Cognitive Information Processing Theory: International Applications

Debra S. Osborn, Seth Hayden and Caitlyn Brown

This is the accepted manuscript version. Retrieved from
https://files.constantcontact.com/56f4bf3f301/4f571e70-512d-4e69-a6fe-a58e31f179a0.pdf
Introduction

Cognitive information processing theory (CIP; Sampson et al., 2004) originated in 1971 at Florida State University as researchers in career development who were strongly engaged in the delivery of career services integrated years of practice and research to create CIP theory. Since that time, hundreds of scholarly works in the form of conceptual and empirical articles, book chapters, and so forth, have been written on the key elements of CIP theory. In fact, Brown (2015) stated that “probably the most widely studied career interventions have been those developed” from CIP theory (p. 62). CIP has been well-cited since its development, with 188 peer-reviewed articles and 350-plus total scholarly works (Sampson, Reardon, Peterson, & Lenz, 2019). The majority of these scholarly works are from the United States; however, several are from international contributors. In addition, the Center for the Study of Technology in Counselling and Development, which focuses on exploring and building upon CIP theory and practice, has hosted 47 international visitors with
interest in research and application of CIP theory. These contacts have shared via scholarly work as well as anecdotally about the impact of applying CIP in their settings.

Given the awareness that CIP theory is being used internationally, and in an attempt to understand the commonalities and uniqueness of how each setting uses and flexes with their integration and application of CIP, the rationale for this special issue in the Career Planning and Adult Development Journal was to create a space where this collective knowledge and experience could be disseminated. In this special issue, nine international countries are represented, including: Australia, Brazil, Canada, Finland, Iceland, Philippines, Singapore, South Korea, and Uganda. In addition to providing a background about their specific site, the authors of the articles in this special issue were asked to consider the following questions as they wrote about CIP in their setting:

- What was the impetus/decision making process for choosing CIP?
- How was CIP implemented?
- What challenges were experienced during implementation?
- How was the “CIP experience” evaluated? What worked well? What needed adjustment?
- What recommendations might be made based on the experience?

As a general introduction to this special issue, this article will begin with exploring global career development and career counseling, and ethical considerations of applying western theories to other countries. In addition, we provide a brief review of CIP components and expound upon the spirit of CIP theory. We conclude with general observations of how CIP was applied in these various international settings and recommendations moving forward.
Global career development and career counseling

Attention to aspects of career development on a global scale has been continually increasing over time. Though an understanding of work and its importance is not new, the development of sophisticated mechanisms of career support has been steadily emerging within the global context. Evidence of this is found in the emergence of career development professional associations across the globe such as the Japan Career Development Association, The Career Development Association of Australia, and the Asia Pacific Career Development Association. An international symposium held in 2019 on career development facilitated by the International Centre for Career Development and Public Policy in Norway was attended by representatives from 33 countries. The International Association for Educational and Vocational Guidance has a long history of connecting career development professionals and researchers from across the globe to disseminate information on career development interventions and research.

A byproduct of this enhanced attention within various countries is an interest in career theory and associated interventions. A recent edition of the International Journal for Educational and Vocational Guidance contained two articles focused on career theory; one on validating the use of Holland with a Slovak sample (Martončík, Kačmárová, Hruščová, Magáčová Žilková, & Kravcová, 2019) and another on the application of Social Cognitive Career Theory in Croatia related to careers in sustainability (Međugorac, Šverko, & Babarović, 2019). Life Design Theory (Savickas, 2012) has also been examined within an international context such as a career group in Italy (DiFabio & Maree, 2012) and a career group with adolescents in Portugal (Cardoso, Janeiro, & Duarte, 2018).
Cognitive Information Processing (Sampson, Peterson, Reardon, & Lenz, 2004) has a documented history of existing both in practice and research in the global context. An examination of the CIP bibliography (Sampson, Peterson, Reardon, & Lenz, 2019) found at least 21 articles that are internationally-oriented. Examples of the reach of CIP include using the Career Thoughts Inventory (CTI: Sampson, Peterson, Lenz, Reardon & Saunders, 1996) to examine the degree of dysfunctional career thoughts in career counseling in Iceland (Björnsdóttir, Einarsdóttir, & Kárdal, 2008), exploring dysfunctional career thoughts in breast cancer survivors from the Bahamas (Dames et al., 2019), and examining the impact of a CIP-oriented intervention focused on career thoughts for college students on a pacific island (Thrift, Ulloa-Heath, Reardon, & Peterson, 2012). These examples illustrate the expansive influence of CIP in the global marketplace of career services.

