

The Vocational Psychology of Agriculture: Fiat Panis

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AUTHOR NOTE

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Hunger and undernourishment are global problems of pandemic proportion. Fortunately, there is evidence of improved supply of food to those most in need and positive progress toward *Sustainable Development Goal 2: Zero Hunger*. Among the human population, the number of undernourished peoples has declined from more than 1 billion (18.6 %) in 1990-92, to 794 600 (10.9%) in 2014-16 (Food and Agriculture Organization, International Fund for Agricultural Development, & World Food Program, 2015). Yet, undernourishment continues to maim and kill children at staggering rates, causing growth restriction, stunting, wasting that has life-long effects, and 45% of child deaths—approximately three million children under five years of age (Black et al., 2013; World Food Program, 2017). The annual financial cost of undernutrition is approximately US\$3.5 trillion (World Food Program, 2017).

Poverty, conflict, policies, production, population, and climate change, are potent causes of undernourishment and its staggering rates of disability and death. All these intertwined factors have cognitive and behavioural correlates. It is peoples' attitudes, beliefs, interests, decisions, and actions that contribute to the problems of global hunger. Vice versa, it is people who are solving the problems of global hunger by improving production and access to food. Thus, as people are both the cause and cure of hunger, the question to be answered is whether psychology can contribute to mitigating the causes and effects of hunger, and, moreover, enhancing agricultural production and access to nutrition. Can psychology deploy its rich resources of research and practice to positively influence people's attitudes, beliefs, interests, decisions, and actions in ways that make a contribution to attaining Zero Hunger? To that end, in this paper, the *Vocational Psychology of Agriculture—Farming Food and Fibre* (VPA-FFF; McIlveen, 2015) is extended as an ethical and scientific program that directs research, education, and policy.

The VPA is contextualized amidst current initiatives in psychology to progress the Sustainable Development Goals with respect to the Psychology of Working (Blustein, 2006, 2013) and decent work (Blustein, Olle, Connors-Kellgren, & Diamonti, 2016). The VPA extends the Psychology of Working into the domain of farming food and fibre, and assumes decent work as a fundamental plank of its conceptual platform.

The Ethical Paradigm of the Vocational Psychology of Agriculture

The notion *decent work* is defined in Article 7 of the *International Covenant on Economics, Social and Cultural Rights* and enshrines just and favourable conditions of work, fair remuneration that ensures decent living standards, safe and healthy working conditions, equality of opportunity within the workplace, limitations on working hours, rest, and leisure (UN General Assembly, 1966, p. 6). These qualities of decent work are laudable; however, their theoretical and operational meanings in practice may vary considerably, ranging from the subjective perspective of the worker through to objective economic indicators used by the policy wonks (Burchell, Sehnbruch, Piasna, & Agloni, 2014). The subjective experience of work is the substantive grist of vocational psychology; however, apart from a few notable examples (Athanasou, 2010; Di Fabio & Blustein, 2016), there is scant evidence of interest in decent work within the mainstream discipline's research and practice literatures. Decent work is very much an emerging topic within vocational psychology which has an extraordinary potential to contribute to research and practice apropos access to decent work.

Access to decent work may be taken as written in developed nations with thriving economies and functional polities in which democracy and the rule of law prevail. Nonetheless, the availability of decent work is not necessarily uniform in developed nations, as unemployment continues to threaten access to decent work. In poorer developing nations, a lack of decent work is more the exception than the norm. The International Labour

Organization's (ILO; 2017b) *World Employment Social Outlook* reports the variable access to decent work. The ILO expects global unemployment to rise 5.7% in 2016 to 5.8% in 2017, which is an increase of approximately 3.4 million to 201 million in 2017. Much of this increase is due to recessions in developing and emerging nations (e.g., 25.9% unemployment in South Africa). Wealthier nations are not necessarily doing so well. USA and Canada, for example, report high levels of long-term unemployment (i.e., > 27 weeks) showing no sign of improvement after the global financial crisis (International Labour Office, 2017b). Despite the number of low and middle-income nations within greater Asia, the ILO's research reveals that this region is enjoying rates of expanding employment and reducing poverty. And, despite China's and India's ostensibly good unemployment rates in 2016, 4.6 and 3.5% respectively, the number of unemployed persons is more than the entire population of some nations: 37.3 million in China and 17.7 million in India.

