ADDRESSING THE 'VALUE' DILEMMA OF ENTERPRISE EDUCATION: RISING TO THE ONTOLOGICAL CHALLENGE

Colin Jones: University Of Tasmania, Hobart, Australia

~

Contact: Colin Jones, University of Tasmania, Australian Innovation Research Centre, Private Bag 108, 7001 Hobart, Australia, (T) 0362267362, (F) 0362267380, Email: Colin.Jones@utas.edu.au

ABSTRACT

What value is created by entrepreneurship education? How could any such value created? Both questions are addressed within this paper. It is proposed that research into entrepreneurship education needs to incorporate a consideration of the ontological challenge that accompanies the development of knowledge and skills that may not be used by students immediately upon graduation. This paper reports on the author's own findings and those of a colleague who has also investigated the development of student value at UTAS. Several contemporary issues related to entrepreneurship education are introduced and discussed throughout the paper.

INTRODUCTION

During recent times, entrepreneurship education (EE) has flourished in the domain of higher education. However, serious questions are being voiced as to societal *value* of EE and what should be the focus of this form of education. An anomaly (it would appear) exists in that students are frequently heard to state they feel they have benefited significantly from EE, yet few seem to start a business during their studies or immediately upon graduation. This paper aims to explore these important issues, drawing upon a critical realist approach. It is with the notion of *value* that this paper is explicitly concerned. More specifically, what *student value* is created from EE that can be reconciled to the delivery of EE? To address this issue, Bhaskar's (1975) notion of the stratified reality of nature is invoked to separate generative mechanisms from the might behaviours they create and from the events we experience as researchers in the empirical world. Or stated more simply, Bhaskar's stratified reality allows the researcher to separate the possible alteration of our students' *habits of thought* from any future demonstration of *entrepreneurial behaviour* and our inquiries of such behaviour at a *latter point in time*.

This paper breaks new ground, investigating several contemporary EE issues that have emerged recently. Perhaps of most concern has been the provocative position of Storey (2009). Storey, (with reference to the work of Baumol (1990)) casts doubt on the productivity of EE vis-à-vis stimulating the supply of entrepreneurs into society. Storey's primary argument being that Baumol convincingly demonstrates that throughout time, the supply of entrepreneurs within society has always been strong. Therefore, why the need for EE when entrepreneurs have a way of always being *found* in society? However, the critical issue for Baumol was the rivalry between productive and unproductive entrepreneurial activity is society, and it is around this issue that the concerns of Storey will eventually be addressed.

The second area of concern relates to Bygrave's (2009) contention that there is little evidence to support the creation of *student value* from completing a business plan whilst studying in higher education. With reference to past research at Babson College, the success of past students in their current activities was deemed to be more related to their networking abilities (i.e. social capital), their ability to raise finance (i.e. financial capital) and their development of human capital (i.e. industry knowledge), rather than from the development of a business plan as part of their studies. Clearly the time between graduation and eventual start-up is likely to contribute to such findings. Nevertheless, the business plan is commonly held to be the final piece in the EE jigsaw puzzle, and therefore, any doubt regarding its contribution to *student value* is also worthy of consideration.

The last issue relates to concerns of Hindle (2007) that EE as a field of study lacks legitimacy as a source of value within the broader education community in higher education. Specifically, that we as educators still have a responsibility to provide logical justification that EE is a feasible and desirable

form of education in society. In summary, at present, respected researchers/educators in the field of EE are currently challenging other educators/researchers in this field to question the value to students (and therefore society) of EE on the basis that without it, entrepreneurs will continue to step forward, that one of its assumed key components may hold little relation to future student value, and that as a domain of study, it lacks basic legitimacy.

To explore the validity of such concerns, this paper adopts a critical realist approach, aiming to avoid committing an epistemic fallacy whereby we might "mistake the experience of the constant conjunctions of events for the causal mechanisms which underpin them" (Scott, 2000). Such an approach makes possible an attempt to identify and isolate the *value* students perceive from studying entrepreneurship and the conditions under which any such *value* is created, used and/or negated. So it is the aim of the paper to explore the question of what *value* do students feel is created from EE? Second, under what conditions might students feel any such *value* is created? Third, under what conditions do students feel any such *value* is beneficial? Fourth, do students feel that the creation of any such *value* is isolated from their other areas of study and/or prior life experiences? And lastly, under what circumstances do students feel that such *value* is negated or reduced? It is not the aim of the paper to build a model of entrepreneurial student *value*, but rather to initially speculate as to the likely components of any such future attempts to study this issue. The context of the study is an established program in EE at the University of Tasmania (UTAS).

