad (Littrell *et al.*, 2006). Researchers tend to fall into two camps on whether training is most effective prior to departure (e.g., Caligiuri, Phillips, Lazarova, Tarique, & Burgi, 2001) or after arrival (e.g., Selmer, Torbiörn, & de Leon, 1998) in a foreign country. Those arguing for pre-departure training believe such training develops appropriate expectations of the foreign environment, which decreases stress upon arrival and increases the ability to adjust (Caligiuri *et al.*). In contrast, scholars advocating for post-arrival training believe that timing training after one's arrival in a foreign country can address immediate, real-time needs and concerns (Selmer *et al.*). It is argued that post-arrival training is guided by actual experiences, rather than expected experiences. Selmer, et al presented a different view when introducing a sequential cross-cultural training model for expatriate business managers that advocated offering pre-arrival and/or post-arrival training based on the needs of a specific foreign assignment. While not supported by research, Selmer *et al.*'s paradigm is consistent with the assumption of our model that environmental processes are connected to intercultural adjustment and effectiveness. Therefore, our model also predicts it is critical to time cross-cultural training based on the psychologists and trainees' work responsibilities. In addition, however, unlike Selmer *et al.*, our model posits that the timing of training should meet the unique needs of the individuals employed abroad.

Training rigor, or the amount of mental energy and time involved in training, may also moderate the effects of cross-cultural training (Black *et al.*, 1992; Littrell *et al.*, 2006). Littrell *et al.* claimed, and our model posits, that higher levels of training rigor might have longer lasting effects on performance. Thus, it is expected that psychologists and trainees that complete a rigorous cross-cultural training program will develop and display more effective international competencies for a longer period of time.

Tailoring cross-cultural training to features of individuals going abroad also may prove to be more effective than general training programs (Littrell *et al.*, 2006), an assumption tied to our model as well. One tool that may be useful when assessing the needs of psychologists and trainees working abroad is the Intercultural Development Inventory (IDI) (Bhawuk & Brislin, 2000). Based on responses to the IDI, cross-cultural training programs can then be designed to address the specific stage of trainees' (psychologists') development (Littrell *et al.*).

Competencies

The final component in our model is labeled competencies represented by the green Möbius strand running through the middle of the double helix Möbius processes, and person and environment variables (see Figure 1). In our model, psychologists and trainees with international competencies possess the requisite motivation, awareness, knowledge, and skills to perform, in countries other than their primary country of identification, the appropriate behaviors (e.g., vocational, interpersonal) given the characteristics of the specific cultural context. These persons also have the capacity to develop the sufficient efficacy to enact these behaviors.

Possessing international competencies, however, does not assure individuals' effectiveness using such skills. We view effectiveness as psychologists and trainees intentionally utilizing their competencies to produce the desired outcomes within a specific cross-cultural context. In the literature, intercultural outcomes are frequently described as those related to cultural (i.e., general comfort with the culture including food, customs, etc.), work (i.e., job performance and satisfaction), and interpersonal (i.e., the quality of relationships with host nationals) adjustment (Black, Mendenhall, & Oddou, 1991; Littrell *et al.*, 2006).

Similar to outcomes, in our model, competencies are not static, they are ever changing in degree, frequency, and breadth, and they are in a reciprocal relationship with the other systemic variables we propose. While our previous discussion implied that the constructs comprising the different sets of variables in our model were distinct, in fact, this is not the case. It is more accurate to state that each construct possesses some unique characteristics, and at the same time, a specific construct cannot be arbitrarily separated from all the others.

Thus, in our model, a couple of the constructs tied to the person process variables (e.g., cultural adaptability, coping, emotion recognition, and interpersonal skills), for example, are also considered competencies. Our rationale for this fairly unusual structure of a model is based on two principles. First, as competencies, these particular constructs now reflect psychologists and trainees' degree and/or frequency of motivation, awareness, knowledge, and skills to potentially perform effectively in the target culture. More importantly, these

competencies now take on a new form reflective of a synthesis or cumulative integration of these constructs. Stated another way, in our model, competencies represent an evolving whole that is greater than the sum of its parts and that are subject to changes in appearance, intensity, and utility.

