Decision-making of early career academics: The possibilities for the Objective Knowledge Growth Framework

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Abstract: Early career academics (ECAs), those who are within the first five years of completing their Ph.D. studies, go through an intense transition process as they deal with career shifts, increasing workload, and job insecurity. As they navigate this new role, they must approach career decision-making effectively and efficiently. This paper aims to review the Objective Knowledge Growth Framework (OKGF) and argue its viability for career decision-making of early career academics. Furthermore, this paper demonstrates the cyclic process of the OKGF and how it facilitates decision-making. This paper will interest those in their early academic years searching for a straightforward and systematic self-implementing approach to career decision-making.

Keywords: career decision-making, early career academics, Critical Rationalism, Objective Knowledge Growth Framework

Introduction

Every day in our lives, we make decisions. Choosing the time to get up from bed in the morning, to either take a quick shower or not, our food choice for breakfast, our clothes to wear, what shows to watch on Netflix, and the list goes on. We are all seemingly programmed to make decisions. However, when decisions become more complex and have more significant implications in our lives, some of us are surprisingly cognitively unprepared, and the decision-making process slowly becomes an ordeal. One of the most crucial yet complex decisions individuals make in their lifetime is career choice (Gati et al., 2019; Lerche et al., 2022; Willson & Given, 2020). One's career choice highly impacts their entire life and determines their happiness levels and life satisfaction (Koçak et al., 2021). Unfortunately, career-related decisions may entail stressful and personally threatening situations that some avoid and let things 'take the natural course' (Thoresen & Ewart, 1976). By definition, career decision-making is a process that occurs throughout one's lifetime, and its components occur before, during, and after choosing a profession, including the efforts to be successful (Nästesjö, 2021).

The purpose of this paper is twofold: first, to present the tensions and career decision-making dilemmas of early career academics (ECAs), and second, to make a position that a model based on Critical Rationalism can also be a valuable method for decision-making. Although there is no agreed definition for the term 'early career academics,' current literature generally refers to ECAs as academics who are in a phase of transition in their career—from recently completing their PhDs to securing a tenured position in academia (Acker & Webber, 2017; Aprile et al., 2021; Nästesjö, 2021; Sutherland et al., 2014; Sutherland, 2018). Specifically, many researchers define ECAs as young scholars who are within the first five years of completing their PhDs (Bosanquet et al., 2017; Hemmings et al., 2013; Willson & Given, 2020).

Crossroads in Academia

Among academics in higher education, ECAs are in the most critical situation to make informed decisions. They are going through a transition process from finishing a doctoral degree to securing a tenured position which may be a time of chaos and uncertainty, entailing co-occurring career and personal change (Willson & Given, 2020). For some, the transition may translate to personal relocation to a new workplace or reframing of one's personal and professional identity, alongside the adoption of new roles and responsibilities (Willson & Given, 2020). For others, it may mean a turning point of whether building a career in academia or pursuing an alternative career (Koçak et al., 2021). In a nutshell, ECAs are inundated with various tensions during the transition.

One of these tensions is employment insecurity after completing a doctoral degree. Many recent studies claim that an oversupply of PhD graduates entering the academic workforce leads to hyper-competition for permanent positions (Bonache et al., 2022). In a study conducted in Germany, for example, Morais and Hariskos (2018) cite that 5,844 or 20% of new Ph.D. recipients in the country seek academic positions. They argue that there is a very slim chance for this 20% to land a tenure position considering federal statistics that only 825 professors can be expected to retire annually in Germany (Morais & Hariskos, 2018). In other words, among 5,844 PhD graduates, only 825 have the chance to be offered a permanent position. While the rest can remain in German academia, "hired

in short-term contracts, with the accumulation of professorship aspirants from one year to the next decreasing the probability that one will be appointed professor" (Morais & Hariskos, 2018, p. 2). Research has shown that navigating through employment uncertainty in academia explains why many are undecided about which career trajectory to pursue (Lerche et al., 2022) or whether a career in academia is ever worth all the struggles one has to surpass in graduate school.