The remainder of the paper is constructed in the following manner. First, the research method used is briefly explained. Second, the nature of the critical realist approach employed in this paper is outlined. Third, the EE program developed at UTAS since 2002 is discussed vis-à-vis its aims of developing value for participating students. Fourth, the ontological nature of knowledge usage (i.e. present or future usage) and knowledge creation is discussed with reference to the notion of the nascent entrepreneurs' resource profile (see Aldrich and Martinez, 2001) and the development of the Reasonable Adventure (Heath, 1964). Fifth, the author's own emergent findings and those of Lansdell (2009) are presented. Lastly, a discussion of the implications for researchers and educators is presented.

RESEARCH METHOD

This research is based on a single-site case study at UTAS with the data collected by the author and complemented by the recent work (Lansdell, 2009) that sought to empirically consider the notion of student value from EE within the same (UTAS) context. In essence, the research method builds upon previous work (e.g. Hegarty and Jones, 2009) that has been modelled on Hayward's (2000) cycle of reflective practice within which the seminal works of Dewey (1933), Kolb (1984) and Schon (1983; 1987) were successfully integrated. This process of reflective practice is designed to allow the self-reflection of one's practice with the aim being the development of new knowledge that is personally relevant. Of specific interest to the reader will be the use of critical realism to imagine the nature of value received by students and the conditions that must exist for it to be created and of beneficial use to the students. The work of Lansdell provides an illustration of the process of retroduction through which consideration is given to postulated properties that must exist for the supposed generative mechanisms to exist within identifiable conditions. As such, this paper offers to the reader an initial attempt at modelling the likely components of a future model of graduate student entrepreneurship value

A CRITICAL REALIST APPROACH

A key aspect of this investigation is the need to determine the *presence* of student perceived value. Of critical importance is to establish a causal link between EE, the modification of students' habits of thought and altered student behaviour. Within this approach, it is the students' habits of thought that are cast as a generative mechanism that under particular (learning) conditions might be altered so as to produce (under other specific life conditions) particular forms of entrepreneurial behaviour of value to individual graduates. Bennett and George (2003) argue that generative mechanisms are ultimately unobservable social, physical, [or] *psychological processes* that under specific conditions have the potential to transfer energy, *information*, or matter to other entities. Bhaskar (1975) argues that mechanisms are real and distinct from the patterns of events that they generate; just as events are real and distinct from the experiences in which they are apprehended.

Figure 1.2 below illustrates Bhaskar's notion of a stratified reality. With reference to Figure 1.2, the more precise aim of this paper is to investigate the possible presence of specific generative

mechanisms (that are located in the domain of the real), proposed to be directly related to altered student behaviour (due to events occurring in the domain of the actual), and to account for contingent conditions associated with their operation and/or suppression (as we observe events in the domain of the empirical).

Figure 1.2 – Bhaskar's Three Overlapping Domains of Reality

	Domain of Real	Domain of Actual	Domain of Empirical
Mechanisms	√		
Events	√	√	
Experiences	√	√	√

Source: Bhaskar (1975)

Given the specific challenge of attempting to acquire knowledge of the contingent conditions and structures related to generative mechanisms (none of which can be directly observed in the empirical domain), Bhaskar's (1975) process of transcendental realism is used as a guiding framework in this investigation. As such, the research process is aligned to the theoretical practice of retroduction. Retroduction involves the explanation of events in the social world by seeking to discern the structures and mechanisms that are capable of producing them" (Blundell, 2007, p. 55). So the process relates to logically deducing particular historical outcomes or events – rather than testable hypotheses – from a set of assumptions. We seek to find evidence about fundamental structures whose powers act transfactually (i.e. in the domain of the real). Blundell notes that the process seeks neither to use deductive or inductive logic, but rather seeks (via empirical scrutiny) to move from initial description and abstract analysis to the reconstruction of the basic conditions that make possible the mechanisms.