Psychologists and trainees with international competencies display the required motivation (M), awareness (A), knowledge (K), and skills (S) to behave in ways appropriate to the cultural context. We briefly discuss each of these attributes relying in part on Aegisdóttir and Gerstein's (2010) MAKS cross-cultural competency framework for mental health professionals.

Motivation as a competency. As stated early, motivation plays an integral role in people learning to be successful in a new cultural environment. While motivation has been examined broadly in relation to learning (e.g., Zimmerman, Bandura, & Martinez-Pons, 1992), surprisingly few studies have specifically examined its connection to intercultural effectiveness (Mendenhall & Oddou, 1985; Takeuchi, Yun, & Russell, 2002) and competencies. Takeuchi and colleagues (2002) found individuals' willingness to communicate positively was linked to interaction adjustment among Japanese expatriates working in the United States. In our model, we predict that the greater the psychologists and trainees' motivation, the more open these persons will be to learning how to adjust to a new cultural context.

Awareness. In our model, awareness in the context of international competencies is the recognition of the ways in which culture impacts beliefs, values, and behaviors (Abbe *et al.*, 2007). Although there is little empirical support for awareness as a predictor of competencies or cross-cultural adjustment, Abbe *et al.* suggested it serves as a pre-requisite for the development of other outcomes. For instance, in Mol *et al.*'s (2003) meta-analysis, it was discovered cultural sensitivity was a more consistent predictor of job performance compared to language ability and prior international experience. Similarly, non-ethnocentrism or ethno-relativism (for which awareness is a pre-requisite) predicted work adjustment beyond personality characteristics (Shaffer *et al.*, 2006). In DST and our model, awareness plays a crucial role in individuals' cross-cultural adjustment and other potential competencies and outcomes. In specific, for trainees and psychologists to modify their behavior to be relevant to the cultural context or to display cultural adaptability, it is necessary for them to first assess and understand how the new context differs from other cultural contexts they have experienced. Therefore, we predict the greater trainees and psychologists' awareness of the new cultural context compared to others they are familiar with, the more likely they will adjust their behaviors to be relevant and appropriate to, and effective in, a new context.

Knowledge. Knowledge is another overarching competency in our model. It is a central component of cross-cultural training that leads to successful outcomes in a cross-cultural context (Abbe *et al.*, 2007; Hechanova *et al.*, 2003). Indeed, it is

expected with enhanced culture specific and general knowledge, a person will have more resources to draw upon in an unfamiliar environment and can thus adjust better. In fact, culture-specific knowledge has been linked with positive outcomes including general adjustment to a foreign culture, but not necessarily with work adjustment (Takeuchi *et al.*, 2002). Similarly, language has been found to be a predictor of cultural adjustment and interaction with host nationals, but not significantly related to work adjustment (Bhaskar-Shrinivas *et al.*, 2005; Hechanova *et al.*, 2003). Bhaskar-Shrinivas *et al.* suggested, however, that the host culture language might moderate this relationship with non-native speakers working in English-speaking countries having more challenges compared to native-English speakers working in other countries.

Nevertheless, some have argued that the role of culture specific knowledge has been overestimated, while the importance of culture general knowledge has been underestimated. Abbe *et al.*, (2007), for example, asserted if persons can be generally prepared for the way in which cultures may differ, they will be successful in a cross-cultural context. Thus, an important function of cross-cultural training for psychologists and trainees should be the development of a cross-cultural schema in which they learn certain expectations about cross-cultural experiences. This assumption, however, has yet to be empirically supported. Moreover, the small relationship between prior international experience and cultural adjustment might suggest that certain people develop better cross-cultural schemas from their experiences compared to others.

