

# The connection between executive processing and career development

**Seth C.W. Hayden**

Wake Forest University, USA.

**Debra S. Osborn**

Florida State University, USA.

**Kaitlin Costello**

Wake Forest University, USA.

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**For correspondence**

Seth Hayden: [haydensc@wfu.edu](mailto:haydensc@wfu.edu)

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## Abstract

There is substantial evidence of the connection between career development and mental health. Executive processing, including associated feelings and thoughts, has been found to significantly impact career decision making and problem solving. This has implications for career practitioners tasked with addressing these complex concerns. Utilizing comprehensive frameworks that account for this connection is essential. Cognitive Information Processing theory (CIP; Sampson et al., 2020; Sampson et al., 2004) accounts for the interconnected elements of career and mental health, and specific dimensions of executive processing. Interventions derived from CIP as well as other approaches offer a structure in which to address executive processing elements influencing career development. Being intentional in assessing and addressing career-related thoughts and feelings enables a career practitioner to effectively and efficiently support those in need.

**Keywords:** Career theory; wellbeing; mental health; executive processing; Cognitive Information Theory

## Introduction

Work has positive effects on mental health and wellbeing (Fouad, 2007). It can also be a source of identity, social support, financial means, and other coping resources. Additionally, it can give an individual a sense of meaning and purpose. Given the importance of career, uncertainty concerning one's inability to find work can have a significant negative impact (Fouad, 2007). Broader economic, socio-political, and mental health factors influence individual's experiences and perspectives pertaining to career and work. These contextual

elements impact individual's perceptions of themselves. There are indications of the importance of career support on overall well-being, and arguments for expanding the scope of attention to mental health factors within career services (Robertson, 2013). This has implications for career practitioners in terms of scope of practice and degree of attention allocated to dimensions of mental health within the services they provide.

Within mental health, specific dimensions are indicated as being impactful on career development. Executive processing (EP) is concerned with metacognitive functions including self-talk (silent observations by individuals regarding their progress in decision making that can be perceived as positive or negative), self-awareness (the extent to which individuals are aware of themselves as decision makers, including the potential impact of self-talk), and monitoring and control (the extent to which individuals are able to monitor their progress in decision making and control the impact of negative self-talk) (Sampson et al., 2020; Sampson et al., 2004). Thoughts and feelings – aspects of EP – significantly influence career decision-making and problem-solving. An associated concept of EP, executive functioning, refers to the higher-level cognitive skills one uses to control and coordinate cognitive abilities and behaviors (Weill Institute for Neurosciences, n.d.). Self-control, selective attention, working memory, and cognitive flexibility are elements of executive functioning (Diamond, 2013). Career decision-making is a rational process, which involves emotions (Farnia et al., 2018).

Becoming more aware of thoughts and feelings related to career development will enhance strategies and associated activities designed to address a career concern. These attitudes, thoughts and perceptions of a career concern can have influence the potential for a positive outcome resulting from receiving career support services. The aim of this discussion is to enhance the awareness of practitioners and researchers of the importance of integrated career and mental health support by outlining relevant elements of EP, research specifying the EP factors that impact career development, and targeted theoretically grounded strategies for addressing EP in career services.

## Career development and mental health

There is substantial evidence of a connection between career development and mental health. Anxiety (Osborn et al., 2016), psychological distress and family conflict (Constantine & Flores, 2006), depression (Cardoso, 2016; Hayden et al., 2016; Rottinghaus et al., 2009; Saunders, Peterson, Sampson, & Reardon, 2000), and emotional and personality-oriented elements (Gati et al., 2011; Coleman et al., 2023) are associated with dimensions of career development. In addition, the financial strain and negative outlook of the future experienced by the unemployed has associations with psychological distress (Creed & Klisch, 2005).

Further evidence of the connection between career development and mental health has been identified within career assessment research. Dieringer et al. (2017) found that certain scales of the Career Thoughts Inventory (CTI: Sampson et al., 1996a), a measure of negative career thinking, positively correlated with the Beck Depression Inventory II (Beck et al., 1996) and the Beck Hopelessness Scale (Beck et al., 1993). Dipeolu, Hargrave, and Storlie (2015) found that elements of the CTI subscales of Decision Making Confusion and External Conflict and the Career Maturity Index-Revised, Attitudes subscale (Crites & Savickas, 1996), differentiated the diagnoses of attention-deficit hyperactivity

disorder and learning disabilities in young adults. This emphasizes the tangible connection between career and mental health and informs conceptualization of presenting concerns in career services. A specific component of importance within mental health of relevance to career development is EP.

