**Integrating Psychological Contracts and Ecosystems in Career Studies and Management**

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**Abstract**

Psychological contracts, an individual’s system of beliefs regarding exchange arrangements, are key components in the construction and development of individual careers and the career systems of organizations and societies. In explicating careers and their management, multiple stakeholders are increasingly relevant to worker psychological contracts as individuals shoulder greater responsibility for their own careers and seek resources and ties with diverse career agents. The roles played by stakeholders who serve as career agents vary as a function of the larger career ecosystem in which the individual is embedded. We offer an ecosystems perspective as a bridge for understanding the intersection between psychological contracts, careers and the multiple stakeholders of each.

Key words: Careers, Psychological contracts, labor markets, globalization, employability, career eco-system

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In the decades since its inception by Hughes (1937), career studies has endorsed an increasingly dynamic perspective (Arthur & Rousseau, 1996; Baruch & Bozionelos, 2011). The shifting of responsibility for careers from firms to workers has fueled a more individualized career orientation (Gubler, Arnold, & Coombs, 2014; Hall, 2004) and recognition of the role multiple parties can play in creating career opportunities and exchange of benefits (Arthur, & Rousseau 1996). Factors influencing this dynamism include the globalization of business and labor markets and technological changes endemic to the knowledge economy (Baruch, 2001a). We note a corresponding stream of scholarship began with the idea of psychological contracts as implicit agreements between supervisors and employees (Argyris, 1960), and evolved into an '*individual* psychological contract,' as a personal mental model of an exchange arrangements typically involving a worker and his or her employer (Rousseau, 1995; 2001). Market forces and corporate responses drive labor practices that create highly differentiated forms of employment among workers (Lepak & Snell, 2002), altering both the nature of their psychological contracts and how individuals and organizations enact careers. Integrating the two literatures provides insight into career phenomena and employment relationships within the wider employment ecosystems in which career actors are embedded (Baruch, 2015).

The concept of a career ecosystem is key to understanding contemporary careers, which are characterized by a shift to greater agency on the part of advantaged workers (Rousseau & Arthur, 1999) and precarity on the part of less-advantaged ones (Lee & Kofman (2012) as internal labor markets have given way to more inter-organizational or boundaryless careers (Arthur & Rousseau, 1996). We will show how careers depend on the nature of the larger ecosystem in the context of these shifts, an ecosystem of interdependent organizations, economies, institutions and relationships in which workers are embedded (Baruch, 2015). Just as ecosystems differ in the biological world in terms of their stability and munificence, they differ in the context of careers, impacting the career opportunities and constraints individuals face--and altering the meaning of core concepts in career research as a result.

Macro-changes over time help highlight the changes in career phenomena related to ecosystems. Increased market globalization and competition since the 1980s has led to the migration of risk from organizations that once protected core workers from market volatility to individuals who now regularly confront cycles of employment and unemployment entrained to market fluctuation (Rousseau, 2006). Governments in some countries have dialed back supports for the less economically advantaged, often framing these cuts as means of attaining global competitiveness (Lee & Kofman, 2012). Although that risk migration has been occurred worldwide, differences in local and regional ecosystems have implications for how career actors respond. Following the 2008 financial crisis, for example, the career opportunities of young professional women in Greece and Italy were particularly constrained relative to the careers of men and non-professionals due to the dependence of these women on governmental employment (as school teachers, social program directors e.g., Karamessini & Rubery, 2011; Simosi, Rousseau, & Dashaliki, 2016), in contrast to more diversified employment opportunities in more developed countries. We will describe such differences in terms of ecosystem-related constructs as resilience and fragility and then develop their implications for career phenomena particularly in the nature of exchange arrangements and opportunities.

Recognizing the effects of broader career ecosystems directs attention to certain changing and relatively understudied dynamics of psychological contracts in contemporary employment. This chapter calls attention to the need for a more comprehensive view of employment-related exchange arrangements beyond the individual worker and an employer, where participants (workers, managers, employers, clients, team members, network partners, etc.) develop multi-faceted psychological contracts across several stakeholders (e.g., Alcover, Rico, Turnley, & Bolino, 2016; Bordia, Restubog, Bordia, & Tang, 2010; Claes, 2005). Psychological contracts research has largely emphasized the individual employee perspective, out of recognition of the impact that individual mental models of the employment exchange have on workplace behavior and outcomes (Rousseau, 1995, 2001; Coyle-Shapiro, Shore, Taylor, & Tetrick, 2004). Less attention has been paid to the perspective of the other common party in employment that is, the employer (with some exceptions, Dabos & Rousseau, 2004; Taleab & Taylor, 2003). Now the challenge is to incorporate not only the perspectives of employers into studies of psychological contracts but also other employment-related stakeholders, including the firms brokering the employment of contractors and freelancers (e.g., Davis-Blake & Broshak, 2000), non-profit and other organizations that utilize volunteers, and other network channels (such as freelance project work) through which workers gain career opportunity (e.g., Friman, Gärling, Millett, Mattsson, & Johnston, 2002; Parhankangas & Landström, 2004; Peel & Inkson, 2004). Psychological contracts in these domains can entail terms not included in typical employee-employer psychological contracts, for example, agreements among network parties to compete for talent but not necessarily for clients, a commitment to help new entrants find skill-building work through one’s social network even if not in one’s own organization or a willingness to work without pay to gain critical experience for a job elsewhere. Developing a psychological contract in line with important goals is fundamental to career planning and management. Yet the research literature is fragmented, heretofore failing to specify how psychological contracts are linked to the multiple stakeholders associated with careers and the goals career actors pursue (Baruch, Szücs, & Gunz, 2015).

The large literatures on career studies and psychological contract are built on several domains related to organizational sociology, psychology and behavior (Arthur, Hall & Lawrence, 1989). Career studies has benefitted from comprehensive reviews of contend and research trajectory (Sullivan & Baruch, 2009; Baruch & Bozionelos, 2011) as well as from critical bibliometric analyses, which means using quantitative analysis of written publications (Lee, Felps, & Baruch, 2014; Baruch et al., 2015). Psychological contract theory has been treated in some depth with respect to its implications for organizations and work relationships (McDermott, Conway, Rousseau, & Flood, 2013; Rousseau, 2010; Tomprou, Rousseau, & Hansen, 2015; Zhao, Wayne, Glibkowski, & Bravo, 2007). Our focus here is on the intersection of these two literatures with respect to the contemporary and future dynamics of employment and organizations. In doing so, we make several contributions. We integrate two literatures, positioning the psychological contract and the goals it helps realize as a key mechanism in the career ecosystem. Through this mechanism, career actors become party to a web of psychological contract obligations as they seek to create future opportunities for themselves and others by their present contributions and commitments. We describe this eco-system, with an emphasis on the dynamic nature of relationships among many stakeholders and posit the psychological contract as the basis of bonds connecting career actors. These bonds can establish an equilibrium manifest in local, regional and global work systems that varies in its dynamism or fragility. Lastly, we elaborate on the practical implications of our ecosystem perspective on psychological contracts and careers.

Figure 1 presents elements of an overall framework, which we will use to explicate how career ecosystems function, where multiple actors and their relationships underpin the creation, recreation and development of career-related psychological contracts in and outside employment. We posit that the creation and maintenance of psychological contracts is a major mechanism through which actors are interconnected, providing a means by which career goals are met. These contracts influence the relationships and interdependencies across actors, and through these the sustainability of the career ecosystem (Baruch, 2015).

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**Careers – Traditional and “New” Careers**

The traditional model of career has been an open-ended and potentially long-term relationship between an individual and the employing organization. Career progress was assumed to be linear, taking place within the context of stable career ladders (e.g., Super, 1957; Levinson, 1978). Success reflected individual progression up the firm’s hierarchy, thereby gaining higher status and an upward slopping wage curve that continued to retirement (Lazear, 1980; Ritter & Taylor, 2000). Responsibility largely fell to employers to plan and manage careers, via their human resource management (HRM) practices (Baruch & Peiperl, 2000), which treated workers as company assets to be optimized (Pfeffer, 1994). Scholars paid little attention to careers outside of an organization’s internal labor market, many of which were conceptualized as the lower tier of a two-tiered labor market (Lazear, 1981). The traditional employee-employer relationship was typically characterized as an exchange of mutual commitment and loyalty, founded on implicit promises of job security and an attractive future (Lazear, 1980; Rousseau, 1995). In some countries, unions or other forms of representation were involved in setting employment conditions (e.g., Cadin, 2000; Kochan, Katz, & McKersie, 1986).

Changes in economy, technology, globalization, and society have brought significant transformation to employment practices and careers in general. Following the “Work in America” project of the 1970s, for example, papers were commissioned to analyze the changes in jobs and careers in the intervening years (Lawler & O’Toole, 2006). Their key findings include the reduced payoff from education to employment (Finegood, 2006), the weaker bonds between workers, co-workers and their employers (Pfeffer, 2006), the decline and dysfunctionality of unionism (Kochan, 2006), rising wage inequality with reduced access to benefits including healthcare (Levenson, 2006), and demographic trends toward younger top managers with fewer organizational ties and an unstable hold on the top spot (Cappelli, 2006). Contemporary careers thus occur in a variety of contexts, within, between, and outside firms, with blurry boundaries between stable and unstable employment (Arthur & Rousseau, 1996), paid work and career-oriented volunteering (Simosi et al., 2016), and entrepreneurs and contractors (Feldman, Francis, & Bercovitz, 2005; Peel & Inkson, 2004 ).