Further research is also needed to explore the link between culture-general knowledge, culture-specific knowledge, and cross-cultural competencies. We predict, however, that the two forms of cultural knowledge interact with person process variables to effect psychologists and trainees' international competencies such as being knowledgeable about the necessary skills involved in intercultural adaptation. This prediction is consistent with our assumption that characteristics of the person and environment may differentially effect possessing cultural knowledge, and consequently, may impact intercultural adjustment and effectiveness.

Skills. There are many skills persons need to possess and effectively demonstrate when working in an international context. A couple of these skills (e.g., coping, emotion recognition) were discussed earlier. Some other skills trainees and psychologists need to display include, for instance, tolerance for ambiguity and the unknown, patience, risk taking, and highly developed communication skills. Further, these persons must be capable of understanding and behaving according to the hierarchy of authority and leadership in a new cultural environment, and comprehending and respecting the norms associated with self-disclosure and different ways of processing information and making decisions. Finally, psychologists and trainees must be aware of differences in time perspective to respect the norms of a local culture or foreign country.

Recommendations

Training

Training psychologists and students in international competencies has two primary goals. First, it must target developing their competencies, and second, it must translate into specific intercultural outcomes. Increasing intercultural effectiveness is the ultimate goal of international competency training. Psychologists and trainees must demonstrate competence and effectiveness employing their international competencies after completing cross-cultural training.

The competency skills associated with international work have been defined differently with some scholars arguing that training should emphasize culture-specific skills (e.g., culturally-sensitive practices & interventions) (Ægisdóttir & Gerstein, 2010), while others have focused on more general cross-cultural skills of expatriates like self-regulation and interpersonal skills (van Oudenhoven, Mol, & Van der Zee, 2003). Surprisingly, while culture-specific skills have been linked to the outcomes of training, the relationship between these skills and adjustment or work performance has not been examined. Interpersonal skills, however, have been found to consistently predict cross-cultural outcomes (see Abbe *et al.*, 2007 for a review).

Our model can inform the structure and content of training programs for persons working abroad. For example, teaching trainees and psychologists' culture general knowledge would be useful, regardless of the location of their work. Educating these persons about culture-specific knowledge also would assist them in constructing accurate expectations of a foreign culture, and possibly increase their ability to adapt to a different country. Further, teaching problem-focused coping skills may help decrease psychologists and trainees' distress tied to a novel environment, and enhance their cultural adaptability to a foreign setting. Moreover, based on the positive link found between interpersonal skills and improved adjustment in foreign work settings (e.g., Hechanova *et al.*, 2003), it appears that persons working abroad would benefit from training in empathic responding (Kim, 1986) and activities designed to teach them intercultural communication skills (Cui & Van Den Berg, 1991).

Psychologists and trainees also may rely on our model to assist persons working abroad. For instance, they could use the model as a guide to help middle and upper level executives of multinational corporations in their adjustment to a new work and cultural context. As stated earlier, several of the variables in our model (e.g., cognitive flexibility, coping) are important to consider when preventing expatriates early return from a foreign work assignment.

A strategy that can be employed by psychologists and trainees to reduce the early return of expatriates to their home country is pre-selection screening. Our

model may be useful to these professionals when selecting personnel for international work and also placing persons in specific locations abroad. For example, psychologists and trainees could administer screening measures to assess personality characteristics (e.g., extraversion, emotional stability) thought to be connected to engaging in the effective use of international competencies.

Our model also can be incorporated into programs (e.g., exchange or study abroad) designed to prepare psychology students to travel abroad. Including in these programs information on cognitive flexibility and complexity, and coping skills for first-time travelers may significantly decrease their possible negative experiences resulting from culture shock and subsequent feelings of depression or anxiety. Further, pre-departure interventions aimed at increasing students' motivation to actively learn about the host culture may help decrease their stress tied with an unfamiliar environment, inoculate them from their lack of local social support, and enhance their cultural adjustment and academic performance in a new environment. Reducing students' distress during a first study abroad experience also may motivate them to pursue other study abroad opportunities in the future.