Besides employment uncertainty and insecurity, another tension in academia is the demand to be intensely productive in research output. A vast body of literature on the experiences of ECAs reveals that success in academia relies heavily on research productivity, wherein publication of scholarly works is not only viewed as the primary form of currency in academia (Acker & Webber, 2017; Sutherland et al., 2014; Sutherland, 2018) but also as a portable wealth which every young scholar in the academy must possess (Gray, 2012). In a knowledge-driven society, where higher education institutions are incentivized for high-quality research, research output is an essential job requirement should ECAs wish to stay in academia. In his list of 299 ways to succeed in academia, Gray (2012) focuses exclusively on research and networking as crucial aspects of a successful academic career rather than teaching and service. Similarly, findings of an earlier study on the experiences of ECAs in New Zealand universities reveal that "success in academia is primarily about productivity and output in research, and reputation amongst disciplinary peers … [while] teaching is noticeably absent from the narratives on success for early career academics" (Sutherland et al., 2014, p. 2). Therefore, creating a decision-making crisis for aspiring academics to pursue a teaching or a research career. Furthermore, the 'publish or perish' rhetoric establishes an institutional milieu in which a sense of collective community comes secondary to individual performance in papers published and grants won (Aprile et al., 2021); hence, raising questions as to how such a milieu impacts ECAs career decision-making and professional identity.

In addition to navigating employment uncertainty and being academically productive, the transition phase from graduate school to a career in academia also coincides with the family formation stage for ECAs. This places women in particular in a dilemma of whether to commit fully to their highly stressful and competitive workplace or postpone parenting until achieving tenureship (Bonache et al., 2022; Lerche et al., 2022). Many research findings highlight that most women who invest in their careers before becoming mothers tend to have children at older ages for fear of losing job opportunities or training (Barbieri et al., 2015; Caretta et al., 2018; Cohen et al., 2020). For instance, in two separate studies on the experiences of ECAs on family formation, findings suggest that women perceive parenthood as a barrier to their academic career, and parenthood lead to difficult choices for women who find themselves at a crossroad between wanting to prosper professionally or to take care of their children (Bonache et al., 2022; Morgan et al., 2021). Although parenthood creates the same expectation from both men and women in terms of childcare responsibilities, Morgan et al. (2021) argued that women spend more time in housework and in childcare than men. In their study on why men in academia typically publish more than women, Morgan et al. (2021) found that among parents, fathers tend to protect their research time which increases the likelihood of publishing more papers and thus, advancing their academic career. As universities increasingly adopt neoliberal policies in hiring, retention, and promotion of their employees - where research productivity is given more emphasis than teaching - recent research indicates that many more early-career women are leaving academia than men, a pattern that is often referred to as 'the leaky pipeline' (Morgan et al., 2021; Vohlídalová, 2021; Cech & Blair-Loy, 2019; Wolfinger et al., 2008).

In sum, the studies mentioned in this section demonstrate that the first few years are among the most crucial phase for decision-making in an academic career. They also indicate that building an academic career is a convoluted and complex process of decision-making and requires a mindset "prepared to make informed and timely decisions" (Wyllie et al., 2021, p.1). While some people can make career decisions smoothly, the literature abounds with research on highly educated professionals experiencing difficulty in career decision-making (Amir et al., 2008; Brown & Lent, 2008; Gati et al., 2019). In what follows, we shall briefly review the literature on career decision-making and present contrasting yet equally valid paradigms that may guide ECAs in their career choice.

Decision-making of Early Career Academics

Success in academia depends on an individual's preparedness to tackle life-changing decisions that seriously impact one's career. Essentially, what sets a career apart from a job lies in one's mindset. A career-driven mindset is making an effort to be successful in advancing one's job rather than leaving it in the hands of others (Caniëls et al.,

2018; Cannon & Shay, 2018). In addition, a career is a process that continues throughout one's life (Koçak et al., 2021) and requires making sound decisions using various resources. For young academics, these resources are usually in the form of mentors. Bäker et al. (2020) explain that mentoring is a common phenomenon in academia when the mentor, usually a more experienced academic, guides and supports the less experienced mentee in the rite of passage from being a novice to a professional.