Separate to inductive and deductive forms of reasoning, retroduction is simply *conjecture which arises in the mind*. It has been argued that retroduction "represents an attempt to overcome the pitfalls of purely inductive or deductive research processes" (Sæther, 1998, p. 246). Moreover, Peirce (1908, p. 104) argues that it is a form of reasoning through which "spontaneous conjecture of instinctive reason" provides the intellectual foundations for new ideas to eventually be deductively explicated and/or inductively evaluated. Retroduction is an *initial* thought process through which the provisional plausibility of something is held to be possible. For Peirce, such journeys via retroduction are essential for the development of new ideas from which deductions can be drawn and compared against future observations. Danermark et al., (2001, p. 96) argue that "retroduction is about advancing from one thing ... and arriving at something different". The notion of the fitting of an ever altering conjecture to an anomaly perfectly describes the process of speculating about the elements of a future model of student value from EE. At no point was the author afforded security from the retroduction process, merely the confidence to "enter ... [a] ... skiff of musement ... [and to] ... push off into the lake of thought (Peirce, 1908, p, 95)."

A fundamental issue of Bhaskar's (1979) transcendental realism is his distinction between epistemology (i.e. knowing) and ontology (i.e. being). Scott (2000, p. 14) states that Bhaskar adheres to "four foundational principles: there are objects in the world whether they are know or not; knowledge is fallible because any claim to knowledge may be open to refutation; there are transphenomenalist truths in which one may only have knowledge of what appears, but these refer to underlying structures which are not easily apprehended; most importantly, there are counter-phenomenalist truths in which those deep structures may actually contradict or be in conflict with their appearances." The importance of these principles will become more apparent when the nature of entrepreneurship knowledge is considered. Suffice to say, an attempt will be made throughout this paper to suggest possible causal relationships between underlying structures associated with EE through which student value is assumed to be generated. Before we move into this discussion, let us first consider the development of EE at UTAS.

ENTREPRENEURSHIP EDUCATION AT UTAS

In 2001, the Tasmanian State Government and the University of Tasmania entered into a partnership agreement to support the development of a degree program in Entrepreneurship. Initially, the curriculum was constructed around a set of personal and enterprise development objectives, illustrated in Table 1 below.

Table 1 – Personal and Enterprise Development Objectives

Personal development	Enterprise development
Concept of entrepreneurship	Identifying and evaluating opportunities
Characteristics of an entrepreneur	Commercialising a concept
Value of entrepreneurship	Developing entry strategies
Creativity and innovation skills	Constructing a business plan
Entrepreneurial and ethical self-assessment	Finding capital
Networking, negotiating and deal-making	Initiating the business
	Growing the business
	Harvesting strategies

Source: Jones & English (2004)

The above objectives were tailored to the initial underlying assumption that the program's graduates would be well placed to start a business upon completion of their studies; an outcome (now known to be) not achievable for the vast majority. However, the primary notion that the curriculum should framed around the development of the 'Person' and 'Enterprise Knowledge' has remained. As has the learner-centred approach to delivering the curriculum, with students required to be fully responsible for their learning outcomes.

At the program's commencement the use of student presentations was favoured to help reverse the roles of the 'educator' as speaker and 'educator' as listener. While this learner-centred approach has remained, and indeed being further developed, the program represents an example of continual innovation and never ending evolution. Evidence of the trajectory of this process and its outcomes can be found in the numerous peer-reviewed publications related to the programs past development (Jones, 2009a; 2009b; Hegarty and Jones, 2008; Penaluna., Brown., Gibson., Jones and Penaluna, 2008; Jones, 2008; Jones, 2007a; Jones, 2007b; Jones, 2007c; Jones, 2007d; Jones 2006a; 2006b; 2006c; 2006d; 2006e; 2006f, Jones 2005a; 2005b; 2005c, Jones & English 2004, Jones 2003, and English & Jones 2003). The program remains the only entrepreneurship education program recognised (in 2005) for teaching excellence at the Australian University Teaching Awards.

Perhaps the three most notable innovations that have most influenced the evolution of the program have been the development of the *Hic et Nunc* teaching and learning philosophy and the inclusion (and development) of reflective practice and alignment of the program's outcomes to notion of the Reasonable Adventure (Heath, 1964). The *Hic et Nunc* philosophy was developed from the ideas of Whitehead (1929) that emphasis a need to allow students to learn in their *here* and *now*. This has led to students being encouraged to contextualize theoretical ideas into their own life situations and then present their understanding to their fellow students. Discovering the notion of a 'reasonable adventurer' is claimed to have been very important to recalibrating the overall aims of the program. Rather than assuming the program's aims related to the development of entrepreneurs, the program (whilst not excluding such an outcome) has pulled back its (previously) stated aims to now produce graduated students capable of creating their own opportunities for satisfaction.