Our model can serve as a framework to design and implement programs aimed at increasing the international competencies of psychology students as well. Such programs could include activities that impart culture general and specific knowledge and skills connected to cultural intelligence, adaptability, and distance, and specific exercises that target the development of cross-cultural interpersonal communication and coping competencies. Offering international competency training including applied experiences can increase the potential that students will develop the motivation to pursue work opportunities abroad and begin to possess the requisite skills necessary to engage in international activities or careers immediately upon the completion of their degree.

Research

Many different research projects could be performed based on the assumptions and hypotheses of our model. First, empirical evidence must be obtained to establish the relevance of the model's constructs for psychologists. Empirical support already exists for the relationship between intercultural effectiveness and several of the variables in the model. Much of this evidence, however, has appeared in the business literature. Additional research is warranted to determine whether this association exists for psychologists and trainees working abroad.

Obviously, our model is complex making it difficult to examine all of the hypothesized interactions in a single investigation. Instead, we recommend a series of studies be conducted focusing on how specific components (e.g., person process & environmental process variables) might influence and be affected by the development of international competencies over the course of time. For

example, a study could be performed examining the potential reciprocal relationships between the person process (e.g., cultural adaptability & intelligence) and environmental process (e.g., rigor of cross-cultural training) variables, and psychologists or trainees; international competencies including their ability to first assess and understand how a new context differs from other cultural contexts they have experienced, and their possession of the required culture specific (e.g., language, norms), and general (e.g., anticipating differences in language, norms) knowledge for an international context. Assuming the predicted relationships are discovered, a follow-up study could investigate whether the interaction between these variables is connected to psychologists or students displaying higher levels of culturally appropriate and functional intercultural communication skills, and greater effectiveness when performing their responsibilities in a cross-cultural work environment.

Another study based on our model that could yield highly relevant results focuses on determining how person (e.g., lack of openness to experience) and environmental (e.g., greater cultural distance; limited social support from the work group) variables might serve as barriers to psychologists and trainees developing international competencies.

Additionally, obtaining data on how specific person (e.g., personality traits) and person process (e.g., coping skills, cognitive complexity) variables, for example, contribute to trainees and psychologists' acquisition of international competencies could help in implementing cross-cultural training. When designing and implementing this training, it also would be important to include appropriate teaching strategies and technology from the education literature to enhance the quality of the training program and to increase the potential for effective learning outcomes. Further, it is essential to investigate if a training program based on the assumptions of our model compared to a previously tested training program results in psychologists and students acquiring a greater number and higher quality repertoire of international competencies.

Lastly, it is unknown at this time whether the structure of our model and the particular constructs we selected to represent the five sets of target variables are valid, relevant, and operate in a similar fashion for psychologists and trainees from different countries or cultures. Thus, there is a need to conduct research to explore and potentially establish the cross-cultural validity of our model.

Conclusion

An ever-increasing number of psychologists are employed, consult, and collaborate with organizations and individuals outside of their primary country of residence. The demand for this type of work has increased dramatically in the past few decades and this trend will continue to greatly accelerate in the years to come. The importance of psychologists and trainees possessing and displaying culturally appropriate and effective competencies across a variety of diverse international settings, therefore, cannot be stressed enough. To date, however, there have been very few models in psychology that discuss the factors that contribute to developing these competencies. Available models lack specificity, depth, and application to a wide range of psychologists engaged in a variety of activities outside of their home country.

This article introduced a new model to address these shortcomings. The Dynamic-Systemic-Process Model of International Competencies offers a heuristic framework to explain and investigate how international competencies for psychologists and trainees may develop. It also offers a roadmap to design and implement training programs to better prepare these persons to possess the requisite skills to function effectively in a host of international contexts. Given the assumptions and structure of our model have yet to be tested, it is unknown whether this geometric double helix Möbius model is cross-culturally valid or relevant. It would seem though since the DNA helix and Möbius strand in the life sciences, mathematics, and physics, respectively appears to partially describe the human experience and structure of the universe, this new model of international competencies does possess some face validity!

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