Decent work is addressed in *Goal 8: Decent Work and Economic Growth* of the 2030 Sustainable Development Goals (SDGs) (International Labour Office, 2017a). Decent work Furthermore, decent work is intrinsic to the SDGs and specifically integrated the SDGs. The following excerpts from the other 16 Goals highlight the crucial positioning of decent work:

Goal 1 No Poverty (ILO, 2017, p. 20)

Goal 2 Zero Hunger (ILO, 2017, p. 21)

Goal 3 Good Health and Wellbeing (ILO, 2017, p. 22)

Goal 4 Quality Education (ILO, 2017, p. 23)

Goal 5 Gender Equity (ILO, 2017, p. 24)

Goal 6 Clean Water and Sanitation (ILO, 2017, p. 25)

Goal 7 Affordable and Clean Energy (ILO, 2017, p. 26)

Goal 9 Industry, Innovation and Infrastructure (ILO, 2017, p. 27)

Goal 10 Reduced Inequalities (ILO, 2017, p. 28)

Goal 11 Sustainable Cities and Communities (ILO, 2017, p. 29)

Goal 12: Responsible Consumption and Production (ILO, 2017, p. 30)

Goal 13 Climate Action. (ILO, 2017, p. 31)

Goal 14 Life Below Water (ILO, 2017, p. 32)

Goal 15 Life on Land (ILO, 2017, p. 33)

Goal 16 Peace, Justice and Strong Institutions (ILO, 2017, p. 34)

Goal 17 Partnerships for the Goals (ILO, 2017, p. 35)

The nexus of decent work, poverty, and hunger is self-evident. Likewise, are the implications for approximately 2.2 billion people surviving below the poverty line indicator: \$US2 per day (International Labour Office, 2017a).

Article 11 of the International Covenant on Economics, Social and Cultural Rights declares the right to a standard of living that specifies access to food, housing, and clothing (UN General Assembly, 1966, p. 7). Such basic provisions are patently linked to Article 12 which declares the right to health. The appalling rates of morbidity and mortality due to undernourishment (Black et al., 2013; World Food Program, 2017) can be redressed by proper access to food, housing, clothing. As with the Covenant's Article 7—the right to decent work—there are obvious links among Articles 11 and 12 and the SDG Goals.

Blustein's Psychology of Working Framework (PWF; Blustein, 2006, 2013) enreats a commitment by psychology to human rights and, in particular, decent work (Blustein et al., 2016). The vocational psychology of agriculture (VPA) adopts the precepts of the PWF, including the human needs of survival and self-determination (Blustein, 2006). What could be more proximal and fundamental to these aspirations than the aphoristic "food on the table, shirt on my back, and a roof over my head"? The VPA extends the PWF's precepts and advocacy for decent work further by taking a definitive emphasis on the SDGs directly related to farming, food, and fibre:

Goal 1 No Poverty: Decent work for all, including social protection, is therefore the main route out of poverty for individuals, communities and countries. (ILO, 2017, p. 20)

Goal 2 Zero Hunger: Decent work in sustainable agriculture and food value chains is therefore crucial to reaching this goal. (ILO, 2017, p. 21)

Goal 12: Responsible Consumption and Production: Decent work for all – in particular green jobs – will contribute to making development environmentally sustainable. (ILO, 2017, p. 30)

Goal 13 Climate Action: Climate change action will ...benefit greatly from the application of the Decent Work Agenda. (ILO, 2017, p. 31)

Goal 14 Life Below Water: Decent work for all, including fair remuneration and working conditions to the world's seafarers and fishers, is a foundation for conserving marine resources and reducing overfishing. (ILO, 2017, p. 32)

Goal 15 Life on Land: Ensuring that protecting the terrestrial environment is integrated into poverty-reducing national and local development strategies requires a focus on decent work for all land workers. (ILO, 2017, p. 33)

Quintessentially, these goals that motivate the VPA are self-evident human rights.