On the contrary, Ansmann et al. (2014) claim that the traditional 'one-to-one-protégé-mentor' relationship is no longer realistic and beneficial in a rapidly changing environment in academia. Academic careers are no longer a linear process but "a series of learning cycles" (Ansmann et al., 2014, p. 1) because of globalization, increasing campus diversity, and demands for faculty mobility— thus, making career paths unpredictable, unstable, and complex (Gati et al., 2019; Krieshok et al., 2009). This necessitates less experienced academics such as ECAs to be empowered and not solely rely on mentors to advance their academic careers. Instead, they must actively collect vast information on their career choices and develop relevant skills in processing information effectively and efficiently.

Literature is rife with paradigms of how individuals process information by which decisions are made. For most of its history, paradigms on career decision-making are largely influenced by the logical positivist worldview, which highlights rational decision-making and emphasizes "objectivity over subjectivity, facts over feelings" (Patton, 2019, p. 76). In addition, positivism operates on the notion that knowledge is value-free and that human behaviour can be studied independently of their environments and the contexts within which they work and live (Brown & Lent, 2008). In other words, logical positivism views human behaviour as an objective, measurable, and linear phenomenon. Over the years, however, many researchers of career decision-making have been disappointed with logical positivism as it fails to account for the complexities of human behaviour. This gave rise to the constructivist worldview. Constructivism views knowledge as constructed, a product of an individual's interpretation, sense-making, and engagement with their environment (Gilbert, 2018; Goddard, 2020). Additionally, constructivism draws attention to the "proactive nature of human knowing, acknowledging that individuals actively participate in the construction of their own reality" (Patton, 2019, p. 75).

Most recent social learning models of decision-making adopt the philosophical underpinnings of constructivism. For instance, Krumboltz's (2010) instrumental learning model proposes that individuals learn by observing and reflecting on their actions' positive and negative consequences. Thus, decision-making depends on one's ability to process experiences, information, and feedback from the social environment. Nevertheless, critics of constructivism contend that individuals' cognitive abilities to make decisions are limited in various ways, and as such, they tend to process information selectively and with bias (Gati et al., 2019). Simon (1990) describes an individual's cognitive limitation as bounded rationality. Bounded rationality indicates that individuals' limited ability to solve problems may result in irrationality, and thus, they are prone to error which may have significant impacts on the decision-maker and the decision-making process (Chitpin & Simon, 2006; Gati et al., 2019; Simon, 1990).

The current paper draws attention to a paradigm that acknowledges the human tendency to be irrational and considers the contexts, experiences, and exigencies that may influence individual decision-making. This paradigm is known as Critical Rationalism. Unlike positivism and constructivism, which view knowledge as objective and constructed respectively, critical rationalism holds the view that knowledge develops through conjectures and refutations. It suggests that as we deal with challenges presented by reality, we create conjectures (or theories), just as a scientist creates a hypothesis when confronted with a scientific problem. For critical rationalism, knowledge does not grow when we strive to prove that our theories or solutions are correct, instead, it grows when we discover what is wrong with them through criticisms (Chitpin, 2021; Paya, 2018). Although Karl Popper (1972) originally developed critical rationalism to offer a philosophical paradigm to natural sciences (Ormerod, 2014), many disciplines in humanities and social sciences have recently engaged in its philosophical underpinnings such as in education, psychology, and literary criticisms, among others (Chitpin, 2016; Cruickshank, 2007; Shtufi, 2018). In what follows, we shall present the Objective Knowledge Growth Framework (OKGF), a decision-making model based on critical rationalism and discuss how it can be a viable model for young academics in making decisions about their career.