An updated model of careers became an “evolving sequence of a person's work experience over time." (Arthur, Hall & Lawrence, 1989, p. 8), elaborated as "a pro­cess of individual worker development along a path of experience and roles in one or more organizations" (Baruch & Rosenstein, 1992). Individuals are now seen as challenged to take proactive approaches to their careers (Seibert, Kraimer, & Crant, 2001), assuming responsibility for their career development and financial futures (Hall, 2002). The Internet offers a new parallel labor market, both flexible and global. Through it, individuals can create work for themselves, by identifying business partners, marketing themselves and developing supply chains for their products and services (Carraher, 2005). With diversified types of employment arrangements, outsourcing activities and various modes of work (part time, flexi-time), people and institutions have evolved a portfolio of legal and psychological contract involving more than one stakeholder (Alcovar et al., 2017).

Where once the focus was on the individual worker and his or her employer, many constituencies now weigh in on contemporary employment arrangements. The web of relationships individuals enter into on the course of conducting their careers include many social ties, as highlighted by Granovetter (1973; 1995), including friends and acquaintances who provide job-related information. Workers from families where previous generations were entrepreneurs are more likely to be engaged in entrepreneurial activities themselves than workers from families lacking such experiences (Rajan & Graham, 1991). Expectations of help and support are associated with friendships developed during military service, as in the founding of entrepreneurial firms in Israel (Honig, Lerner, & Raban, 2006), paralleling findings in research on university alumni networks (Burt, 2001). Similarity can be observed in industries like healthcare or high technology, once dominated by firms like Baxter or Fairchild (Higgins, 2005; Saxenian, 1994, 1996), where former employees came to rely on their alumni ties for personal job opportunities elsewhere as well as in their own hiring decisions. And in an even more established pattern, “the Big X (Big 8, Big 6, Big 4…)” public accounting and consulting firms still regularly place the outputs (i.e., former employees or “alumni”) of their up-or-out promotion system into client firms, leading to cascading relationships between firms and workers that can last a lifetime. Such opportunity-creating connections can give rise to a larger career system. This is not to say that the notion of a career ecosystem with sustained effects of embedded ties is new. Indeed in mid-century industrial jobs, it was well-recognized that “sons followed fathers” into the factories (Hoerr, 1988). Workers in so-called dangerous occupations (mining, fire-fighting, etc.) have long-tended to have parents who worked in the same field (Dryler, 1998; Schulenberg, Vondracek, & Crouter, 1984). We note that these opportunities based on family bonds benefited some, particularly white males, while constraining access to stable employment for minorities and women (Hurley, 1995). What is different now is the more dynamic ways in which these social and organizational ties are being formed and exploited from university-organizational partnerships and career networks undertaken for firm competitive advantage (e.g., Lam, 2007) to communities of workers at different career stages who support each other based on relational ties, information access and broader norms of reciprocity (e.g., Smith-Doerr & Powell (2010).

At the same time, individuals are living longer with implications for their working and post-working lives, family structures and aspirations for life style, growth and life quality. Pressures from complicated family arrangements, from dual-career couples, single working parents and employees with eldercare responsibilities (e.g. the sandwich generation, see Riley & Bowen, 2005) introduce personal needs difficult to meet in one-size fits all fashion. Longer lives and aspirations for well-being through that life lead to more people pursuing personal learning, development and growth both inside and outside of work (Hall, 2004; Sullivan, 2011). Longer lives and shorter employment suggest new thinking is required about retirement, and indeed whether it is even desirable (Baruch, Sayce, & Gregoriou, 2014). As a result, career-related behavior and decisions are increasingly shaped by the multiple actors and aspects of a multi-level career ecosystem (Baruch, 2015)

These changes challenge some traditional assumption regarding careers and career-related attitudes and behavior. As mentioned above, one is the notion of the key parties to the psychological contract in employment. Where once the other party to an individual’s employment exchange might have been construed as a firm or employer, more recent evidence in contexts where employment is less durable suggests that the immediate boss, team members, clients and customers or hiring agencies might be construed as central others (e.g., Alcover et al., 2016; Dawson, Karahanna, & Buchholtz, 2014). Another is the nature of the exchange, the obligations attributed to the parties involved and the degree these are expected to be reciprocal, more one-sided, or involving generalized reciprocity (Alcover et al., 2016). Still another is what career success looks like. Career research typically addresses either objective/extrinsic outcomes (Rosenbaum, 1979), or the career actor’s subjective career success (Wiese, Freund, & Baltes, 2002), less often both (Ng, Eby, Sorensen, & Feldman, 2005). But the meaning of success both objectively and subjectively can vary given the effects of context on aspirations. For the American working poor (Leana & Meuris, 2015) or underemployed post- crisis Greek university graduates (Simosi et al., 2016), for example, a set of jobs that bring economic stability may be as satisfying or more so than that of high-flyers on Wall Street.

**Psychological Contracts in the Context of Careers**

The psychological contract is a system of beliefs that takes the form of a cognitive schema or mental model. It has been defined as “individual beliefs, shaped by the organization, regarding terms of an exchange agreement between individuals and their organization” (Rousseau, 1995, p. 9, 27). Employment relationships are shaped formally by legal contracts detailing issues such as payment, time and place of attendance, and rules to follow. However, as implicit understandings about what parties to the employment arrangement give and receive, psychological contracts are shaped by, but more influential than, legal contracts where the day-to-day employment exchange is concerned. The psychological contract can develop over time into a hierarchical mental model comprising specific (lower-level) beliefs in obligations between the individual and another party, such as the obligation to pursue personal development in order to become more employable, and general (higher-order) beliefs or categories that help individuals make sense of their employment arrangement-- as perhaps a familial relationship, a calling or professional identity, a market transaction or a means to survive. The meanings individuals attribute to their psychological contract are shaped by their *a priori* beliefs and environmental cues (Rousseau, 1995), as well as goals that evolve over the course of employment (Rousseau, Hansen & Tomprou, 2018).

Over time, as psychological contracts guide work-related thoughts and actions, individuals tend to develop contractual beliefs with more abstract or higher-order cognitive content in line with their personal identity and values (O’Donohue & Nelson, 2006; Rousseau 2001). This incorporation of more abstract content is particularly likely when individuals behave in agentic ways (Seeck & Parzefall, (2008), where reliance on the contract generates a sense of progress toward important goals (Lord, Diefendorff, Schmidt, & Hall 2010; Trope & Liberman, 2010) and when employment is associated with such issues of identity as profession (Bunderson, 2001), relational embeddedness (Dutton, Roberts & Bednar, 2010) or religion (Heliot, Coyne, Gleib, Rousseau, & Rojon 2017). Consider an individual’s initial agreement to join a firm for three years in order to complete a set of projects and gain useful experience. If the worker comes to trust and respect the employer, the individual may expand beyond an instrumental view of the employment arrangement to view it as a relationship that fulfills important needs (Conway & Briner, 2002; Millward & Brewerton, 2002). In doing so, that worker develops a more elaborated psychological contract incorporating such abstract beliefs including as personal or professional identity, or higher-order values or ideologies (Bless, 2000; Fielder, 2000). Professional identity appears to be a basis of one facet in the psychological contract that entails the ideological obligations such professionals as nurses and physicians expect of their employers (Bunderson, 2001; O’Donoghue & Nelson, 2007). Religious identity also can be a basis for psychological contract beliefs as in the case of a palliative care nurse and devout Muslim, who develops an elaborated psychological contract incorporating both her religious beliefs and professional identity (Heliot et al., 2017; Stokes, Baker, & Lichy, 2016). Moreover, ideology, in terms of such value systems-related to self-reliance or humanism, can also influence the psychological contract, for example in terms of what is interpreted as breach (Rust et al, 2005).

The psychological contract is fundamental to how individual’s enact careers. It shapes perceptions, affect, and workplace behavior through how people respond to and interpret environmental cues (Kickul & Troth, 2002; Parzeval & Coyle-Shapiro, 2015). In career-related interactions, the obligations people believe exist between themselves and another affect what they pay attention to or disregard in enacting their roles as employees, managers and business owners (De Vos, De Stobbeleir & Meganck, 2009; Rousseau, 2001). Whether higher or lower cognitive levels of the psychological contract are activated is a function of whether there are discrepancies between environmental cues and the psychological contract, and the emotions or affect that discrepancy triggers (Rousseau, Hansen & Tomprou, 2018). Positive affect, a general sense of comfort and optimism, tends to prevail in the absence of discrepancies, motivating attention to higher-level aspects of the psychological contract. It leads individuals to fit their experiences into their existing contract (Bless, 2000). In contrast, negative affect, such as anxiety or distress, is prompted by discrepancies that trigger a lower-level focus on immediate cues wherein individuals monitor their environment in a more deliberative fashion (Bless, 2000). In general, such negative emotions amplify discrepancy detection (Schwarz & Clore, 2003) whereas positive emotion drives less unreflective reliance on the psychological contract (Rousseau et al., 2018).