The agricultural revolution was the progressive subversion of plants and animals to satisfy humans' needs. Humans took control of wild grasses to make wheat for bread, vines to make wine, and beasts for meat, milk, and clothing. A sustainable supply of food and fibre throughout the changing seasons created a positive feedback loop between population growth and need. Soon enough, ancient practices gave way to science and methods of production that far surpassed those of the ancients. The ineluctable truth is that humans' agricultural achievements sowed the seeds of wicked problems associated with population growth and movement. Tragically, agricultural production is distributed in distorted markets with so

much of the bounty going to waste, despite the millions of people starving every day. Such injustices are well told by authors of dystopian accounts that depict human genius as the source of our collective troubles—we killed God (Nietzsche, 1886/2003) only to become one, *Homo Deus* (Harari, 2015).

The Science of a Vocational Psychology of Agriculture

Vocational psychology provides a substantive contribution to education, which, like decent work, is inherent to the rights declared in the International Covenant on Economic, Social and Cultural Rights and germane to ensuring progress toward the SDGs. Vocational psychology's research, knowledge-base, and practices are writ large in education. The science and technology of career assessment, for example, contributes to school students' career decision-making, choices, and progress in learning. Evidence of the effectiveness of career interventions is affirmative (Whiston, Li, Goodrich Mitts, & Wright, 2017).

Given vocational psychology's positive impact on education, the enticing prospect of vocational psychology having a positive impact on the agenda of decent work and a standard of living is yet to be realized. Consider, for example, the recent emphasis on research into science, technology, engineering, and mathematics (STEM) careers (Le & Robbins, 2016), such as engineering (Lent, Singley, Sheu, Schmidt, & Schmidt, 2007), and attracting and retaining women in that STEM profession (Fouad, Singh, Cappaert, Chang, & Wan, 2016; Singh et al., 2013). Vocational psychology may very well focus its resources on STEM all the while with a higher rationale of contributing to research, policies, and practices apposite to achieving the SDGs, decent work, and a standard of living. Such important contributions become more salient in light of the FAO's predictions that 1.7 billion workers will leave agriculture in the coming decades (Food and Agriculture Organization of the United Nations, 2017). The effects of such a collapse in the agricultural labour force would lead to drastic

reductions in supplies of food and fiber, and it will be the poorer peoples of the world who will bear the burden of such scarcity. The positive challenge is to muster vocational psychology's scientific and professional resources to influence policy, programs, education, and workforce development with the aim of attracting and retaining workers in agriculture across the value chain, from on-farm to the household. This ebullient optimism for the potential of vocational psychology must be moderated, however; for the evident lack of attention to the psychology of farming food and fibre.

Scholars of vocational psychology (Casper & Swanberg, 2011) and industrial/organizational psychology (Bergman & Jean, 2016) opine the relative emphasis on research into occupations and work that is predominantly professional in its training and qualifications, and middle-class in status, and the concomitant lack of research into trades and lower skilled work. Bergman and Jean found that are mere 7% of literature in top I/O journals in the period 2012-2014 pertained to non-executive, non-professional, non-managerial workers. For the present paper, we conducted a brief scan of articles published in the *Journal of Vocational Behavior* from 2007 to 2017. Using journal's "Abstract, Title, Keywords" search function, the search terms "laborer" and "semi-skilled" recovered zero articles on separate searches. The search term "agricult*" recovered two and "farm*" recovered zero. Not to be discouraged, we changed the year of search to All Years to Present. This expanded search recovered ten articles for "agricult*" and six articles for "farm*", with the majority overlapping, and four published in the 1970s. The *Journal of Applied Psychology* was equivalently bare.

Much has changed in agriculture since the landmark paper, *The Psychology of Farming: A Review of Twenty-Five Years of Research* by Richards (1973) but it seems as if psychology has not kept pace with agriculture during the past four decades. Of course, we admit that the literature search presented here is a limited; however, that the premium

scientific outlet for vocational psychology has so few papers devoted to agriculture gives credence to the criticism that psychology abandoned the agricultural field, metaphorically speaking (McIlveen, 2015). In the *Encyclopedia of Psychology and Behavioral Science*, the entry for “Agricultural Psychology” begins: “In contrast to other social sciences that have developed specialized subdisciplines and/or application interests in agriculture, psychology historically has not been known for its concern with rural issues.” (Shanteau, 2001). The author suggests that psychology can be useful to agriculture but presumably had little research evidence to cite at that time that could be used to explicate a convincing point to counter the beginning of his entry.