**Ethical Considerations for Applying CIP Transnationally**

Ethical principles set a precedence for behavior in many different fields but are especially important within the human service field. When applying any approach to help a client, practitioners should be cognizant of ethical factors that could impact the efficacy of the approach. There are a number of ethical standards within NCDA’s guidelines (2015) and the NCDA Competencies for Multicultural Career Counseling and Development (NCDA MCCD; NCDA, 2009) that are particularly important when it comes to the application of utilizing CIP internationally. These are quoted directly throughout this section. In reviewing these sources, three main areas of particular application to the topic of transnational application of theory emerged, including: cultural considerations for communication; career development theory; and legal/ethical issues.
**Cultural Considerations in Communication**

Career practitioners should demonstrate cultural sensitivity in their communication style, content, and medium with individuals, as demonstrated by these standards and guidelines:

NCDA (2015)

- *Developmental and Cultural Sensitivity.* “Career professionals communicate information in ways that are both developmentally and culturally appropriate.”
  
  (A.2.c. P. 4)

NCDA MCCD (2009)

- “Regularly evaluates the information, resources, and use of technology to determine that these tools are sensitive to the needs of diverse populations amending and/or individualizing for each client as required; provides resources in multiple formats to ensure that clients/students are able to benefit from needed information; provides targeted and sensitive support for clients/students in using the information, resources, and technology.” *(Information, Resources, & Technology, p.2)*

Working through career concerns can be achieved at a variety of different educational levels. In order for career concerns to be effectively addressed, information must be discussed, explored, and evaluated at a level that is equivalent to the client’s abilities. Culturally appropriate communication as applied to transnational adaptation of career theory does not require a new set of treatments in order to be effective, but more so requires practitioners to be sensitive and flexible in how they go about the implementation of interventions and treatment within a global context (Weir, 2020). CIP’s model for career decision making, career readiness and the differentiated model of career service delivery is broad and flexible enough within its categories and steps for easy adaption and implementation across different demographics and cultures.
Regular evaluation of how well transnational adaptation of a career theory is occurring will increase the likelihood of honest communication that is sensitive to the cultural setting and values in which it is being implemented.

**Cultural Considerations for Career Development Theory**

When developing, implementing or researching any career development theory or intervention, cultural considerations within practice and conceptualization is paramount for effective implementation and is guided by the following standards:

**NCDA (2015)**

- “*Career professionals actively attempt to understand the diverse cultural backgrounds of the individuals they serve. Career professionals also explore their own cultural identities and how these affect their values and beliefs of the working relationship.*” (Introduction – A, p. 3).

**NCDA MCCD (2009)**

- Understands the strengths and limitations of career theory and utilizes theories that are appropriate for the population being served (Career Development Theory, p.1)
- Is aware of his/her own cultural believes and assumptions and incorporates that awareness into his/her decision-making about interactions with clients/students and other career professionals (Individual and Group Counseling Skills, p.1)
- Continues to develop his/her individual and group counseling skills in order to enhance his/her ability to respond appropriately to individuals from diverse populations (Individual and Group Counseling Skills, p.2)
CIP theory encourages practitioners to examine and consider the diverse backgrounds of each individual experiencing career concerns. A key element of CIP is the exploration and evaluation of an individual’s beliefs and values, whether it is culturally or personally, throughout each of the information processing domains (i.e., self-knowledge, options knowledge, decision-making, executive processing), and contributes to client readiness. This drive to first understand certainly applies to transnational application of career theory, in that a recommendation of adoption of a particular career theory or career service delivery model requires a thorough understanding of the cultural context of that setting in determining the appropriateness of that theory for the individuals being served.