Feedback mechanisms are processes for detecting a discrepancy between the psychological contract and an external employer-related cue (e.g., an employer’s promise, a delivered inducement; Rousseau, Hansen & Tomprou, 2018). Two feedback mechanisms operate in psychological contract processes, discrepancy and velocity feedback (Carver & Scheier, 1998, 2001; Chang, Johnson, & Lord, 2009; Rousseau et al., 2018), both of which are important to the experience of goal progress central to subjective career success (Wiese et al., 2002). The discrepancy feedback loop assesses progress made in fulfilling the psychological contract and leads individuals to modify their cognitions and behavior as needed to increase contract fulfillment. Perceptions of goal progress are shaped by the extent to which fulfillment by the employer is on-time or delayed and at levels of commensurate with the obligation attributed to the employer (Cassar & Briner, 2005; Cassar, Buttiegieg & Briner, 2013). The psychological contract functions as both a behavioral and evaluative standard. As a behavioral standard, the contract provides a basis for an employee to regulate his or her own behavior, helping both the employee and employer anticipate the contributions that person will make (Lee et al., 2011; Rousseau, 1995). As an evaluative standard, the contract acts as a basis to assess how well commitments have been kept or fulfilled (Rousseau, 1995; Simosi, 2013). Contract fulfillment occurs when there is little or no perceived discrepancy between psychological contract obligations and related external cues (Rousseau, 1995), that is, low obligation fulfillment, occurs when a negative discrepancy is perceived; and violation arises where breach generates strong negative affect in response to the conditions surrounding the breach (Tomprou et al., 2015). Rigotti (2009) suggests that thresholds exist prior to which small discrepancies are not recognized nor interpreted as breach. However, once discrepancies are found, individuals may be more likely to continue to perceive additional discrepancies increasing evaluations of breach or low contract fulfillment (Griep & Vantilborgh, 2018; Ng, Feldman & Lam, 2010). In effect, a prior breach becomes the context by which subsequent discrepancies are evaluated. These accumulated discrepancies have particularly adverse effects on employees (deJong, Rigotti & Mulder, 2017). In the case of career-related psychological contract terms, social cues from coworkers and others in similar career situations can be particularly important to the perception of discrepancies and their implications for subjective career success (Heslin, 2005; Ho & Levesque, 2005). In particular, social cues from coworkers have been found to be associated with greater perceived discrepancies with the psychological contract while information from supervisors is associated with lower discrepancies (e.g., Hermida & Luchman, 2013).

Velocity feedback operates parallel with discrepancy feedback. It monitors the speed of progress toward psychological contract fulfillment. However, the perceived speed at which a discrepancy decreases or increases can have more impact on an individual’s affect than the amount of the discrepancy (Carver & Scheier, 1998; 2001). Whether speed is perceived as fast, slow or in-between is a function of expectations, which are shaped by the individual’s experience and cues from the broader environment. Fast velocity creates optimism about the fulfillment of the psychological contracts, consistent with findings regarding the job satisfaction—motivation relationship (Chang et al., 2009; Hsee, Abelson, & Salovey, 1991). Velocity feedback leads to positive affect as relative speed increases and to negative affect as relative speed decreases (Johnson, Howe, & Chang, 2012). Velocity feedback impacts assessments of contract fulfillment and the formation of stable psychological contracts (Cassar et al., 2013), and potentially other contract-phase transitions (Rousseau, et al., 2018; Tomprou et al., 2016) Over the course of an individual’s career trajectory, velocity feedback is an indicator of the likelihood of goal realization and can affect whether the individual stays with an organization or continues to pursue a particular career path. At the same time, individuals have different standards or expectations regarding speed of fulfillment, and are influenced by the aspirations and expectations of their social network (Heslin, 2002), both of which can contribute to differential subjective career outcomes. Thus, two trainees promoted at the same time by the same company can hold different beliefs regarding their career progress to date based on their individual expectations.

More recently, psychological contract theory has recognized that contract obligations can be powerfully shaped by the goals individuals pursue and the feedback they receive on their goal progress (Carver & Scheier, 2001; Rousseau et al., 2018). Psychological contracts as beliefs regarding how individuals can achieve goals through their employment, can inform many aspects of career-related behavior, cognitions and emotional responses. Goals can change throughout the individual’s career and life span, along with expectations as to what constitutes contract fulfillment (Bal et al., 2008; Bal et al., 2010). Indeed progress toward goals is a key link between psychological contracts and career development. This goal progress can be thought from the perspectives of various parties to psychological contracts, including the employer’s strategic goals, the employee’s personal goals, and the goals pursued by other stakeholders including team members, mentors, and other actors in the career ecosystem (e.g. professional associations, government, etc.). Strategic goals, we note, inform the messages and signals well-managed firms send to their employees (Conway, et al., 2013). Clear strategic goals lead to unambiguous messages, increasingly the likelihood of constructive effects on employee psychological contracts. Unclear goals act in the opposite manner leading to ambiguous messages that increase the odds of adverse effects. Just as strategic goals guide an employer’s contract-related actions, an employee’s personal goals influence his or her contract-related responses, both positive and negative, depending on circumstances. An important but less frequently studied aspect of careers is the adjustment of individual career goals as a function of experience, and the effects of this adjustment on individual well-being and career-related behavior (cf. Creed & Gagliardi, 2015).

The efforts employee and employer make to articulate and promote their goals impact the psychological contract’s functionality for these parties. Other stakeholders can also be party to an individual’s psychological contract, and in turn can hold psychological contracts with an array of others (e.g., Alcovar et al., 2016; Bligh & Carsten, 2005; Claes, 2005). For example, managers may pursue personal goals in their supervision of employees, which in turn help those managers realize their own career opportunities. Consider that managers held accountable for developing a diverse group of employees may evolve an array of exchanges with those workers, the work group as a whole, and their own superiors as a means to creating a work environment that develops talent. Some degree of alignment or mutuality across these different exchanges may be needed to create the consistent support and clear signals regarding expectations important to developing a group of diverse employees (cf. Cox, 1995).

The goals career actors pursue shape their contracting with others over time by motivating attention to some environmental cues while downplaying others. Thus employees with goals for fast track advancement may pay greater attention to organizational and social cues regarding promotion opportunities than peers placing less emphasis on quick promotion. These groups may form different beliefs regarding the likely rate of promotion. Over time, the goals individuals hold may also change, promoting a shift in attention to a different set of cues. For example, a young software engineer may pay little attention to work family balance policies, until starting a family or taking on a demanding managerial position (Sullivan, Forret, Carraher, & Mainiero, 2009). Such changes in goal salience can also motivate a degree of “contract drift” (Rousseau, 1995) where new or different beliefs in employer and employer obligations evolve as a function of emergent needs not previously salient. Similarly changes in employer goals or the goals of other parties can prompt them to new interpretations of the exchange, which can include efforts on their part to alter the understandings individuals have their psychological contract. A firm that shifts from local recruiting to making global hires as its business expands may seek to motivate current employees to accept heretofore rare expatriate assignments, requiring both development of new incentives as well as changing employee expectations (duties, travel, cultural competencies) regarding the requirements for effective performance and advancement (Baruch, Altman, & Tung, 2016).

Failure to fulfill psychological contracts in employment has considerable adverse effect: Strong empirical evidence exists of lower employee well-being, negative attitudes towards the job and the organization, like decreases in job satisfaction, organizational commitment, in- and extra-role performance, and increase in withdrawal behavior (e.g., Bunderson, 2001; Coyle-Shapiro & Kessler, 2000; Kickul, Lester, & Finkl, 2002; Lester, Turnley, Bloodgood, & Bolino, 2002; Tekleab & Taylor, 2003; Turnley & Feldman, 2000; Zhao et al, 2007). The flipside is that fulfilled psychological contracts are associated with positive contributions to the employer, and maintenance of constructive employee-employer relations, although less attention has been given in research regarding how to promote such fulfillment.

Last we note that social influence affects the perceived fulfillment of the psychological contract (Ho & Levesque, 2005): individuals rely on friends and advice givers for information regarding organization-wide obligation fulfillment and others in comparable roles for evaluating the fullfillment of job-specific obligations. Importantly such findings suggest that individuals may derive distinct kinds of information regarding their psychological contract from different stakeholders.

We offer several implications for psychological contracts in the context of careers:

* Psychological contracts in employment serve as guides in order to realize personal and career-related goals
* Personal and career-related goals are effected by cues in the larger environment, including social information obtained through observation and communication.
* Personal and career goals help account for the psychological contracts parties enter into and the types of exchanges they form with other stakeholders related to careers and employment
* Personal and career-related goal realization and its speed or velocity affects the experience of psychological contract fulfillment or breach
* The evaluative standards individuals use to judge both goal realization and psychological contract fulfillment speed or velocity are influenced by personal experience and by social and environmental cues
* Failure to fulfill psychological contracts creates adverse outcomes for individuals, organizations, and potentially other stakeholders.
* Psychological contract fulfillment (or breach its flipside) affect the relationships with stakeholders individuals enter into in future.