The volume of agricultural research in vocational psychology contrasts to other applications of psychological science to understand farmer’s decision-making about business diversification (Hansson, Ferguson, & Olofsson, 2012), conservation behaviors (Beedell & Rehman, 2000; Greiner & Gregg, 2011; Greiner, Patterson, & Miller, 2009; Lokhorst, Staats, van Dijk, van Dijk, & de Snoo, 2011; Maybery, Crase, & Gullifer, 2005), identity (Burton & Wilson, 2006), safety practices (Cole, 2002) their productivity (Roy, 2009; Wuepper & Sauer, 2016), and empowerment against corrupt markets (Milani Marin & Russo, 2016). Among this literature, the utility of the theory of planned behavior (TPB; Ajzen, 1985; Ajzen, 1991) for research into the cognitive and behavioural dimensions of agriculture is evident (e.g., Beedell & Rehman, 2000; Hansson et al., 2012; Lokhorst et al., 2011) and promoted as an appropriate behavioural theory (Burton, 2004). Evidently, other branches of psychological science are making contributions to agriculture and agribusiness, but vocational psychology is hardly visible.

Although TPB is relevant to vocational behaviour (Kanfer, Frese, & Johnson, 2017); its utilization in the literature of vocational psychology is relatively limited compared to the social cognitive career theory (SCCT; Lent & Brown, 2013). Extensive conceptual and

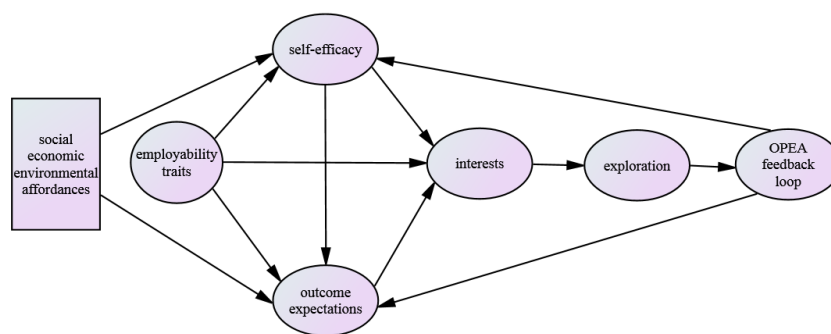
empirical research demonstrates SCCT's utility for important career development phenomena, such as interests (Lent, Brown, & Hackett, 1993), persistence toward achieving career goals (Brown et al., 2008), work performance (Brown, Lent, Telander, & Tramayne, 2011), work-related wellbeing and satisfaction (Lent & Brown, 2008), life satisfaction (Lent et al., 2005), and the important role of contextual factors in career (Lent & Brown, 2006; Lent, Brown, & Hackett, 2000). Thus, we turn to the SCCT as a scientific framework to guide VPA research.

A Social Cognitive Perspective of Careers in Agriculture

SCCT (Lent & Brown, 2013) is predominant in the vocational psychology and career development literature of the past decade. SCCT proposes a process model which has its core three key social-cognitive constructs: (a) self-efficacy, (b) outcome expectations, and (c) goals (and goal-directed activity). These constructs inter-relate and are influenced by individual traits and contextual factors leading to a range of career outcomes.

It may seem ironic to take a social cognitive perspective that emphasises personal agency in an industry that has profited from slave and bonded labour, and which in some parts of the world still does. However, modern agriculture has moved through the industrial revolution, the green revolution, and now moves into the data and technology revolution, and corresponding working conditions have improved towards achieving decent work status. As nations have become more prosperous, and consumers demand more transparency, the pressure for businesses to provide good working conditions for people employed throughout the agricultural food and fibre production and supply chain make it possible now to conceive, theorise, and ask the question, beyond money and survival, what motivates people to direct their agentic behaviour towards the pursuit of careers in agriculture?