While understanding and evaluating an individual’s values and beliefs are important within the process of CIP, a practitioner’s own values and beliefs are equally as important and involve self-exploration of practitioner’s own attitudes (Leung, 2003). Leung (2003) suggested that confrontation of “cultural encapsulation” requires us to examine our own attitudes to break out of the tendency to isolate and believe that what the practitioner already knows is enough. Collaboration across cultures via research or other professional communications can help practitioner’s exploration and expansion of their beliefs and understandings of different cultures and applications of services (Leung, 2003). Savickas (2007) identified the need for Division 16 of the American Psychological Association (APA) to “formulate and implement strategies that facilitate development of indigenous psychological theory and research that are grounded in the specific cultural context where they are practiced” (p.186). This initiative is similar to the movement of implementation of CIP internationally, and most practitioners utilizing CIP are very cognizant of the cultural implications within practice. Cultural humility and awareness are
paramount in being an effective career service provider, and certainly in the transnational application of career theory and intervention.

**Cultural Considerations in Assessment**

Appropriate assessment and evaluation are valid, reliable, and effective when cultural context is considered when administering or interpreting assessment results. The cultural context and factors that need to be considered for practitioners implementing CIP internationally are guided by the following standards:

**NCDA (2015)**

- “*Career professionals recognize that culture affects the manner in which clients’ issues are defined*” (Cultural Sensitivity When Interpreting Assessment, E5b – p. 14)
- “*Career professionals use, with caution, assessment techniques that are normed on populations other than that of the Client. Career professionals recognize the possible effects of age, color, culture, disability, ethnic group, gender, race, language preference, religion, spirituality, sexual orientation, and socioeconomic status on test administration and interpretation, and place test results in proper perspective with other relevant factors. Career professionals use caution when selecting assessments for culturally diverse populations to avoid the use of instruments that lack appropriate psychometric properties for the client population*” (Multicultural Issues/Diversity in Assessment, E8, p.14)

**NCDA MCCD (2009)**

- “*Understands the psychometric properties of the assessments he/she is using in order to effectively select and administer assessments, and interpret and use results with the appropriate limitations and cautions*” (Individual/Group Assessment, p.2)
Assessments are a common component of many career theories, including CIP. The Career Thoughts Inventory (CTI; Sampson, et al., 1996) and Self-Directed Search (SDS; self-directed-search.com) are commonly utilized within CIP, in order to either explore the potential complexity of the individual, to help explore or organize self-knowledge, expand upon options related to self-knowledge, and/or to inform the career decision-making process. Valid assessments that take into account the age and culture of an individual are necessary in order for them to be utilized in an effective and ethical manner. Providing an individual with results that are not generalizable to the them may harm the working alliance and also potentially guide them in an unadvisable direction. Using assessments that have any sort of diagnostic component may do more harm than good to an individual if they are not culturally sound. When assessing an individual’s readiness within a cultural frame, it is important to either adapt or adopt measures that take into account the cultural elements that may contribute to an individual’s concerns and experience.

Both the CTI and the SDS have been used in many international settings. Being cognizant of culture and the use of assessments within career counseling and development can present added challenges to the utilization of CIP outside of the US. The CTI assesses an individual’s negative metacognitions (i.e., executive processing domain) that may be creating barriers within an individual’s ability to make career decisions. Lerkkanen, Sampson, Peterson, and Konttine, (2012) evaluated career decision making utilizing the CTI in Finland. Within their research, they evaluated whether it was more effective and valid to adapt or adopt the CTI into Finnish (Lerkkanen et al., 2012). They found that interpreting the CTI into the Finnish language maintained the factor structure of the original (Lerkkanen et al., 2012; Sampson et al., 1996).
Holland’s SDS assessment is often utilized to provide individual’s with career options to consider based upon their skills, interests, and values (Holland, 2000). Bullock, Andrews, Braud, and Reardon (2010) researched Holland’s theory within an international context with positive findings. This technical report is accessible on the FSU Career Center website: (https://career.fsu.edu/content/download/223100/1906274/TechRept_50_.pdf).

Maintaining appropriate understanding and current research on international use of career assessments and theories is necessary for appropriate and valid utilization of assessments within the CIP Model. However, evidence-based assessment practices and ethical decision making still need to be implemented, not only within a research context but also within a CIP service model internationally. With the rapid globalization most of the world is experiencing, it is paramount that practitioners not only remain well informed of best practices and use of standardized and non-standardized assessments, but of the implications of the evaluations and data within the individual’s cultural context.