**Contemporary Career Ecosystem**

Combining careers and psychological contract research, we now factor in the role of career ecosystems, a construct derived from eco-systems theory in the biological sciences (Iansiti & Levien, 2004; Müller, 2000). In management studies, ecosystem has been defined as ‘a system that contains a large number of loosely coupled (interconnected) actors who depend on each other to ensure the overall effectiveness of the system’ (Iansiti & Levien, 2004, p. 5). A business ecosystem is “an economic community supported by a foundation of interacting organizations and individuals – the organisms of the business world” (Moore, 1996, p. 9). In this context, a career ecosystem is an social system of employment and career-related development and opportunity that emerges from interdependencies among actors or entities, including individuals, networks, firms, and social institutions.

Career ecosystems result are initiated by bottom/up processes whereby actors who participate in or support labor markets. These processes in turn create career structures, building on what different actors bring to the system and receive in return (Baruch, 2013; 2015). Actors interact, creating or severing bonds in their pursuit of goals. These goals motivate actors to develop, establish, modify and re-evaluate the nature of their connections in the ecosystem via a set of legal and psychological contracts. The psychological contract is central in the formation and maintenance of the relationships between the actors, particularly from the perspective of individuals. Psychological contracts provide a blueprint for guiding the formation and evolution of relationships among career actors including employers (past, present and future) and other entities that contribute career support (e.g. educational organizations, community networks, employment agencies). Employers have been found to convey information regarding commitments they are best positioned to keep in order to avoid breaching employee psychological contracts (Guest & Conway, 2002). Both employees and employers hold multiple psychological contracts concurrently based on the resource exchanges in which they participate and the goals they pursue (Claes, 2005; Koh, Ang, & Straub, 2004; Marks, 2001). Research on diverse forms of ecosystems finds evidence of emergent or bottom/up processes that help to bring order to the experience of lower-level actors and provide access to resources (Faulkner & Anderson, 1987; Lichtenstein & Mendenhal, 2002). A set of factors contribute to such emergent processes including human capital, social ties, organizational relationship quality, etc. (Leana & Rousseau, 2000). Workers can participate in local, regional or broader networks whereby organizations and potential future employees maintain ties in order to share ideas, access talent with appropriate project competencies, and provide future employability based on reputation (Baruch, 2001b). In the transition from the old to new economy, such networks took the form of the Baxter Boys (Higgins, 2005), that is, managers who spun off start-ups in the pharmaceutic industry based on their career-building experiences in Baxter Travenol. Similar roles were played by the alums of Digital Equipment (Schein & Kampas, 2004) and Fairchild in the early computer industry (Brock & Lécuyer, 2010).

Top/down processes also operate in career ecosystems. Governments and other official institutions add regulation to the system (e.g. encouraging employability, education, development of employment laws) and support talent development (e.g. via national curricula, training programs and other investment in human assets). Regulation and laws can shape the structuring of career activity as in the case of protections for job property rights or the creation of procedurally just processes for terminations. Governmental supports can ease mobility by enabling healthcare and retirement insurance. Top/down processes can make it easier for individuals to obtain goal-congruent employment opportunities and the concommitant psychological contracts that access valued resources without the need for broad search or bargaining (e.g., job security in many parts of continental Europe; Rousseau & Schalk, 2000). At the same time, top/down processes can cascade investments in education, training, and entrepreneurial start-ups, which in turn create employment opportunity and economic growth. Societal interventions, nationally and regionally, can impact labor markets and alter actor expectations. Perhaps the biggest migration in history is the move of rural China labor to the cities (Hu, Xu, & Chen, 2011). A major contributor to this mass migration has been policies set by Chinese authorities. These policies lead to significant training needs at the national and organizational levels (Fu & Ren, 2010).

Not all activity in career ecosystems promotes sustainability. Predatory activity can occur, which destabilizes the career ecosystem by exploiting resources the system provides (e.g., via laws and regulation), capturing benefits while disproportionately depriving others. Such predation can take the form of investors who break up firms to free up value for themselves or political forces who draft laws to benefit one segment of society over another. Over-regulation can impede bottom/up flexibility just as under-regulation exposes individuals and families to risks that undermine their ability to respond effectively in the face of such disruptions as unemployment or income insecurity. The balance between top/down and bottom/up activity is likely to be a central issue in career ecosystems.

The advantage of using the ecosystem framework to understand careers is that it identifies the distinct dynamics that can operate across geographies and societal levels. Just as the biosystems of planet earth are built of many sub-systems; the global labor market is a manifestation of the largest career ecosystem, comprising many regional and local sub-systems. In this dynamic system, people can move across institutions, sectors and national borders pushed and pulled by joblessness and opportunity (Arthur & Rousseau, 1996; Arthur, 2014; Baruch et al., 2016), and the increasingly low cost of travel, ultimately shaping the movement of populations (Amior & Manning, 2018).

Sustainability is a major dimension along which career ecosystems vary. They differ in their capacity to maintain or even thrive in the face of uncertainty, disruptive events and change. This capacity to sustain is a function of the web of supports ecosystems provide actors in order to respond to environmental demands and the actors' capacity to adapt and even thrive when faced with uncertainty. As in the case of any ecosystem, career ecosystems vary in their prevailing sustainability, resilience, adaptation and struggle to survive. The 'survival of the fittest' applies to the career ecosystem, when those at a competitive disadvantage access fewer resources and opportunities as individuals (Hall, 2004), organizations or nations (Sölvell, 2015). A person can be perpetually jobless or underemployed (Maggiori, Johnston, Krings, Massoudi, & Rossier, 2013); organizations can go bankrupt or 'die' (Sutton, 1987); and national economies can decline. In some settings, individuals or organizations in transition through temporary unemployment or economic downturns may at times be less able to participate in the ecosystem, relying on social benefits or government bailouts to tied them over. At the same time in a well-functioning ecosystem, its entities, individuals and organizations, for example, have their place in it sustained through interconnections.

We now turn to the contrasting career phenomena associated with different career ecosystems, particularly in terms of how they operate in the context of new careers. We propose a career ecosystem model comprising three types (Table 1), based on their degree of resilience and adaptability in the face of disruption (Taleb, 2012). Career experiences such as notions of subjective and objective success or the paths or trajectories individuals follow are expected to vary considerably as a function of the larger ecosystem along with the behaviors and responses individual career actors and other stakeholders make.

------------------Insert Table 1 About Here-----------

**Fragile** ecosystems respond to external shocks in ways that can undermine connections among actors, including workers, firms and institutions, challenging their well-being and indeed survival. An illustration of a fragile ecosystem is post-financial crisis employment in Greece. College graduates typically are employed in either government or in closely held (typically small) businesses. Cutbacks have reduced governmental employment and small businesses struggle to employ their own family members let alone outsiders and debt has led to cuts in social services (Simosi et al., 2016). New career entrants find few entry level jobs available, and often seek to perform volunteer work in the hopes of being hired in their chosen field, while working at a survival job like waiting tables or childcare. Fragile ecosystems are characterized by sparse networks, perhaps ties to a narrow sector of social life (e.g. church or business, friends or family, but not several at the same time). Limited access to start-up capital means that self-employment is often not an option, although individuals may turn to the black market or off-the-books activities to survive (e.g., Kim & Rousseau, 2018). The psychological contracts of employees in fragile ecosystems tend to be relatively narrow and limited to arm's length economic arrangements as organizations cope with a depressed or sluggish economy and workers strive to pay bills with neither readily able to plan for the future. Such contracts reflect a narrow range of resources exchanged and few future commitments. Such exchanges mean little opportunity for training, development or advancement as an uncertain future undermines such investment. Young people continue to be dependent on families for support well into their 30s (Somosi et al., 2018). In this fragile ecosystem, there are few winners and many workers with limited opportunities to start or maintain a career. In such ecosystems, career goals tend to be unstable and prone to downward adjustment as new entrants confront the limitations experienced by their more senior colleagues. High aspirations often give way to more attainable goals, altering the kinds of psychological contracts workers form with organizations and other stakeholders.

A similar pattern characterizes the rustbelt of the United States where certain localities (the Midwest) long-tied to heavy industry have not successfully transitioned to the new economy. Compare Pittsburgh’s loss of its steel industry and regeneration as a higher-education and medical hub (“eds and meds”) to Detroit’s more sustained decline following the erosion of its automobile industry. A major factor in the difference is the interconnection between universities and the industries (Florida, 2002; 2010). Quality relationships between institutions in the ecosystem can foster greater resilience while the absence of such relationships may impede talent development, flows and retention.

In some fragile ecosystems, a few individuals may disproportionately benefit at the expense of many. In some cases they may be a function of unstable economies or totalitarian regimes where corruption or political ties dictate economic benefits as in the case of North Korea (Kim & Rousseau, 2018). It can also be the case in some segments of the economy where some members are far better positioned to garner a disproportionate share of resources, including pay, benefits and job opportunities. Frank and Cook (2010) describe “Winner Take All Systems” where disproportionate rewards go to star employees or high status workers relative to otherwise effective or even slightly less than star actors. Such allocation systems, can be inherently unstable by failing to provide sufficient resources throughout the system to foster good performance, quality of life and adaptation to environmental change (cf Groysberg, Polzer, & Elfenbein, 2011). In all career ecosystems, reputation or standing is valuable currency but in some fragile systems reputational benefits are skewed to high status outliers, jeopardizing the access to employment and other valued resources by the broader population, making the ecosystem more fragile in the face of external shocks. Another consequence for those of lower status in fragile ecosystems is slow speed or delay in realizing anticipated benefits and returns from employment. Advancement may be lagged or limited, an experience that can be at odds with expectations new entrants hold and the recognition and status needs of more veteran workers. Diminished or blocked advancement can have cumulative effects where managers whose own career goals are frustrated may be disinclined to fulfill the psychological contracts of their subordinates (Hallier, 1998).