## Executive processing and career development

The importance of EP is emphasized within various career theories. Both Social Cognitive Career Theory (SCCT: Lent, Brown, & Hackett, 1994, 2000) and Cognitive Information Processing (CIP: Sampson et al., 2020; Sampson et al., 2004) highlight the importance of focusing on cognitions associated with career decision-making. SCCT focus on perceived barriers, self-efficacy, and outcome expectations identifies dimensions of EP within this framework. CIP conceptualizes EP as a primary component of the theory. The EP domain of the Pyramid of Information Processing is an essential element indicated by CIP-related assessment, practice, and research. A more recent framework, the Hope-centered Model of Career Development, includes dimensions of EP through encouraging individuals to reflect on their circumstances; envision their future; and develop, implement, and adapt their plans as they build their desired life (Niles, Admundson, & Neault, 2011). These theories prioritize EP as essential for understanding the career development experience. These approaches have associated assessments and interventions designed to identify and modify thoughts and feelings which are hindering positive career development.

## Evidence of connection between executive processing and career development

There is substantial research indicating the impact of EP on aspects of career development. Negative career thoughts have been found to account for a significant amount of variance in elements of career decision state, career decidedness, and satisfaction with a career choice (Chason et al., 2013). Bullock-Yowell et al. (2011) found an increase in career stress correlated with an increase in negative career thinking, with negative thoughts contributing to lower levels of decidedness and satisfaction with a career choice, components of career decision state. A significant relationship between neuroticism and career decision state via negative career thinking has also been indicated (Bullock-Yowell et al., 2015). Affective experiences such as anxiety, confidence, and worry have been associated with negative career thoughts (Hayden & Osborn, 2020; Osborn et al., 2016). A meta-analysis of personal factors that predict career exploration found large effects for locus of control, vocational decision style, thinking-feeling, and self-efficacy (Lee et al., 2023). Specifically, self-efficacy has been indicated as impactful on career choice (Ye., 2014) and decidedness (Restubog et al., 2010).

To effectively address career concerns, interventions focused on cognitive and affective elements are warranted. In relation to recent events, negative outside circumstances such as the COVID-19 pandemic increase career anxiety (Mahmud et al., 2021). It is imperative given the impact of EP on career development to attend to these experiences within career theory, research, and practice.

## Career interventions for executive processing

Career theory and associated interventions have been shown to provide a useful structure for practitioners when attempting to design individualized interventions to enhance EP. These customized interventions allow practitioners to focus on specific goals for individual clients (Williams et al., 2018). Those who have received theoretically based interventions have indicated a valuing of the helping interaction (Osborn et al., 2016). A review of research on guidance innovation indicates that the three critical aspects to these interventions include the relationship between practitioner and client, the conversation structure, and the techniques used (Drobic, 2019). The complexity of a career concern requires practitioners to adapt interventions based on the needs of those they serve. Based on the characteristics of the concern and readiness to receive various interventions, this right-sizing of support ensures appropriate interventions and modality of support are utilized. CIP's differentiated service delivery model offers a framework for determining the degree of support related to readiness (Sampson, 2008; Sampson et al., 2020).

Career interventions can contribute to positive mental health outcomes (Osborn et al., 2016; Redekopp & Huston, 2019). Career management interventions can lead to an increased amount of career preparedness and therefore result in more positive mental health outcomes (Vuori et al., 2012). Evidence indicates a benefit of career interventions beyond career decision making such as having a significant positive influence on academic performance (Evans & Burck, 1992). Career practitioners possess the potential to enhance the EP experience through their provision of theoretically grounded, evidenced-based interventions.