**Cultural Considerations for Ethical and Legal Issues**

Every country and licensing body requires a certain standard of ethical behavior from their licensed practitioners with the expectation of appropriate decision making and behavior. There tends to be some overlap between ethical standards and the legal statues that govern each country. Career practitioners are expected to maintain the appropriate ethical and legal practices for their county, and are guided by the following standards:

NCDA (2015; Professional Values and Principles, p. 1)

- Supporting the worth, dignity, potential, and uniqueness of everyone
- Honoring diversity and promoting social justice
NCDA MCCD (2009)

- “Employs his/her knowledge and experience of multicultural ethical and legal issues within a professional framework to enhance the functioning of his/her organization and the image of the profession; uses supervision and professional consultations effectively when faced with an ethical or legal issue related to diversity, to ensure he/she provides high quality services for every client/student” (Ethical/Legal Issues, p.3)

- “Engages in coaching, consultation, and performance improvement activities with appropriate training and incorporates knowledge of multicultural attitudes, beliefs, skills and values; seeks awareness and understanding about how to best match diverse clients/students with suitably culturally sensitive employers” (Coaching, Consultations, and Performance Improvement, p.2)

As with the previously noted standards, these specific standards reinforce the key value of practicing cultural sensitivity and humility. Career practitioners are always encouraged to seek out supervision and consultation when necessary, especially when working with individuals from culturally different backgrounds and settings. While no standards specifically describe working in international settings, the sentiment underlying these standards and guidelines is one of sensitivity and respect.

In addition to the standards and guidelines already mentioned, Sampson et al. (2000) created a five-step model for transnational application of career theory into practice. The researchers developed the model as they applied CIP theory to the United Kingdom. The first two steps involved determining and then disseminating identified theoretical principles. In their article, CIP theory was the determined theory, and the principles were disseminated through
means of the CIP bibliography (https://career.fsu.edu/Tech-Center/Resources/Bibliographies), client and counselor worksheets (https://career.fsu.edu.tech-center/resources/service-delivery-handouts), and other resources such as presentations (https://career.fsu.edu.tech-center/resources/presentations), and technical reports (https://career.fsu.edu.tech-center/resources/technical-reports). The third and fourth steps include applying and field testing the theoretical principles to a different national concept, while the fifth step includes a critical review of how the adapted application worked. Following their successful application of CIP to a career service in Coventry, the researchers provided several recommendations for transnational theoretical adaptation. These included understanding the context of the setting, taking a collaborative approach that involves practitioners and policy makers to create an implementation plan, maintaining realistic expectations, and including an evaluative component of the adaption. These five steps provide a guide for practitioners internationally that intend to implement CIP successfully within their cultural setting in an ethical and efficient manner. Additionally, the steps provide an evaluative process for ensuring that the implementation is effective and remains consistent with the theoretical model regardless of the cultural context.

**Components of Cognitive Information Processing Theory**

Cognitive Information Processing Theory (CIP; Sampson, Reardon, Peterson, & Lenz, 2004) is a comprehensive career theory that focuses on the interaction between domains of knowledge and process. The components of knowing described by the Pyramid of Information Processing and its components (Executive Processing, Decision-Making, Self-Knowledge and Options Knowledge) interact with the process of navigating a career concern termed the CASVE cycle (Communication, Analysis, Synthesis, Valuing, Execution). This approach entails a learning engagement facilitated by the career practitioner in the theory and the manner in which it informs
an effective process of career decision-making and problem-solving. A consideration of this approach both to current and future career concerns is also a focus of the interaction between practitioner and client.

In addition to these structural components of CIP, there is a focus on readiness to encounter a career decision. Readiness is defined as capability of an individual to make appropriate career choices within the context of the complexity of family, social, economic and organizational factors that influence career development (Sampson et al., 2004). There are two dimensions of readiness which specifically contextualize the career concern. Capability consists of the cognitive and affective capacity of an individual to engage in effective career problem solving and decision making. Complexity refers to factors within the family, society, economy, or employing organization that affect the ability to process information necessary to solve career problems and make career decisions (Sampson et al., 2004). These two dimensions intersect to offer insight as to the readiness to engage in career decision-making and problem-solving and potential points of intervention for a career practitioner when problematic aspects of readiness are identified. CIP can be used in conjunction with other career theories to comprehensively support those in need of support. Associated assessments and interventions are utilized to uncover associated thoughts and feelings that may be affecting one’s engagement with a career concern. The CTI that assesses for the degree and nature of dysfunctional career thought and accompanying workbook (Sampson et al., 1996, 1996a)m and the Career State Inventory which measures readiness (Leierer, Peterson, Reardon, & Osborn, 2017) have a foundation in CIP and have been used in a variety of international settings.