In fragile ecosystems, the need for self-reliance in the face of limited employment opportunity means that for many a dominant career activity is to cobble together forms of work. External relationships are critically important to opportunity but the insecurity and instability of the situation make short-term, economically focused transactional psychological contracts a common form of employment arrangement (Simosi et al., 2016). Transactional contracts are particularly likely when workers perform jobs outside their skill sets as in the case of school teachers waiting tables or journalists doing copyediting. Typically, workers tend to engage in several employment arrangements simultaneously as work may be part-time, temporary or otherwise unstable. Workers may also undertake unpaid work in order to build skills for greater opportunity later. Fragile ecosystems often entail limited savings or access to other financial cushions. Thus individuals and their families face considerable economic insecurity and often experience frustration in pursuit of valued personal and career goals (e.g., Rosenzweig & Wolpin, 1993, Warr & Jackson, 1985). Resulting stress in both work and personal life can leave individuals depleted, limiting their capacity to respond to stress either reactively or proactively. Insecurity, particularly income insecurity, imposes a cognitive burden with serious implications for work-related behavior including traffic accidents among truck drivers, and long-term health and well-being (Leana & Meuris, 2015). Such cognitive burdens are likely to undermine building expanded career networks in order to increase access to career-related information or opportunity. For example, in a follow-up study of post-crisis Greek professional women, career-related networks appeared to shrink over time as the aspirations diminished and opportunities continued to be difficult to obtain (Simosi et al., 2018). Fragile ecosystems lead workers to be vulnerable to breach of their psychological contracts as employers themselves respond to environmental uncertainty. At the same time, prolonged exposure to work arrangements at odds with personal goals can deplete the individual’s capacity to perform or adapt.

Sociologists describe the sustained and vicious effects of precarity on worker well being and cognitive bandwith, where workers continue to fear losing their jobs, due to absence of alternative employment and reduced opportunities to obtain or maintain critical skills (Kalleberg, 2009, 2011). Precarity can be a determinant or consequence of income uncertainty, job insecurity including unsafe work and the absence of democratic representation (Kalleberg, 2009; Standing, 1999). In the context of a knowledge economy, precarity can have significant effects on the capabilities of individuals to participate in the labor force (e.g., Krueger, 2017) and exacerbate the problems of working long hours under high performance pressure. Importantly, for individual workers, a history of low career mobility and prolonged periods of unemployment can undermine the exercise of proactivity and efforts to enhance their employability (Kovalenko & Mortelmans, 2016).

One consequence of fragility is increased reliance on social services for those whose personal resources are insufficient to support reliance on self alone. However, economic liberalization and global disruptions have fueled cutbacks in the social services once provided by unions and government in order to support workers through employment transitions (Lee & Kofman, 2012; McCloskey, 2016). The resulting gaps in support can exacerbate fragility for less advantaged workers, where stressors can have long-term adverse effects on future employment and quality of life (e.g., Bartley, 1994). In contrast, supports such as jobs programs promote resilience and recovery (Vinokur, Schul, Vuori, & Price, 2000), a feature more characteristic of robust and antifragile ecosystems.

**Robust** ecosystems characterize career settings comprised of firms of various sizes, typically recruiting workers from training and educational institutions with offers of moderate stability and participation in internal labor markets. Such systems are often large scale, with considerable wealth and resources that help the ecosystem weather external shocks as is the case in France and Germany. Employment networks in robust ecosystems are often based on working for the same employer, with individuals having social ties embedded in their current and past organizations. Although the new career model operates in robust ecosystems, it often means that job security is replaced by employment with a series of employers over time. Such circumstances foster balanced psychological contracts of mutual adjustment and support as workers adjust to changing employer demands and their own evolving personal needs. In robust economies however, core and long standing employees may manifest relational contracts based on open-ended trust and reciprocity, although these may differ with the psychological contracts of others in the same firm (cf Dabos & Rousseau, 2003) or across different employers in robust economies as a function of such factors as their performance, education and quality of relations with their manager (cf Sels, Janssens & Van Den Brande, 2004). At issue here is the nature of the resources exchanged in employment, which affect and are affected by the nature of the psychological contracts developed. Exemplified by the employment conditions prevailing in the industrial economies of Germany and France, robust ecosystems are often buttressed by regulation in the form of employment protections and welfare benefits as well as trade unions (Dunlap, 1993). Working hour, cost of leaving allowance, choice of setting work condition and income can be decided individually or via collective bargaining, with the legal system offers conditions and regulates the way negotiation may be held. Such systems tend to characterize the industrialized developed world as well as the regulated environments of Denmark and Sweden, with their diversity of firms and institutions for training and retraining. In robust ecosystems, career goals tend to be closely tied to life stage with a downshifting on approaching retirement, often realized through benefits obtained at an employer (Lazear, 1981; Ritter &Taylor, 2000).

Despite the role of organizational careers possible in robust ecosystems, what once were strong commitments to the employer (Jacoby, 2000) may be less reliable, if employment in a single firm is no longer the central means of attaining long-term goals. The historic reliance on a relationship with a single employer, characteristic of the first-tier labor market (Lazear, 1980; Ritter & Taylor, 2000), was associated with psychological contracts on the part of workers that served as both as a *means* to pursue personal goals as well as a *goal in itself*. When employers provided the means to attain multiple valued, long-term goals, workers could convert commitment to their personal goals into a broader commitment or bond with their employer, which provided a means to achieve goals (Fishbach, Shah, & Kruglanski, 2004). The narrowing of the array of goals met by one’s employer reduces the value of employment with any single firm.

With the lower value attached to careers within a single firm, self-directed careers are more common among workers in robust ecosystems, specifically for those with the skills and personal resources allowing them to pursue their goals beyond employment with one organization. Where once cues from within the organization were central to their career decisions, individuals seek out more market-related information in order to make sense of present and future employment opportunities. Environmental scanning for external opportunities occurs concomitant with shifting beliefs regarding the acceptability and goal consistency of moving between employers. Note, this is not to say that workers prefer to change jobs. Rather, the perceived value of one’s current employment arrangement may become lower as individuals absorb more of the risk once handled by their employers. Evidence indicates that environmental scanning is particularly effective when individuals are motivated to take advantage of the opportunities identified (Anderson, 2008) although it can raise conflicting issues regarding personal and organizational goals (Grabher & Ibert, 2005).

**Antifragile ecosystems** characterize niches where broadly decentralized economic activity allows the ecosystem to become resilient in the face of external stressors, forming adaptive combinations of alliances and networks. These ecosystems are often regional in nature, where knowledge workers and skilled technicians can move within and between firms, supported by universities that give rise to the agglomeration of local economic activity. Across phases of their careers, workers may be employees, contractors and entrepreneurs in myriad sectors including high tech manufacturing or information security. The technology sector of Argentina is a case in point, where coping with stresses from a traditionally unstable economy has led to nimble business and labor strategies (Mander, 2016). Where once employment networks were based on a shared history with the same employer, networks in antifragile career ecosystems often constitute active communities of industry participants seeking to build entrepreneurial opportunity as well as access new talent. Such is the case of high technology clusters from Silicon Valley (Bresnahan & Gambardella, 2004; Saxenian, 1996) to China and Argentina (Mander, 2016; Rosenberg, 2002). In these settings the psychological contracts among parties can involve information exchange regarding opportunities and business facts while placing some actions off-limits, such as hiring away talent. The capacity to bargain is perhaps a characteristic of both robust and antifragile career ecosystems, but greater in the latter, allowing adaptation and access to resources that can benefit the individual outside and beyond his or her working life (Kossek & Lautsch, 2007). Career goals tend to be dynamic as a function of personal values, social and environmental cues and life stage.

Antifragile ecosystems are characterized by greater reliance on external network ties for career opportunity, expanding career-related exchanges of information and support in order to realize personal and professional goals. The alternative to within-organizational ties are careers largely conducted external to any given organization. Early in research on boundaryless careers, scholars recognized the effect of larger social networks, such as those associated with alumni from large high tech employees (Saxenian, 1996), who found subsequent employment through connections with each other. Consistent with Granovetter’s (1973, 1995) work on the role of social networks in finding employment with a firm, research by Saxenian and others suggests that careers outside of internal labor markets are accessed through social networks (Raider & Burt, 1996). Such networks serve both to disseminate employment-related information and to generate future opportunities. New ties can take many forms, for example, pursuing education in universities with strong alumni bases, (Burt, 2001; Hall, 2011) advanced degrees from visible programs in competitive areas (Burt, Hogarth & Michaud, 2000; Donald, Baruch & Ashleigh, 2017), or connections with important players in an industry (Hadani, Coombes, Das, & Jalajas, 2012; Hoye, Hooft, & Lievens, 2009). Social isolates and those less proactive or agentic are particularly disadvantaged in these ecosystems whose members engage in broad and diverse ties. Antifragile ecosystems generate new ties fairly readily in response to uncertainty, as in the case of entrepreneurs who respond to an economic disruption with a search for new opportunities.