Drawing from earlier SCCT models, we theorize a Social Cognitive Model of Agricultural Career Interest Development via OPEA Feedback loop (as shown in Figure 1). This model proposes a series of direct and indirect paths between (a) social, economic, and environmental affordances, (b) employability traits, (c) self-efficacy, (d) outcome expectations, (e) interests, and (f) exploration. The model illustrates the feedback loop which occurs when these constructs influence the presence of the four sources of self-efficacy and how these in turn magnify or inhibit an individual's self-efficacy and outcome expectations, reinforcing or weakening agricultural career outcomes.



A Social Cognitive Model of Agricultural Career Interest Development via OPEA Feedback Loop
McIlveen & McDonald (2017)
Note. O = observation; P = persuasion; E = experience; A = affective arousal

Figure 1. A social cognitive model of agricultural career interest development via OPEA feedback loop.

Social, Economic, and Environmental Affordances

Social, economic, and environmental affordances present a range of supports or barriers that impact an individual's interest in agricultural work and the pursuit of a rewarding career in this industry. Socially, many of the world's metropolitan dwellers have rather outdated ideas of the nature of farm work and it is a profession that is not given much

status within many developed nations. Also, people from farming communities, based on their experiencing or witnessing an industry that can be plagued by struggles such as drought, may encourage their children away from pursuit of an agricultural career and negatively impact their self-efficacy for agricultural work. Conversely, communities in rural areas are typified by a close and supportive culture that once experienced may contribute to expectations of a desirable lifestyle attainable by pursuit of agricultural work. The team work environment and presence of social support in agriculture can bring positive career influences. Economically, the job opportunities that would attract and retain workers to rural farming communities may not be available. When these jobs are available, the prevailing narrative that the opportunity of a better career, better money, and a better life exists within the cities sees a regular exodus of people furthering the rural-metropolitan divide. However, the influence of STEM professions within agriculture has meant improved sustainability and productivity of farming operations adding to the economic stability of the industry and quality job prospects for people. Finally, perhaps the most significant external impact on pursuit of careers in agriculture is environmental influences. Climate, soil, water availability and weather events largely determine the possibilities for success and failure of agricultural industries and act as barriers or supports in farming. Workers with high self-efficacy and positive belief in achieving expected outcomes can have the results of their labour thwarted by Mother Nature. However, the uncertainty associated with this influence can often be viewed as an ongoing unpredictable challenge, which continually motivates people within agriculture to dedicate effort in any areas they can exert some control. Environmental influences frame the stage on which agricultural careers play out, and in this way influence the task self-efficacy and outcome expectations of agricultural workers.

Employability traits

Individual differences in personality and affective traits influence levels of self-efficacy, outcome expectations and interest development with relation to agricultural careers. While conscientiousness and positive affect are consistently shown as adaptive traits for the workforce, other traits of interest for the pursuit of agricultural work include openness to experience, proactive personality, grit and optimism. An individual who possesses these psychological strengths interacts with the farming environment in a way that elicits encouragement from more experienced colleagues. This is important for any profession within agriculture but is essential for on-farm positions which do not require formal qualifications and are learnt on the job. In this way, employability traits influence self-efficacy as those better able to garner support learn quickly and develop the confidence to embrace autonomous roles within the farming business. These traits are the personal resources that influence the level of outcome success a person expects to achieve and help a person approach rather than be overwhelmed by the challenges associated with agricultural work.

Self-efficacy

Agricultural work encompasses a wide range of job positions and even similar job positions can vary in terms of work responsibilities and tasks required to be competently performed. New farming approaches, new technology, and the push to make productivity gains worldwide makes agriculture an industry of continuous learning. Believing that one possesses the ability to learn and master work tasks is an essential component to ensure agricultural workers apply sustained effort in their job performance. In farming roles where little supervision and a large amount of autonomy is normal practice, self-efficacy prevents feeling overwhelmed or anxious when faced with the tasks that need to be performed in an environment where success is influenced by many factors outside of the worker's control,

including the presence of optimal weather conditions. Self-efficacy acts as a necessary antecedent to outcome expectations and interest development in that an absence of self-efficacy leads to disengagement or refocusing of interests elsewhere to protect individual's from perceived inevitable failure at work.