Inclusion of the Reasonable Adventurer concept has required a shift in the curriculum focus to ensure learning activities are designed to support the development of the six attributes of the Reasonable Adventurer. The first attribute is *intellectectuality*, the ability to alternate between being a believer and a skeptic. The second attribute is *close friendships*, or the ability to discover the individuality of others. The third attribute is *independence in value judgments*, or the ability to rely upon personal experience rather than known external authorities. The fourth attribute is a *tolerance of ambiguity*, or the ability to view life as a series of interruptions and recoveries (Dewey, 1922). The fifth attribute is the *breadth of*

interest, or an uncommon interest in the commonplace. The last attribute is a balanced *sense of humor*, or a benign, but lively sense of humor that distinguishes the reasonable adventurer, making him or her good company. So the aim has become focused on creating a fully functioning graduate, one that is capable of using his or her individuality in ways that are beyond their pre-existing mental endowments. Essentially, a student tethered to the reality of their world, yet capable of finding deep satisfaction from the ingredients of their raw life.

The last factor of note being the development of several forms of individual and group reflection through students can personally assess their own development and alter their learning behaviours between workshops and semesters. The naive assumption that such educational activities will (across the board) produce cohorts of instant entrepreneurs has been replaced with a more tempered approach. An approach that is more critically focused upon the resource profile of each student vis-à-vis the ideas they investigate. An approach that aims to develop an enterprising mindset from which personal advancement in a variety of fields is advanced. The basis upon which this shift in focus has occurred will now be considered drawing upon the ontological nature of enterprise knowledge.

THE ONTOLOGICAL NATURE OF ENTERPRISE KNOWLEDGE

Medical students graduate as doctors, engineering students as engineers and education students as educators, but students of entrepreneurship/enterprise rarely graduate as entrepreneurs (in the business start-up sense). It would seem that EE is fine for creating detectives but not barristers (i.e. EE students are capable of making a *case* for value creation, but generally fail to prosecute the case). However, an anomaly exists in that educators consistently receive positive feedback from graduates as to the value they gain from EE. It will be argued that this anomaly can be addressed by considering the underlying ontological issues. However, to do so, we must ask what our educational processes are actually attempting to do. Again, this discussion is premised on reflecting upon the past and current development program in EE at UTAS. In this context, "education is a process of changing the behaviour patterns of people. This is using behaviour in the broad sense to include thinking and feeling as well as overt action (Tyler, 1949. pp. 5-6)." From this perspective, we can no longer afford to ignore the ontological nature of enterprise knowledge.

An important question now requires consideration. How do we explain these changes in our students' thoughts and actions? It is argued that perhaps the greatest challenge is in accounting for the actual time lag between altered thoughts and altered actions. To address this issue it is useful to imagine what mechanisms must be in play so that particular events may occur. To also ask to what extent we as the educator/researcher are actually a witness and/or architect of such change in our students. The experience of working with several cohorts at UTAS suggests that we can be a witness to the *commencement* of the process of altered thoughts/feelings, but there are typically limitations as to the extent of overt entrepreneurial actions we will witness during their time of study.

Aldrich and Martinez (2001) argue that to make sense of the outcomes of entrepreneurial behaviour we must understand the context and process of such activities. When we encourage our students to visualise a business start-up and work towards this outcome, we must be mindful of the social, human and financial capital each student has vis-à-vis that particular idea under consideration. In the absence of the prerequisite resource profile, graduate entrepreneurship (as related to business start-up) is more often than not too challenging (see Hegarty and Jones, 2009). Allowing the pursuit of ideas without an accompanying appropriate resource profile opens up EE to questions of its societal value (e.g. Storey, 2009), reduces the potential contribution of its various components (see Bygrave, 2009), and exposes us as educators to criticism from within our institutions (see Hindle, 2007). Alternatively, if we recast the context of entrepreneurial behaviour to be less about the 'big' start-up, and more about achieving personal and team outcomes within the timeframe of the students' studies, we can potentially observe the process in its entirety. This is not to say that EE should not be associated with student business start-ups, because clearly some students will manage to do so. However, just as we do not educate each student in readiness for completing a PhD, neither perhaps should we cast the business start-up as the most desirable outcome of EE.