**Ecosystem Implications** **for Careers and Psychological Contracts**

Career ecosystems affect how resources flow to people and impact their pursuit of needs and opportunities. In turn, salient needs and opportunities shape the aspirations individuals develop for their careers and personal lives based on goals believed to be attainable (Campion & Lord, 1982). The aspirations influencing goal formation are also affected by an individual’s self-efficacy (Bandura, 1981; Zimmerman, Bandura, & Martinez-Pons, 1992), prior experience of success or failure (Campion & Lord, 1982) and broader environmental cues (Shunk, 1984) in particular the vicariously observed outcomes of others. It is in this context that we describe ecosystem phenomena with implications for careers and psychological contracts.

**Multi-party psychological contracts in employment**

As described, organization-based psychological contracts have undergone considerable disruption in the changing context of careers. One consequence has been the expansion of the array of stakeholders individuals build ties to concurrently and over time in order to secure employment and advance careers (Alcover et al., 2016). This stakeholder expansion shapes the broader career ecosystem as parties derive benefits (information, support and reputation) from such exchanges, forming attachments and obligations. Individual actors rely on each other and their larger social networks for employment opportunities including referrals and actual work, for information regarding future opportunities and cues regarding their standing relative to others in the labor market. An array of stakeholders influence the quality and efficacy of psychological contracts in employment and the individual and collective career experience. These stakeholders can be distributed throughout the organization (e.g., managers, mentors, team members) and beyond (e.g., industry sponsors, academic supporters, clients). Ties among actors are profoundly linked to fundamental issues in the psychological contracts that arise over the course of careers, particularly with respect to interdependencies, the diversity of needs (personal and career-related) to be met, the broad content (job, skill information, personal support, political influence, etc.) to be exchanged in response to stakeholder demands (Marks, 2001).

The effect of multiple stakeholders has been referred to as multiple-foci experiences that help shape the psychological contract (Alcover, Rico, Turnley, & Bolino, 2017; Marks, 2001). These experiences are associated with shifts in the nature of reciprocity. Reciprocity has historically played a significant role in all aspects of psychological contracts associated with careers (cf. Coyle-Shapiro & Kessler, 2002). In the context of employee-employer exchanges for example, Coyle-Shapiro and Kessler find a positive relationships among perceived employer obligations, their fulfilment and the employee’s reciprocal obligations and their fulfilment, confirming the existence of the norm of reciprocity between employees and employer representatives (managers). Such reciprocity is expected in the broader sphere of career-related interactions, as workers, mentors, colleagues and team members, present and former, seek to attain their own goals while helping each other. At the same time, careers also can create differentiated interests among actors in the ecosystem as workers hold different positions, access different resources and at times compete with others for opportunities (e.g., Rosenbaum, 1979). In such context, reciprocity is not expected to be symmetrical though it is likely to be generalized such that individuals help others who may not be able to reciprocate themselves in order to affirm their power and reputation (Alcover et al., 2016; Burt, 2001; Podolny & Baron, 1997).

In the context of psychological contracts, individuals are aided in dealing with complex arrangements by the development of higher-order beliefs (Rousseau, 2001) shaping how they think about relations with others. We anticipate that relational beliefs will be introjected into ecosystem-based work arrangements that continue over time. In the context of multi-foci psychological contracts, identity development can facilitate participation in complex exchanges. Identity development serves to enhance resources by helping create and sustain ties with career-relevant others. For example, Dutton et al. (2010) argued that the more an individual’s identity structure contains complex facets (such as a religious and occupational identity), the more that individual has the capacity to form positive relationships with diverse others at work. This incorporation of more abstract content into the contract is particularly likely when reliance on the contract generates a sense of well-being and progress towards goal attainment (Lord et al., 2010; Trope & Liberman, 2010). A positive relationship between work-related identities promotes personal well-being and enhances the quality of interactions with others when identities are experienced as compatible. Moreover, individuals are likely to develop strong identities with collectives proximal to their everyday work or with those who provide them with resources they particularly value (e.g., mentors or university ties).

The fulfilment or breach of the psychological contract with any of these stakeholders is expected to influence the resources directed to the relationship. As Dutton and colleagues (2010) point out, social resources matter to workers personally and professionally. Diverse and high-quality relationships are valuable in terms of promoting physical and psychological well-being (e.g., Heaphy & Dutton, 2008), better coordination and performance in interdependent work (Gittell, 2003), learning (Tsui & Ashford, 1994; Lave & Wenger, 1991), and career opportunity (Burt, 2001). A key point Dutton and colleagues make is “The more an individual’s work identity structure contains complex yet compatible facets, the more that individual will form relationships with diverse groups of people.” They point out that the extent to which individuals are motivated to fit external standards they are likely to seek relationships with additional others. Good relationships also are protective if breach occurs in multi-stakeholder exchanges. Zagenczyk and colleagues (2011) observe that workers responses to employer breach may be mitigated by supportive managers and mentors.

Multiple stakeholders are, however, not an unmixed blessing. When stakeholders are in the immediate environment and numerous, individuals feel overloaded (Alcover et al., 2016). Requests may be difficult to ignore, whether clear or ambiguous, because of the future role that agent might possibly play in one’s career. Consistent with research on managers within traditional organizations (Hill, 1992), new entrants to a role with multiple stakeholders can have a difficult time figuring out whose expectations to respond to and how to live up to what might be an underlying network of implicit agreements with multiple agents (Alcover et al., 2016). Both the nature of the psychological contracts that arise with different parties and the extent to which they may be fulfilled can depend on both the power and status of the individual worker and the degree of influence and control their stakeholders exert (Alcover et al., 2016). These multi-foci arrangements highlight issues of status and power, formerly absent in psychological contract research. For example, interdependence with multiple stakeholders can make issues of gender and affinity groups and status and access to power more salient in the exchange arrangements that evolve. Multi-foci exchanges, characteristic of network organizations or a university-research environment, can mean that personnel decisions involve multiple parties and make conditions associated with fulfilling psychological contract obligations more complex (Alcover et al., 2016). As described above, multiple stakeholders in psychological contracting can lead to asymmetry in reciprocity. Absence of a strict norm of reciprocity in more distributed psychological contracts can mean that individuals keep contributing regardless of whether their own expected benefits are met—one reason why antifragile ecosystems, which support generalized reciprocity through broadly shared benefits, can be advantageous.

**Inter-generational or legacy effects**

The goals workers pursue and the psychological contracts they form can arise from what might be termed “legacy effects” on aspirations, based on the experiences of past generations and experiences with previous employers. Such goal dynamics are evident in contemporary research on the general public’s optimism (or the lack of thereof). A case in point in the United State is the state of “the American Dream.” Summarizing findings from large scale surveys, Graham and Pinto (2017) report that over the past 50 years, income gaps between rich and poor have increased in the US while differences between races have declined. Unemployment not surprisingly has a negative effect on life satisfaction and increases feelings of worry, adverse effects other studies have found not differentiated by demographics or human capital (McKee-Ryan, Song, Wanberg, & Kinicki, 2005). Poorer people are less optimistic than wealthier people, with the effects exacerbated for whites. Although African Americans have lower health outcomes than whites, they have higher mental health indicators than their white counterparts. Indeed the authors suggest that the economic setbacks whites experience, particularly among white males, have been particularly challenging, not because these economic outcomes were worse than other groups, but “they expected better.” Such findings echo recent observations of the effects of the opioid epidemic on the anticipated workforce drop out by “prime age males" (25 and 54) by 2025 (Katz, 2017). Rural whites in the U.S. faced with both greater social isolation and loss of manufacturing jobs were even more pessimistic about the future than urban whites of the same age.

Legacy affects and prior experiences can trigger a distinct approach to pursuing goals and the needs on which individuals focus. Trope and Liberman (2010) use the concept of regulatory focus to describe two distinct systems that cater to different needs in pursuing goals. Promotion processes address needs for nurturance and striving and regulate such developmental behaviors innovation and providing support. Prevention processes address security or self-defensive needs and regulate vigilance (Lanaj, Chang, & Johnson, 2012). Each system activates a different valence of affect: promotion leads to positive affect and prevention to negative affect (Trope & Liberman, 2010). A promotion/prevention perspective can account for shifts in cognitive processes observed in psychological contracting. Career progress in the contemporary economy depends on proactivity on the part of actors and some degree of responsiveness to others, an activity level impaired by precarity and its prevention focus. However, in the context of antifragile ecosystems, disruptions can motivate individuals to become more proactivity, based on opportunities available and prevailing behavioral norms of workers in more dynamic antifragile environments. In that context, disruptions actually build capability by the innovation characteristic of antifragile settings. Moreover, a history of psychological contract fulfillment may promote tolerance for negative discrepancy lacking in settings with a history of violation. Further, we expect that ecosystem fragility is likely to be associated with greater psychological contract breach and violation, while antifragility is associated with higher contract fulfillment, by both minimizing discrepancies with the psychological contract and timely delivery on its terms.