The Objective Knowledge Growth Framework (OKGF)

As individuals are confronted with different situations or circumstances that may shape their decisions, career decision-making can be cognitively laborious and complex (Gati et al., 2019). At the outset, we cited a few tensions and dilemmas that ECAs deal with as they transition from university to academia, whether to: pursue an academic or a non-academic career path; focus on research or teaching; or, to progress in one's career or potentially slow down to become a parent. Moreover, Gati et al. (1996, 2019) argue that these social variables can result in bias and limit opportunities for systematic decision-making. To overcome these biases and limitations, Chitpin (2014, 2016, 2018, 2021) developed the Objective Knowledge Growth Framework (OKGF) based on Popper's critical rationalism, thus, creating a systematic process for decision-making. On the one hand, the relevance and usefulness of the OKGF in career decision-making are yet to be empirically known, as no study to our knowledge has been conducted for such purpose. Nevertheless, on the other hand, Chitpin (2021) has proved through empirical studies that the OKGF is beneficial in workplace decision-making for teachers and school leaders. To cite a few, Chitpin et al. (2008) conducted a study on pre-service teachers' use of the OKGF as a framework for reflection during practicum. Their findings revealed that the OKGF is a potential self-directed professional development tool for pre-service teachers as it can "help them cognitively and critically confront the complexities of the teaching/learning process and their relationship to pedagogical knowledge" (Chitpin et al., 2008, p. 2056). More recently, Chitpin (2020) examined the extent to which the OKGF can assist school principals in solving issues or problems they encounter in their practice of distributed leadership. From the results of her study, Chitpin (2020) proved the value of the OKGF in bringing to light issues that school principals might ignore or resist, thus helping them to become "not only wiser but bolder" (p. 228). As such, we argue in this paper that early career academics may also benefit from the framework in solving problems related to their career.

The OKGF follows a cyclical process of identifying an initial problem (P1), creating tentative solutions (TT1), eliminating errors (EE1), and as the process is expected to result in new information, another problem (P2) is expected to arise (Chitpin, 2018). Thus, the cycle continues until the decision-maker arrives at the "best choice in resolving the identified problem" (Chitpin, 2020, p. 221). Chitpin (2014, 2020) summarizes the process in a simple equation:

$$P1 \rightarrow TT1 \rightarrow EE1 \rightarrow Pn$$

One of the reasons decision-making is a cognitively demanding and complex task is the considerable amount of relevant information one must process. Gati et al. (2019) point out that the goal of an effective decision-making model should be to reduce the amount of information one must collect and process, thus, helping the decision-maker focus on relevant information. In addition, dividing the decision task into different stages enables the decision-maker to address the problems one at a time (Pitz & Harren, 1980). The straightforward schema of the OKGF affords decision-makers to explore a specific problem situation more systematically and efficiently, avoiding further loss of time and effort resulting from confused, disorganized, and non-comprehensible processing of information at hand.

Furthermore, when ECAs find themselves at a career crossroads, the OKGF promises a consistent method that guides them to analyze their career alternatives carefully. The idea of the initial phase of the OKGF is for ECAs to zoom in on one specific problem at a time. The zooming-in phase enables ECAs to articulate and be more explicit about the issues, constraints, and biases associated with the problem. In the next step of the OKGF, that is, the tentative solutions (TT1) stage, ECAs are expected to create theories or predict solutions to resolving the problem. At this stage, ECAs may experience information overload as they gather more information about their alternatives. Thus, by deep introspection and self-reflection of identified tentative solutions through error elimination (EE1), ECAs can create a refined short list of possible options. The EE1 phase involves "distancing oneself from short-term emotional and conflicted feelings" (Chitpin, 2020, p. 221) and critically approaching the solutions by considering the issues, constraints, and biases brought to light in the previous phases. At this stage, ECAs must also be brave in confronting personal biases, conflicts, and hidden fears should they want the elimination process to succeed. In addition, ECAs can detect potential mistakes and learn from them more systematically through error elimination. Finally, as ECAs progress through the OKGF sequence, they develop new knowledge and gain more insights into the original problem. The new information emerging from the sequence must also be explained and examined, thus giving ECAs additional advantage by investigating the new problem (Pn) and finding new discoveries about the original problem (Chitpin, 2013).