An alternative outcome being the development of graduates with enterprise knowledge and well developed enterprise-specific attributes that under specific future conditions will assist the pursuit of entrepreneurial activity. At UTAS, the vehicle for such graduate development has been a focus on the attributes of the reasonable adventurer (Heath, 1964). As previously outlined, the aim is to encourage the development of graduates with the capacity to create their own opportunities for satisfaction, be

that via a business start-up or otherwise.

A primary driver of any such capacity is the development of confidence. Hayward et al., (2009) recently acknowledged the importance of an entrepreneur's confidence for initiating start-ups and general resilience. But how are we able to develop such confidence if students are not actually well placed to act with confidence to start a venture on graduation? It would seem we as educators are likely to be faced with a persistent problem that our cohorts arrive just as they have entered adulthood. It is not a matter of admitting defeat, but rather pragmatically acknowledging the ontological reality of enterprise knowledge/skills; that being the likely separation between acquisition of knowledge and its use vis-à-vis actual business start-up.

As previously noted, adopting a critical realist approach to this conundrum provides a new way to consider the value generated by EE. Now it is the students' habits of thought that become the central focus as their alteration and usage under specific conditions can be related to specific forms of entrepreneurial behaviour. The proposed process through which the students' habits of thought are held to be altered has been discussed previously in detail (see Jones, 2007a; 2009b), but essentially, students exposed to high levels of experiential learning activities (incorporating authentic assessment) that combined with various forms of reflective practice create an appropriate settings for an never-ending adjusting of inner relations to outer relations (see Veblen, 1925). When students are given the opportunity to reconcile their individual (or collective) resource profile to the outcomes of their (repeated) entrepreneurial efforts, a learning process is engendered through which confidence is built regarding what is and isn't possible. Let us now consider what evidence has thus far emerged to support the thrust of the above discussion.

EMERGENT FINDINGS

Perhaps the most interesting findings of the author's research into the entrepreneurship program at UTAS is that students understand the ontological challenge they are *trapped in*. As an awareness of this issue has been raised with students and learning activities have been adjusted to bring forward self-reflection of their individual resource profiles across multiple situations, student confidence has clearly increased. The development of a creativity challenge provides an example of how students can learn about enterprise in *real-time*. Students in small groups (of around six) were challenged to turn a profit with a maximum of $5.00 seed capital. The degree of profit and creativity was assessed and students presented their *ventures* to the classmates. Student reflection upon their outcomes was focused around the contribution of their collective resource profile. Given that Aldrich and Martinez (2001) is an essential reading for all students, this application of enterprise knowledge to their actual behaviour has proved highly beneficial. Many of the groups managed to exceed a profit of $500.00, and their success as articulated to their fellow classmates via resource profile explanation has proved an inspiration to other groups to consider how best to apply their own collective resource profiles.

In contrast, requiring students to complete a business plan for an idea that they'll most likely never pursue has not been seen to develop a heighten awareness of the importance of the students' resource profile to their future success. When the students were surveyed as to the actual degree of social, human, and financial capital they held vis-à-vis the idea for their business plan, very few felt that had an adequate resource profile. Looking back over the past cohorts, where students have graduated and followed through with the idea central to their business plan, their resource profile was more than sufficient to ensure success. It is interesting that while few students follow through on their business plan, those that do seem to be very successful in starting and maintaining their business.

A good example was a young student who was set on starting a dance school. She felt worried about how she would compete with her competition (one of whom was her current employer) and finance her start-up. So, at the beginning of the process she felt confident she had the required human and social capital, but felt she could not compete with established firms in the industry. She developed an entry strategy based around not competing head to head with existing competitors and avoiding any major commitments to physical infrastructure. In doing so, she rented community halls by the hour in locations not serviced by the established players. One year on, she has over 300 students and earns a full-time living from the business.