**Organization HR strategy and ecosystem differentiation**

A variety of sometimes competing, sometimes complimentary forces operate in multi-stakeholder systems as a function of employer HR practices. Employing organizations and their HR strategies contribute to the standing workers have in relation to others and provide a context for top/down and bottom/up influences on career experiences during employment.

As a top/down influence, consider the nature of the organization’s HR strategy, that is, the ways in which it positions itself competitively its labor practices. A host of HR strategies have been identified from high involvement strategies utilizing intrinsic motivation and autonomy support practices (Boxall & Macky, 2009), high investment strategies promoting decent work and safe employment conditions along with fair pay (Lepak, Taylor, Tekleab, Marrone, & Cohen, 2007), to high utilization strategies that demand long hours and greater efficiency (Hornung, Hoge, Glaser, & Weigl, 2017). One consequence of diverse HR strategies is differentiation in the quality of employment workers enjoy.

Lepak and Snell (2002) argue that these differences in quality of employment reflect human capital variations that give rise to different HR management practices. They focus on two characteristics of human capital, 1) its strategic value or potential to improve organizational outcomes and capitalize on market opportunities and 2) its uniqueness or the degree to which it is (not) readily available on the labor market or easily duplicated by other firms (i.e., a characteristic economists refer to as asset specificity; Williamson, 1985). Firms may blur the HR practices they apply across different modes of employment: Some firms pursue commitment or productivity-focused HR strategies with both groups of workers offering strategic value, for example. Nonetheless, the quality of the employment relationship and level of risk to which workers are exposed vary substantially. Indeed employee groups have different levels of satisfaction with HR practices in their organizations, possibly as a function of positional differences (as core and valued or peripheral and less valued human capital), which lead to unequal resources and opportunities enjoyed and feelings of relative (dis)advantage (Kinnie, Hutchinson, Purcell, Rayton, & Swart, 2005, Marescaux, De Winne, & Sels, 2013). We infer that career ecosystems are to some extent impacted by the particular HR strategies employing organizations use. In particular, such strategies can indeed locate individual workers in different ecosystems as a function of the connections and capabilities they support. In particular, peripheral workers with low skills (in contrast to high skilled peripheral workers such as independent consultants or auditors) tend to locate in more fragile ecosystems.

As a bottom/up influence on employment quality, consider the kinds idiosyncratic arrangements employees seek out and are sometimes granted. A diverse array of idiosyncratic deals (i-deals; Rousseau, 2005; Rousseau, Ho, & Greenberg, 2006) are possible from developmental opportunities to workload reduction, increases in pay and benefits to preferred tasks and colleagues. Yet type of i-deal matters. I-deals can be thought of as falling into two categories, promotion-oriented deals addressing personal growth and long-term goals and prevention-oriented deals focused on reducing stressful demands or aiding in supporting an individual’s health or family roles (e.g., Tims & Bakker, 2010). From a careers perspective, a central issue with i-deals is the long-term career benefits associated with promoting deals and the potential for reduced future prospects for those with prevention deals (e.g. Hornung, Rousseau, & Glaser, 2008). Indeed for workers in more fragile ecosystems, promotion-oriented i-deals can be especially valuable but rare. The value placed on promotion-oriented deals means that the psychological contracts they give rise to tend to entail greater willingness on the part of the employee to commit to the employer (Rousseau. 2005).

A major implication of the combined effects of HR strategy and idiosyncratic deals employees bargain for themselves is the possibility of highly differentiated employment arrangements within the firm, creating status differences between workers predicated on differential access to present resources and future opportunities. Such practices are evident in gaps in salary between top earner(s) and lowest paid employees and in differential levels of job security and investment in employee skill building and well-being. Such differentiation can make it difficult for individuals to set realistic career goals that are also motivating and attractive. Psychological contracts in such setting need to be based on explicit communication targeted to employees with particular modes of employment. Calibrating expectations in the psychological contract is akin to providing individuals with a realistic career preview, similar to the concept of realistic job preview (Wanous, 1992). When a realistic, viable psychological contract is established and maintained, specific goals are more likely to be realized.

  We expect that workers embedded in more robust or antifragile ecosystems are in a better position to attempt to bargain for i-deals. They generate bottom/up pressures on managers and HR to adjust their practices and interpret formal rules and procedures in ways aligned with their individual goals and interests (Hornung, Glaser, & Rousseau, 2008; Rousseau, 2005). As such both top/down and bottom/up forces in organizations have implications for psychological contracts and the career progress individuals attain.

**Societal effects on ecosystems**

The broader society and its institutions contribute to both to individual career experiences and larger career ecosystem. By virtue of the ground rules society sets for the employment exchange, its institutions have considerable effect on both the legal and psychological contract between individuals and their employers or with other stakeholders (Dunlap, 1993; Rousseau & Schalk, 2000). At the global as well as within-country level, societies and their institutions intervene in labor market-related activities. These interventions are motivated by ideological, political, economic and legal factors. A common motivation at the societal level is to advance its aggregate human capital, aiming to improve competitiveness, increase power and expand influence. In some nations, government policy aims to generate positive work relations, to improve the well-being in the country (Diener, 2006; Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004). Societal effects occur largely through the resource flows their institutions make possible. A major factor in shaping the degree of resilience characteristic of career ecosystems are the supports and resource flows society provides.

One important contribution to human capital are educational systems that support skill development and can take action to protect the access of certain members of society, like the scheduled castes in India or affirmation action for disadvantaged minorities in the United States. Societal investments in the educational system can influence the level of education attained by the population and presence of critical skills in the future workforce via supports for apprenticeships, vocational colleges and to aid non-traditional students to participate in training (e.g., female students in STEM fields). Recent increases in investment in sport have contributed to unpresented level of success for some nations in the Olympic games (Forrest, McHale, Sanz, & Tena, 2015; Weed et al., 2015). These resource flows can reflect ideology, politics and economic motives such as technological advances or reduction in societal inequality.

To reach these aims, societies intervene in ways that influence the aspirations and action of organizations, communities and individuals. Some examples at the national level are the generation of healthy level of employment, aiming to void 'brain-drain' (Beine, Docquier, & Rapoport, 2001), and if possible, encourage positive 'talent flow' (Carr, Inkson, & Thorn, 2005). Interventions that target funds to organizations or industrial communities include venture capital supports for start-ups and other risky ventures (Lee & Peterson, 2000), tax breaks that promote competitiveness via innovation (Furman, Porter, & Stern, 2002) and university-organization partnerships to create communities of organizations and scholars for incubating new ideas (Cyert & Goodman, 1997; George, Zahra, & Wood, 2002). The intent of interventions is to alter available opportunities and perceived likelihood of goal realization for actors in the career ecosystem.

**Implications for Future Research**

Our analysis offers insights into contemporary careers, the psychological contracts of career actors, and the career ecosystems in which they are embedded. It identifies important issues for future research and fundamental concerns for policy and practice.

**Career Research Agenda**

The psychological contract perspective on careers calls attention to the key role of goals and those factors influencing the goals and aspirations career actors pursue. Whether career goals are met or frustrated depends to a certain extent on the relationships in which career actors participate and the supports available for participating in these relationships. Evidence suggests that the global migration of market risks from firms to employees affects not only the ultimate well-being of workers and their families, and the societal institutions that support them, but its proximal effects on the cognitive demands workers experience and on the cognitive bandwidth workers have available to perform their jobs and to manage their own careers. Research is needed on the factors that foster psychological contracts that meet the goals of individuals and their respective managers, team members and other stakeholders under conditions of uncertainty and change. Such studies would benefit from choosing contrasting career ecosystems (e.g., regions made more antifragile through diverse networks and industry/university collaboration vs those lacking such arrangements) and focusing on diverse kinds of employment modes in each. At the same time we need to better understand how precarity might affect the broad array of career, work and personal behaviors that influence well-being and potential to undermine a career actor’s ability to form the stakeholder relationships than can provide career opportunity. Further, effective interventions to offset precarity are critical as its prevalence appears unlikely to diminish.

Multi-level factors operate at the intersection of psychological contracts and careers, through the roles played by organizations, networks, institutions, and government. Some of these multiple levels operate via top/down effects reflecting societal and organizational changes (including de-regulation and investment). Some operate as within-group comparative effects as in the case of relative advantage or deprivation (e.g., Feldman & Turnley, 2004) individuals experience as a function of legacy effects and their social network context. Others operate via bottom/up psychological and social processes including the negotiation of idiosyncratic deals (Rousseau, 2005; Hornung, Rousseau, & Glaser, 2008) and proactive individual job crafting (Wrzesniewski & Dutton, 2001) that can help individuals acquire the skills needed for both career self-management and entrepreneurship. In this web of effects, with less capacity to rely on the current employer for future opportunities, workers increasingly focus on the external job market and the ties that provide them connections to it. Important ties increasingly come from the institutions such as universities and professional and industry associations that help individuals acquire marketable and valued skills that employers prefer to buy rather than develop.