## Cognitive information processing theory

Two primary components of CIP theory (Sampson et al., 2020; Sampson et al., 2004) are the Pyramid of Information Processing and the CASVE Cycle. The pyramid contains the ingredients of a career choice with three domains (i.e., knowledge, decision making, and EP). Within the decision-making domain, the CASVE cycle involves the process of navigating a career choice (i.e., Communication, Analysis, Synthesis, Valuing, and Execution). The apex of the pyramid is the Executive Processing Domain which emphasizes metacognitions and how these may impact career choices. These can be positive or negative, helpful or hindering in relation to career decision-making and problem-solving. Improvements in metacognitions enhance one's ability to more effectively manage the knowledge and decision-making domains enabling them to effectively navigate difficult career challenges (Osborn et al., 2020).

## Cognitive information processing theory interventions

CIP focuses on the thoughts and feelings associated with career decision making and problem solving (Dozier & Osborn, 2018; Sampson et al., 2020; Sampson et al., 2004). The EP domain within CIP theory includes specific elements of cognitive and affective elements of career decision making and problem solving (Sampson et al., 2020; Sampson et al., 2004). A concept within CIP is readiness in career decision making, as it has been found to influence one's ability to successfully navigate a career concern (Leierer et al., 2020). Adapting interventions based on the degree of readiness is essential to efficient

and effective support (Sampson et al., 2020; Sampson et al., 2004). Evidence of the importance of individualizing support is indicated by young individuals experiencing negative attitudes towards career support because they felt that the support was less tailored to their individuals needs and aspiration (Orlando, 2022).

The Differentiated Service Delivery Model provides a framework in which to adapt interventions based on readiness (Sampson, 2008; Sampson et al., 2020). The Career Thoughts Inventory (Sampson et al., 1996a) provides a global score of negative career thinking along with subscales of Decision Making Confusion, Commitment Anxiety, and External Conflict. This specificity enables precise identification of the degree and nature of negative career thoughts that are impacting progress towards goals. The associated Career Thoughts Inventory Workbook (Sampson et al., 1996b) offers the opportunity to modify problematic beliefs via cognitive reframing.

Another CIP intervention that engages the EP domain is the Decision Space Worksheet (DSW: Peterson et al., 2016). Aimed at identifying and exploring the complexities that a person is experiencing as they consider their career concern, the DSW connects thoughts with emotions. Clients are instructed to list all elements, including thoughts, feelings, people, relationships, financial aspects, and so on, and to indicate whether each is having a positive, negative or neutral influence on their decision. The next step involves creating a visual demonstration of how much of an impact each is having, and how they intersect with and affect each other. Connecting thoughts and feelings during this intervention can provide a more complete picture of what is affecting the person's readiness to engage in career decision-making and problem-solving (Sampson et al., 2020; Sampson et al., 2004).

Within a higher education setting, a CIP-based career course can be useful for providing career support as a curricular offering. The course is characterized by defining of CIP concepts, assessing for the existence of negative career thoughts, and engagement in experiential activities associated with components of the theory (Reardon et al., 2022). This course has been found to positively impact various components of EP such as career choice satisfaction, career decidedness, career affective state, and vocational identity (Freeman et al., 2017; Galles & Lenz, 2013; Miller et al., 2018). Using the format of this course provides an educational experience which impacts EP.

Finally, the recent events in the world such as the pandemic have created a loss of agency in relation to career decision making. Circumstances outside of one's control can significantly impact thoughts and feelings associated with career and work. Hayden et al. (2021) identified specific strategies designed to enhance agency for each component of the Pyramid of Information Processing. Assessing for a sense of agency and utilizing these strategies can enhance EP in relation to career development.

The Tech Center in the Florida State University Career Center is specifically tasked with overseeing the development of CIP theory, facilitating the ongoing investigation of the approach, and disseminating evidence-informed CIP interventions. Resources such as a bibliography of writings, conference presentations, and intervention resources related to this approach can be found at the FSU Tech Center website: <https://career.fsu.edu/tech-center>.