Rather than completing the business plan process in a standard format, students are encouraged to contemplate the *conditions* under which they could create and capture value, and the basis upon which a compelling reason exists for end-users to purchase the product/service. Also, consideration is given

to the conditions under which value could not be created and/or captured. Student feedback consistently confirms their preference to create a document based on an underlying narrative that succinctly explains such a value creation/capture logic. Gone, is the template based exercise within which students work systematically through a standardised process. Once the students resource profile is reconciled to the conditions under which value can be (or not) created and/or captured for a particular idea, a different process of enterprise knowledge acquisition is developed. A process that emboldens the student with confidence vis-à-vis their ability to comprehend the opportunity/risk under consideration. In summary, it would seem that there is likely to be value afforded to both educator and students through increasing our understanding of the *conditions* through which value is created.

The recent findings of Lansdell (2009) provide further evidence of the insights to be gained through adopting a critical realist approach to investigating the value on EE. A past graduate of the entrepreneurship program at UTAS, Lansdell sought to investigate from the perspective of other past graduates (of the UTAS program) what value (if any) they believed was created from studying entrepreneurship, what conditions were related to the development of any such value, under what circumstances did past graduates feel that had benefited from any such value, and lastly, if the students felt that any such value was developed exclusively during the entrepreneurship studies at UTAS.

Using the retroduction process (see Bhaskar, 1979), Lansdell deliberately allowed his personal experiences and observations to guide his investigation. Separate to inductive and deductive forms of reasoning, retroduction is simply *conjecture which arises in the mind*. It has been argued that retroduction "represents an attempt to overcome the pitfalls of purely inductive or deductive research processes" (Sæther, 1998, p. 246). Moreover, Peirce (1908, p. 104) argues that it is a form of reasoning through which "spontaneous conjecture of instinctive reason" provides the intellectual foundations for new ideas to eventually be deductively explicated and/or inductively evaluated. Retroduction is an *initial* thought process through which the provisional plausibility of something is held to be possible. For Peirce, such journeys via retroduction are essential for the development of new ideas from which deductions can be drawn and compared against future observations. Danermark et al., (2001, p. 96) argue that "retroduction is about advancing from one thing ... and arriving at something different".

Lansdell (2009) developed an initial model of graduate student value that contained five components (or dimensions). The components being; educator quality > nature of the learning environment > capacity for individual/group reflection > identifiable student value > factors that enhance/suppress student value. The underlying logic of his postulated model being; 1) the extent that the enterprise educator is committed to a learner-centred approach, has the freedom to be innovative and make mistake and develop open and honest relationships with and between students; 2) a learning environment within which friendship and trust are found, encouraging students to make mistakes and recover through deep and meaningful reflection; 3) evidence of reflective practice that leads to the development of the six attributes and altered behaviours (i.e. habits of thought) between workshops/semesters; 4) evidence of personal gain across a range of social situations from value created (primarily) from EE; and 5) evidence that a low/high resource profile related to the likelihood of engaging in start-up activities.

Lansdell (2009) found strong empirical support for his model. The primary from of value that past graduates (i.e. 2003 to 2008) of the UTAS gained was a form of personal confidence that was claimed to provide individuals a relative gain in various social situations (e.g. work, personal relationships, study, sport etc). However, there was a clear lack of start-up activity where respondents reported low resource profiles. Where high resource profiles were noted, there were high levels of successful start-up activities, though one caveat being that higher resource profiles were also related to age. Importantly, there was sufficient evidence gained to suggest that EE was the primary driver of the personal confidence developed.

The above reported findings associated with the UTAS program are derived from ontological approaches that have their own unique limitations; It would not be expected that another researcher who chose to investigate the same program/students using a different approach, which gathered different data and analysed it differently, to draw the same conclusions. Of critical importance was the need to avoid committing an epistemic fallacy (Sayer, 2000) whereby scientific knowledge is derived only from what is directly given or observable (in the empirical domain). With respect to Lansdell's (2009) use of retroduction, perhaps Danermark et al., (2002, p. 74) best sums up his approach and its limited need for generalization:

"An overall aim of science is to explain events and processes. To explain something implies (from the perspective of critical realism) first describing and conceptualizing the properties and the causal mechanism generating and enabling events, making things happen ... and then describing how different mechanisms manifest themselves under specific conditions. This kind of investigation requires a methodological approach based on abduction and retroduction, and breaking with the so-called Popper-Hempel model of scientific explanations".