Outcome expectations

The influence of outcome expectations as a driving force in the SCCT model occurs when potential outcomes offered by engaging in agricultural work are personally desirable and individuals identify with the values that inform the farm's team and business goals. These values that underpin farming operations business decisions can be related to a number of goals including economic, lifestyle or conservation goals (Maybery, Crase, & Gullifer, 2005). As technological advances remove the need to complete menial and laborious tasks on farm, work conditions improve becoming safer and higher skilled positions bring with them better remuneration. The expectation that work is decent and a good living can be earned when working in agriculture is essential. Consideration of the potential lifestyle that comes with agricultural work may a concern for those unfamiliar with rural areas. Social isolation and a lack of services impact some people's pursuit of a good life, while for others the open space of the outdoors, lack of congestion, and small town communities are idyllic. The pursuit of work in the agriculture industry offers individuals the opportunity to be a part of feeding and clothing the world and to influence that this is done in a way that preserves the environment for future generations. This connection to the outcome of meaningful work and an expectation that this can be attained may be a key driver for people committing to work in agriculture.

Interests

In our model of agricultural interests, we pose relations extending from employability traits, which are essentially individual differences constructs that include dispositional traits,

directly to interests and via self-efficacy and outcome expectations. The individual differences perspective on vocational interests is exemplified in the theoretical and technical works of Holland and his RIASEC hexagonal model (Holland, 1997). Recent research affirms the predictive stability and predictive validity of interests (Patrick J. Rottinghaus, Coon, Gaffey, & Zytowski, 2007) and their relations with dispositional traits (Larson, Rottinghaus, & Borgen, 2002). The nexus of traits, interests, and self-efficacy is demonstrated in research that reveals self-efficacy's direct and mediational effects on interests (Nauta, 2004; Patrick J. Rottinghaus, Larson, & Borgen, 2003; P J Rottinghaus, Lindley, Green, & Borgen, 2002). Nonetheless, evidence of recursive relations prohibits an assumption of a straightforward pathway from personality to interests via self-efficacy, and directly from the two predictors to interests (Armstrong & Vogel, 2009). Thus, we urge scholars to eschew simplistic empirical models of causation that include a direct chain of effects between traits, efficacy, and interests.

Exploration

Exploration can be conceptualized as part of crucial developmental stage (Super, 1980, 1990) and, according to the SCCT, as cognitive and behavioural activities that involve the collection, collation, and categorization of career information. With respect to agricultural careers, career exploration includes learning about agricultural occupations via sources of information (e.g., online, industry literature), engaging in work experience or professional placements on farms, and doing agricultural work as part of a gap year. There are outstanding educational programs that provide for exploration. In Australia, for example, agricultural studies may be taken as a high school subject, there are national agencies that support agricultural studies in schools, (e.g., Primary Industries Education Foundation Australia), and there are formal qualifications offered by universities and technical colleges.

OPEA feedback loop

To use a farming aphorism, the vexing, “What came first, the chicken or the egg?”, problem, we argue that individuals self-efficacy will be positively influenced by positive inputs. The four sources of self-efficacy are: (a) observation, (b) persuasion, (c) experience, and (d) affect. The sources of self-efficacy are experienced in contexts of career exploration and these experiences inform ongoing self-efficacy and beliefs around expected outcomes for people. It is through this feedback loop that career interests and career exploration contribute to adoption of agricultural careers. Notwithstanding the value and effectiveness of current educational resources, we contend that their uptake by potential students is inhibited because, to use another farming aphorism, “you can lead a horse to water but you can't make it drink”. We suggest that insufficient emphasis is given to constructs upstream in the model (e.g., traits, efficacy, expectations, contextual affordances). The mere presence of resources may be necessary for career exploration but it is not sufficient in itself to raise aspirations. Thus, we include the OPEA feedback loop in our model as means to highlight the dynamic relations among all of the constructs in the model. As per the problems of the horse and the water, and the chicken and the egg, we urge a flexible perspective on the relations among the constructs and the sources of efficacy given in the SCCT. What may be a mediator in one context may be a moderator in another.