In aligning with the CIP precept of individualizing interventions based on the degree of the need, a differentiated service delivery model (i.e., self-help services, brief staff-assisted
services, and individual case-managed services) was established (Sampson et al., 2004). The goal of this differentiated service delivery model is to maximize the number of people who can be served by providing an optimal amount and type of assistance that meets clients’ needs. Self-help services are designed for more independent use in that practitioners primarily function as a referral source for appropriate educational and occupational information within the context of a time-limited engagement. Brief-staff assisted interactions entail addressing the client’s needs in a short duration of time. Individual case-managed services provide the same type of services as brief staff-assisted services, but on an extended basis because of the client’s low readiness, as evidenced by low decision-making capability, high complexity of issues compounding the decision-making process, and possible mental health issues.

**Spirit of CIP**

CIP has specific structures and domains which comprise this approach to career support. While the assessment and techniques provide a framework in which to address career concerns, a philosophy undergirds this process. CIP emphasizes the relationship between the career practitioner and those they support. In addition, modeling and reinforcing information seeking-behavior is a component of delivering career services. Finally, providing the level of support that is aligned with an individual’s needs ensures an individualization of the intervention (Sampson et al., 2004).

The differentiated service delivery model is a result of the CIP perspective of individualizing interventions based on the degree of the need and to provide the most good to the most people as there exists a paucity of resources (Sampson et al., 2004). This consideration of equitable distribution of resources is designed to address social injustice as it relates to access to career services (Sampson, Dozier, & Colvin, 2011).
CIP involves a learning engagement in which clients are empowered to understand both themselves and the process of addressing a career concern with the intention of positively impacting their career decision making and problem solving over the lifespan. Instilling a sense of agency to overcome obstacles to career goals using dimensions of CIP is emphasized. Though the career practitioner facilitates this process, the client informs the process and applies interventions derived from the engagement. Though clear in its structure and process of implementation, the spirit of collaborative problem-solving, information seeking, learning, and agency in overcoming career obstacles typifies the CIP approach.

**CIP in International Settings: Some Observations and Recommendations**

This special issue includes international practitioners’ reflections on their experiences integrating CIP theory, in some manner, into their career service delivery. The articles in this present special edition tell a story of how CIP was adapted and implemented into small groups (Rantanen et al.), websites (Hughes & Hyatt), print materials including guides and handouts (Björnsdóttir & Lenz), workshops (Gordon), complete overhauls of physical space (Ahn; Toh & Sampson), and the development of 20 CIP-based career centers (Garis et al.). What emerges from each of these stories is an appreciation of the need for a balance between applying a validated theoretical approach that was developed elsewhere with the cultural values and systems of the country in which this integration is taking place. While each story is unique, some overlap among them is observed.

**Observations:**

Despite the location, population, and venues described in the articles in this special edition, it appears that the authors, perhaps unintentionally, followed the process of the five step model for transnational application of career theory into their practice as proposed by Sampson
et al. (2000). Many of the authors identified the differentiated service delivery model as a major draw to CIP theory as a way to meet the burgeoning service demands. In each case, the dissemination of CIP principles occurred through face-to-face engagement and conversations with CIP theorists or visits to the Florida State University Career Center, where the integration of CIP into the practice of career service delivery could be observed. Through those interactions, relationships were formed, and multiple conversations held on how CIP might apply to the particular setting, including possible adaptations. As the authors moved from conceptualization to application, it was clear that formative evaluation was going on and adjustments made when necessary. Many reported that a formal, summative evaluation of the application had yet to occur, but acknowledged that it was desirable, planned for, and would be helpful in informing next steps. Overall, it appears that the implementation and adaptation of CIP as described through the voices of eight different countries was deemed positive and successful.

**Recommendations:**

Based on the experiences shared in this special edition, several tentative recommendations can be made:

- Determine the needs of the career service program (Sampson, 2008)
- Review existing career theories to determine which theory would best meet the specified needs. Consider:
  - The key elements, underlying assumptions and principles, research base, and existing international applications of each theory being considered.
  - What constitutes a theory:
    - A career theory is one that is based on empirical research and supported by a body of evidence (Brown, 2003; Sharf, 2013).
The purpose of theory:

- The assumptions and assertions of a theory are interwoven so as to guide career practitioners’ in their conceptualizations of and interventions with clients (Krumboltz & Nichols, 1990).