## Other interventions to strengthen executive processing

While CIP offers several EP-related interventions, other career interventions can also be utilized, especially those that focus on supporting the cognitive-affective connection, personal agency, decision-making skills, career decision-making self-efficacy, and the importance of exploring and challenging negative career beliefs and self-talk. A relatively easy intervention to incorporate into the career practitioner's toolkit is to expand beyond thoughts to include emotions in career support. For example, Yates (2015) recommended that "career practitioners initiate fruitful conversations about their intuitive and emotional reasons even with clients who articulate sound rational reasons for their choices" (p. 33). At its simplest level, this might involve asking questions that direct the client to consider their feelings, such as, "You've been sharing how you need to make a decision within the next week, and that you're not sure how to go about it. How does that feel to you?"

Houston and Cunningham (2018) suggested that career practitioners encourage clients to combine rationality with intuition or gut instinct as they engage in career-related research and activities. A practical extension of that suggestion might emerge as a client is considering the pros and cons for several options and upon exhausting the list, to inquire if their list resonates with what their "gut" tells them they should choose. For those who have difficulty articulating their thoughts and emotions, a career activity such as creative narrative writing (Simpson, 2011) could be useful. A final example that can elicit both thoughts and emotions was described by Dallison (2019). She explained a diagramming career activity called "PLAN: Me" that aims to enhance personal agency through combining goal setting and creating visual depictions of their career planning process. Each of the activities described above strengthen the goals of EP by encouraging acknowledgement and exploration of thoughts and feelings associated with the career concern, and regularly returning to them as the client engages in career decision-making activities.

## Use of common career practices to enhance executive processing

Career practitioners are ideally positioned to provide opportunities for enhancing EP via tasks commonly utilized within career service delivery. Various interventions such as information interviews, mock interviewing, resume/CV support, and other associated activities offer a means of bolstering one's view of their capability within the career development process. Individuals learning how to apply career-decision making skills to their concern, such as through the *Guide to Good Decision-Making* (Sampson, 2008; Sampson et al., 2020) builds competence and can contribute to career decision-making self-efficacy. Operating with a specific focus on the impact of these interventions on EP adds a degree of intentionality to the process.

While facilitating these activities, being intentional in assessing thoughts and feelings experienced in the completion of these tasks offers valuable insight into EP. Though this may appear to detract from the efficiency of addressing a specific need, the established importance of EP within career development indicates the need for attention to this dimension of their experience. Given the evidence of the importance of impact of EP on career development, attending to this within career practice is essential.

Integrating career practice, research, and theory offers a sophisticated framework in which to address the complex elements of career development. Conceptualizing career decisions as impacting thoughts and feelings requires practitioners to respond in kind. Though there is variation in the degree of capability in terms of training that career practitioners possess when address elements of mental health, some proficiency in this area is needed in order to appropriately address the needs of those they serve.

## Referrals to mental health support

There are instances when the mental health dimensions of an individual's experience are so pronounced that it significantly hinders the ability to meet career goals. In this case, a referral to mental health support would be beneficial. If a referral is deemed necessary, the career practitioner is still an essential component of the treatment support team. EP concerns in need of specific attention are often long-lasting requiring protracted support. Many career concerns require a time-sensitive resolution and specific action. Given this reality, career practitioners who are not qualified to address more severe mental health concerns can partner with a mental health provider to offer a continuum of care.

Though referrals for mental health services are an appropriate response to certain EP concerns, career practitioners often encounter career-related problematic feelings and thoughts such as anxiety about concern or a lack of self-efficacy in certain skills. To account for this, it is essential, regardless of professional identity, to possess proficiency in assessing and addressing elements of EP. Taking a holistic approach to addressing a career concern which includes a curiosity about the broader context of an individual's experience appropriately orients the practitioner to identify and support EP skills for career decision making and problem solving. Consultation, supervision, and training are resources for enhancing capability in addressing dimensions of EP.

## Conclusion

This examination of EP within career development is intended to broaden awareness of this dimension of the career experience. While it is acknowledged that there exists a connection between career and mental health, evidence and specificity is needed to inform the work of career practitioners in this area. With this understanding comes responsibility on the part of career practitioners to develop competence in enhancing EP within career services.

Given the complexity of career concerns, holistic responses grounded in theory offer a sophisticated framework in which to support those in need. EP and its associated elements have been indicated as impacting career development. Cognitive Information Processing theory is a framework that offers both assessment and intervention strategies to identify and enhance EP. Attending to this aspect of one's experience can positively impact career decision making and problem solving.



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