Much has been written on the implications of breach in the psychological contract and its consequences (Robinson & Brown, 2004). Less attention has been paid to how to establish a sustainable and fulfilled psychological contract. Sustainable contracts are those that serve the goals of their parties over time. In the context of careers, fulfilled psychological contracts pertain to goal attainment while the capacity to attain goals over time reflects a degree of adaptability and good faith on the part of contract parties. It is a challenge to fulfill and sustain psychological contracts in contemporary career ecosystems, particularly where multiple stakeholders are concerned. We see benefit in expanding the attention in psychological contract research to a broader array of multiple stakeholders, all those serving as agents or actors to whom individual workers feel obligated and derive resources, including customers, mentors, network ties, and universities. Perhaps among the many stakeholders affecting psychological contract fulfillment, the immediate managers may be the employment exchange’s most critical agents (Fu et al, in press).

How differentiation is managed by firms is itself an important topic for future research on psychological contracts and careers. Differentiated psychological contracts make coordination and the management of interdependence across workers more difficult as individuals are more likely to have divergent interests, having neither common goals nor a shared future with the organization. Such coordination difficulties are exacerbated by the heightened sense of relative disadvantage or deprivation some workers experience by virtue of having less valuable and more unstable psychological contracts than other workers classified as core (Kalleberg, 2003). In consequence, managing organizations with differentiated workforces is a critical and largely unstudied task.

Talent management entails systematic approaches to development, advancement and retention that are more difficult to apply when workers are highly differentiated and where some may give less credence to the employer as a function of the perceived disadvantages associated with their (lower) relative standing in the organization. At the same time, talent management is recognized to have an increasingly customized aspect to it as job crafting and idiosyncratic deals come to be recognized as an effective means of targeting rewards and resources to individuals in a fashion that makes their employment attractive and valuable (Rousseau, 2005; Wresniewski & Dutton, 2001). However, the efficacy of such customized practices is to some extent dependent on their capacity to motivate recipients without creating a sense of injustice among coworkers (Rousseau, 2005).

Given the uncertainties workers face with regard to their career stability, let alone career progress, it becomes important to conduct research into ways to improve career experiences of contemporary workers, especially those disadvantaged in the contemporary economy. Identifying practices that create and sustain hope can help people see themselves as making progress in their lives (Dutton et al., 2010).

**Policy Research**

Policy research is needed on the host of second and third order consequences of the risk migration from firms to individuals. Families, communities, and ultimately the larger society face new demands, costs, and shortfalls. The absence of policies buffering people from disruption contributes to the declining health and economic well-being of large segments of the working age population, as in the case of white male Americans with a high school education (Graham & Pinto, 2017; McCloskey, 2016). Erosion in the quality of employment relationships and the value workers expect to gain from their jobs exacerbates the public’s distrust of organizations and institutions and declining confidence regarding the future. Reducing the effects of disruptions in future require top/down supports and coordinated interventions. Research is needed on interventions to increase resilience of career ecosystems (McCloskey, 2016).

**Practical Implications**

Our practical implications are addressed to workers, the firms with whom they work and the stakeholders who support them. All parties can develop more resilient and goal congruent employment arrangements by attention to market-related factors and career opportunities in both pre-hire and on-the job discussions. Attention to market-related factors means that arrangements discussed are targetted to improve the individual’s value and potential on both the external market as well as inside the organization. Career development means that the experiences individuals have at work foster both skill building as well as information gathering with respect to present and future opportunities. Job duties can be viewed from the perspective of the future opportunities, skills knowledge and contacts they help develop. At the same time, individuals differ in both their career and personal goals. The psychological contracts that parties keep and benefit from are those that help them realize their goals.

Given the role of goals in psychological contracting, the parties should keep in mind that goals change. Both should test and cross-check their understanding of the obligations to which they are party. It is advisable to reinforce these understandings periodically, as well, as to anticipate the possibility that circumstances might motivate a change in the psychological contract. Employers need to convey explicit and redundant messages. “All-hands” meetings to reinforce shared understandings can reduce mixed signals and conflicting supervisor-subordinate contract beliefs. Parties should check in periodically to ensure shared understandings. At the same time, workers, employers and other stakeholders can help each other anticipate future changes and consider ways of responding to one another’s evolving needs. Practitioners can benefit from factoring the effects of timing into their dealings with employees. The speed at which obligations are fulfilled and the timeliness of responses to disruptions are key to managing psychological contracts effectively.

Employment arrangements increasingly involve multiple parties engaged in collaborative work. Effective collaboration begins with familiarity among people, a basis for the formation of relationships and trust through awareness of others, their qualities, roles and skills. Employees and managers with broad contacts throughout an organization tend to be better informed and thus more credible in communicating with others. The career ecosystem goes beyond organizational boundaries, and psychological contracts exist with different stakeholders for entrepreneurs and self-employed. People whose work places them outside their own company, as guest workers or client supporters, are positioned to build broader business knowledge, customer contact and understand the larger environment. A resource to both employers and employees are company alumni, where creating and sustaining relations with former employees brings knowledge and opportunity.

Given the cyclical nature of career development where opportunities open and close and skills go in and out of relevance, resiliency is invaluable for well-being. Organizations and institutions are responsible for supporting an environment that builds resilient workers. Resilience can be promoted by providing employees opportunities for planning and developing their own careers, supporting training in career planning and proactivity (Glaub, Frese, Fischer, & Hoppe, 2014), and promoting alternative forms of employment that support both downshifting and phased retirement as non-work or life stage demands warrant and periodic reskilling as individual interests and organizational needs generate opportunity. The frequent call for firms to develop change-oriented cultures (Denison, 2012) reflects the need for psychological contracts that foster adaption and resilience. In this regard, greater use of individualized employment arrangements can help renegotiate the psychological contract in line with both individual and organizational goals (Rousseau, 2001; 2005).

Resilience is fostered by helping individuals manage their responses to environmental disruptions. Helping people build personal resources outside the firm including financial safety nets and broader relational ties in support of career and personal growth helps people be more robust and even thrive in challenging times. Providing flexibility to support a rich and balanced personal life, and portable benefits such as health insurance and pension enables a better life outside of work and an attractive future.

**Conclusion**

Placing contemporary careers in the context of the career ecosystem in which they unfold helps specify the dynamics facing career actors as individuals shoulder greater risk and personal responsibility for their careers. Risk brings uncertainty regarding the likelihood of fulfilling career and personal goals. Individuals are responding by expanding the stakeholders with which they form psychological contracts, fueling ecosystem dynamics that play out differently as a function of the resilience or fragility of the larger environment. Understanding contemporary career dynamics requires attention to the positions and relationships in the broader ecosystems in which individuals, organizations, and societal institutions are embedded. **References**

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**Table 1: Characteristics of Career Ecosystems Differentiated by Resilience**

|  |  |  |  |
| --- | --- | --- | --- |
| **ECOSYSTEM** | **Fragile** | **Robust** | **Anti-fragile** |
| **Network Ties** | Sparse, unequally distributed | Multiple, organizationally focused | Multiple, inter-organizational, boundary spanning |
| **Employment** | Limited opportunity, temporary and unstable, with winners and losers | Serial employment plus government supports | Mixed alternative employment and entrepreneurial opportunities plus surplus resources |
| **Well-being** | Precarity with stressors for less advantaged | Satisfactory | Growth in response to stressors |
| **Psychological Contract** | Transactional | Relational/Balanced | Several, multifaceted with diverse stakeholders |
| **Career trajectory** | Hierarchical for winners, limited careers for others | Internal careers and serial organizations | Boundaryless |
| **Responses to violation** | Dysfunctional relations continue for lack of alternatives | Seek new partners | (Re)negotiation and alternative seeking |
| **I-deals** | Allocated for high status | Supplemental to standard rewards | Numerous and normative |
| **Reciprocity** | Tit for tat | Relational and balanced reciprocity | Varies by stakeholder; generalized reciprocity |
| **Resources** | Limited | Moderate access to financial and developmental resources | Supportive environment with multiple sources of financial, personal and developmental resources |
| **Exemplar** | American rust belt, North Korea | German and French industrial sectors | Argentine High Tech, Finland, Silicon Valley |

**Figure 1: Psychological contracts and career studies: An overarching framework**

***Factors Policies & Processes Outcomes***

Pre-employment education/training

Socialization

Career trajectories

Risk allocation

Income insecurity

Retirement insecurity

Family supports

Career success

Strain/Resilience

Cognitive load/bandwidth

Well-being (physical, psychological, economic)

Needs & goals

Personality & predisposition

Human and social capital

Age, health status

Future time perspective

**Individual**

Business strategy

Market position

Stakeholder focus

Corporate Social Responsibility

HR strategies

Executive incentives

Industrial Relations

Risk allocation

Organizational capital

Talent Management

Attractiveness & reputation

Talent flows

Lead and lagged performance indicators

**Organization**

Employment

mediators (e.g. partnerships, NGOs)

Support for entrepreneurship

Welfare practices

Labor force quality

Social service demands

Educational system

Brain drain/gain

Labor productivity

Competitive advantage

National well-being

Labor laws

Government involvement in labor contracting

Economic dynamism

Rate of new business formation

**Society**

Economic zones

Political stability

Societal prosperity

**Global**

Convergence vs. divergence of people management

Cross-border mobility

Social service demands

Push/pull forces; talent development; individualization of society; entrepreneurship

Operating factors