The caution against creating a theory by pulling from several different theories:

- While an ability to shift approaches with each client to best meet their needs is recommended (NCDA, 2016), approaching career theories with a buffet-mind approach (i.e., “I’ll take this idea from one theory, and that idea from another and create my own theory”) is not (Brown, 2002).

Thus, when considering applying a theory, the immediate question should not be “How can this theory be adapted to meet our clientele’s needs,” but, “Which theory appears to best address our clientele’s needs?” If a theory needs major or multiple adaptations in order to fit with a specific culture, perhaps that is not the best theory for the situation.

- Once determined, initiate collaborative conversations with the career theorist(s) or key authors and/or access related resources/professional development regarding the potential application and adaptation of the theory within the context of implementation.
- Attend to cultural considerations throughout each step of the process.
- Include all key players, including policy makers and those that contribute to program funding throughout the process, as well as staff and representatives of the group being served.
- Consider implementing in stages, and remember to include training for all involved.
- Maintain an attitude of humility, respect, openness and flexibility throughout the application process.

- Evaluate the degree to which specified needs are being met throughout the process, and also have a summative evaluation. Collecting baseline data before implementation and throughout will enable more objective evaluations, but do not neglect anecdotal comments from participants, staff, and others who interface with the program.

A final recommendation would be to document the process and to share the knowledge gained and lessons learned with others through various means. By doing so, theorists and countries seeking to adapt specific theories can continue the learning process, about how specific elements of a theory might need to be adjusted, and also how to expand our understanding of best practices for transnational application of career theory.

Summary

Transnational application of specific career theories is not a new topic. What is unique is to have several countries report on their story of application of a single career theory, in this case, Cognitive Information Processing theory, within their setting. In this special issue, they invite us all to join them as they share from the lens of their cultural context, and to listen and learn from their experiences.
References


doi:10.1080/07347332.2019.1580330


https://www.ncda.org/aws/NCDA/asset_manager/get_file/3395

doi.org/10.17744/mehc.27.2.gjruu78188fdvbm

doi.org/10.1111/j.1464-0597.2007.00284.x


https://career.fsu.edu/sites/g/files/upcbnu746/files/CIPBibliography_May2019.docx


Deb Osborn is a Professor in the Educational Psychology and Learning Systems department at the Florida State University, and a Nationally Certified Counselor. She is a Fellow and Past President of the National Career Development Association (2012-2013). She received her PhD in Combined Counseling Psychology and School Psychology from Florida State University in 1998. Her research focuses on the practical application of career counseling and vocational psychology, with a special emphasis of how individual characteristics (e.g., personality, self-efficacy, mental health) and career interventions (e.g., technology, assessments, information, career courses) affect career outcomes (e.g., career decidedness, satisfaction, confidence) through the lens of Cognitive Information Processing theory.
Dr. Seth C.W. Hayden is an assistant professor of counseling and coordinator of the clinical mental health program at Wake Forest University. Dr. Hayden has provided career and personal counseling in community agencies, secondary school, and university settings. Dr. Hayden’s research focuses on the career and personal development of military service members, veterans, and their families. In addition, he explores the connection between career and mental health issues and integrated models of clinical supervision designed to facilitate positive growth in counselors’ ability to formulate interventions. Dr. Hayden is a licensed clinical mental health counselor in North Carolina, a licensed professional counselor in Virginia, a national certified counselor, a certified clinical mental health counselor, and an approved clinical supervisor. In addition, Dr. Hayden is a past-president of the Military and Government Counseling Association and currently serves as the President-elect of the National Career Development Association, both divisions of the American Counseling Association.
Caitlyn Brown is a doctoral student in the combined Counseling Psychology and School Psychology program at Florida State University. Caitlyn has a Master of Science degree in Clinical-Counseling Psychology from Valdosta State University. She is currently working as a Career Advisor at the FSU Career Center. Her research interests include: the intersection of Adverse Childhood Experiences and career outcomes, ADHD, and the relationship between personality and mental health.