Research & Development Agenda

SCCT is an ideal theoretical framework to organize research that addresses the factors that attract and retain individuals in agriculture. Indeed, a corpus of conceptual and empirical research that attests SCCT's utility in several domains of research that are relevant to the VPA, such student career decision-making and academic performance (e.g., Brown et al., 2008; Lent et al., 2008), work performance (e.g., Brown et al., 2011), unemployment and reemployment (e.g., Thompson, Dahling, Chin, & Melloy, 2016), and specific STEM

occupations (e.g., Fouad et al., 2016; Singh et al., 2013). To advance SCCT's empirical status and to articulate the VPA, the following research objectives are posed:

- Test the transferability and cross-cultural utility of the SCCT in non-Western languages and cultures, particularly in nations that are heavily reliant on agriculture for population health and wealth.
- Construct self-efficacy measures that are specific to particular work and industry sectors (e.g., horticulture, broad-acre cropping) yet sufficiently inclusive of behaviors that cover a range of common agricultural competencies.
- Advocate, develop, and evaluate education and training interventions that utilize social cognitive concepts and pedagogy (e.g., mentoring, role modeling, zone of proximal development) to attract and retain individuals in agriculture, ranging from school and college-based programs through to work-site, field-based programs.
- Discern the effects of contextual factors on key predictors (e.g., self-efficacy and outcome expectations) and outcomes (e.g., interests, work engagement), particularly those contextual factors that are environmental and seasonal (e.g., drought, harvest) and valent at local levels of cultural behaviour (e.g., regional differences in agricultural practices).
- Audit current international surveys conducted by large organizations concerned with economic development and sustainability, such as the Food and Agriculture Organization (FAO) or Organization for Economic Cooperation and Development (OECD), to identify potential gaps within the surveys' measures apropos social cognitive predictors of agricultural productivity and scope the potential for inclusion of these variables in these surveys.

Ethical Conundrums

The axiology of the Vocational Psychology of Agriculture—Farming Food and Fibre reflects the humanism of the Psychology of Working (Blustein, 2006, 2013) which posits decent work as a resource to fulfil human needs for survival, power, social connection, and self-determination. This humanistic perspective invites notions of liberty and social justice. The VPA-FFF is about using scientific knowledge and technology of vocational psychology for social and economic ends; therefore the VPA-FFF is intrinsically politicized. Accordingly, the VPA-FFF's research and development agenda should be subject to philosophical, ethical scrutiny.

From the perspective of Foucault's (1980) nexus of knowledge/power, the VPA's calculus is simple. The ends: a stronger agricultural labour force capable of production levels necessary to meet global demands for food and fiber. The means: a corpus of evidence and discourse that influence public policy, education and training, and professional practices to build a stronger agricultural labour force. These ends and means are ostensibly humanistic; however, the attendant conundrum of knowledge/power is adjudging whose ends and means are served by the VPA-FFF. Perhaps a solution to that problem is a matter of who stakes a claim on the evidence and technology produced by the VPA-FFF.

Conclusion

We believe that the Vocational Psychology of Agriculture—Farming Food and Fibre has much to offer agriculture across the value-chain. Here we offer just one conceptual solution with empirical and pragmatic potential. The SCCT model of agricultural interests is conceptual tool to describe relations among constructs, offer predictive hypotheses, and, on the evidence to thereby gleaned, inform the design, delivery, and evaluation of educational resources that aim to attract talent into agriculture. Only further research and development, and evaluation of career interventions can test the theoretical and pragmatic utility of the

SCCT model of agricultural interests. Vocational psychology's treasury of knowledge and technology has more than the SCCT.

We believe that vocational psychology can and should make a difference to agriculture and thereby make a difference to eliminating hunger and poverty, and concomitantly improving health and wellbeing. There are few greater reasons to make use of an applied psychology than to solve pressing problems in the world. Fiat Panis.

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