Essentially, using the OKGF as a framework in career decision-making is following prescribed steps to search for obstacles that might prevent decision-makers from achieving their goals. On the contrary, Thoresen and Ewart (1976) warn that career decision-making has far more complexity than memorizing prescribed steps. While this may be true, Chitpin (2021) suggests that although the three steps in the OKGF are sequential in general, they are not rigid. In making career decisions using the framework, ECAs can freely backtrack or retrace the steps on something that they have learned. Further, critics of the OKGF maintain that finding satisfactory solutions in decision situations requires decision-makers to have enough relevant knowledge for them to recognize these solutions (Albert, 2017). The assumption of incomplete knowledge is that "a solution is implied by the decision maker's knowledge without the decision maker being aware of the solution or of the fact that it is a solution" (Albert, 2017, p. 329). Indeed, how would OKGF users know when to stop the cycle? In other words, how would ECAs know if they have arrived at the most appropriate decision?

As mentioned, every decision requires predictions or conjectures. That is, decision-makers internally simulate outcomes and their possible obstacles. Simply put, the OKGF provides a systematic framework where ECAs can subject potential solutions to criticisms— when obstacles are found in a specific solution, such solution is discarded, and other alternative solutions are considered. The OKGF cycle only ends when the identified solution can no longer be refuted, and the user finds it to be the most appropriate.

Conclusion

The OKGF as a decision-making schema in educational settings has been recently gaining attention through the works of Chitpin (2016, 2018, 2020, 2021). Her works included using the OKGF in school principals' decision-making and teacher professional development. The users of the OKGF in these studies corroborate that the schema has been influential in their knowledge growth and professional learning. The OKGF has forced them to leave their comfort zone by challenging their established beliefs and facing inconvenient truths brought to their attention (Chitpin, 2021). Similarly, when dealing with challenging career decisions, the OKGF can be a suitable framework for ECAs in addressing simple to complex situations. The schema will force them to be more explicit about their problem situations and illuminate hidden fears and personal biases. Furthermore, and more importantly, the cyclic process of the OKGF encourages self-reflection and provides a guide for a systematic self-implementation, thereby facilitating better decisions.

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Stephanie Chitpin, PhD: Stephanie is the secondary author of this paper. Stephanie has established an active and innovative research program focusing on decision-making of school leaders using the Objective Knowledge Growth Framework (OKGF), based on Karl Popper's work. She is the principal investigator and recipient of the SSHRC Connections Grant (2021) and SSHRC -Insight grant (2017-2020) on Understanding Principal Decision-Making for Improving Student Outcomes in two Canadian Provinces (ON, SK). The research conducted in the UK is published in a book entitled Understanding Decision-Making in Education Contexts: A Case Study Approach (2021). Since 2017, Dr. Chitpin has been involved in a professional development project with school administrators (Conseil scolaire de district catholique de l'Est ontarien) on the use of the OKGF for decision-making purposes. Her research on The Knowledge Network for Applied Education Research (KNAER), funded by the Ontario Ministry of Education, is the first of its kind to explore how educators across Canada cope with, and respond to, high stakes demands that affect diverse stakeholders and require wise and astute decision-making. She was also involved in a three-year SSHRC project entitled Documenter et analyser les CAP pour favoriser la réussite scolaire en milieux scolaires francophones with 17 educators in 3 provinces (ON, QC, NB). As principal investigator of a SSHRC Research Development Initiatives grant (2007-2010), Dr. Chitpin used the OKGF with pre-service teachers as a data collection tool in the area of assessment. The findings were published in 3 refereed journals & 6 conference proceedings and suggest that pre-service teachers who are exposed to the framework improved their performance through reflecting on their decision-making practices and, thus, maximized students' success. The results demonstrate the need for examining the OKGF with school leaders to learn how the latter make decisions and how their decisions impact student learning.