Said another way, the Lansdell study has the roots of its findings in the transfactual conditions it has explored. Danermark et al., (2002, p. 77) states that "according to the realist concept of generality, scientific generalizations largely refer to transfactual conditions, to more or less universal preconditions for an object to be what it is." Such comments build on Bhaskar's (1978, p. 227) view that "scientifically significant generality does not lie on the face of the world, but in the hidden essence of things." Also, given the fact that the events under investigation (i.e. creation of student value) had already occurred prior to Lansdell's study, an outcomes based explanation (see Mahoney, 2003) provides a logical approach to learning about the possible presence of generative mechanisms and their transfactual conditions. However, this may potentially reduce the acceptance of the findings by those that evaluate the validity and reliability of research in alternative ways, an obvious research limitation. But perhaps more accurately a research challenge, that of gaining legitimacy for the approach, findings and future research opportunities that arise from his study in the mainstream EE literature.

DISCUSSION AND CONCLUSION

The above discussion hints at a unique positioning of EE in higher education. Other forms of education tend not to claim such a transformative effect on participating students. Whilst EE may not lead directly to increased start-ups, it may (when developed and delivered under specific conditions) lead to the development of unique life-long learning skills that are at the foundation of the attributes that society expects and increasingly demands of our graduates. Whilst this paper has a tight focus on the development of student value at UTAS, it is quite likely that the transfactual conditions related to other EE programs will produce other forms of student value via different but similar processes. It would seem that a rich research opportunity awaits exploration. An opportunity that once substantially addressed would provide an empirical war chest to address the valid concerns of Storey (2009), Bygrave (2009) and Hindle (2007).

The foregoing discussion provides sufficient insights to initially consider a response to these valid concerns. It would seem that Storey (2009) is correct to raise his concerns as to the societal value of EE. Measured from the perspective of business start-ups EE is quite likely to compare poorly to more informal initiatives such as enterprise clubs and societies. However, if we step back from this expectation and consider the actual transformative impact of EE on graduated students (i.e. other intrinsic forms of value, e.g. confidence), then EE it would seem is developing a unique niche in higher education. Even contributing to the development of *entrepreneurial stock* that will in time make a productive (see Baumol, 1990) contribution in society under the right conditions.

Likewise, if we accept that the business plan as a learning activity will contribute positively to some students, but less so for others, we can understand the concerns of Bygrave (2009). Clearly the findings to emerge from the Babson College study promote the importance of the resource profile of each individual student (or team). Perhaps insufficient attention has been paid previously to ensuring a solid connection between the student, their idea, and their potential resource profile. Requiring students to complete a business plan in the absence of an adequate (or attainable) resource profile is perhaps comparable to requiring average athletes to aim for a berth in an Olympic team. Alternatively, allowing students to apply their actual resource profile to a smaller more attainable task during their study may provide better learning and developmental outcomes.

Lastly, the findings of Lansdell (2009) suggest that the concerns of Hindle (2007) can be addressed in ways that few other areas of education attempt. EE is fast becoming a ubiquitous form of education that falls naturally across faculty/discipline boundaries. To satisfy the concerns of Hindle we must establish the various forms of value graduates may receive from EE. Further, by working within disciplines (e.g. science, engineering, etc) there are great opportunities to demonstrate empirically how EE can enhance the careers prospects of graduates in particular those areas.

In summary, this paper has considered the issue of student value, focusing exclusively on the

entrepreneurship program at UTAS. Through considering EE as an ontological challenge, critical issues related to acquisition and use of enterprising knowledge and skills has been discussed. The need to set attainable tasks for our students and to provide the means for deep and meaningful reflection emerge as key challenges to combating the ontological challenges of EE. Perhaps even we as educators need to reconceptualise our role in the promoters of entrepreneurial graduates. Given that by and large we cannot easily influence the composition of our incoming cohorts, and that we cannot control the genuine application of the developed knowledge and skills, perhaps we are the *cacoon* makers. By this I mean we can largely control the environment our students operate within, but cannot guarantee that they will sprout wings and fly upon graduation. If we are able to step back and consider what events must occur within the cacoon for a beautiful butterfly to emerge, perhaps we could restrict our focus to this challenge. At UTAS, we call this process the development of the reasonable adventurer. At other institutions it will be called something else and completed via different means. The critical thing is that we as educators further develop an understanding of our role and purpose in the development and delivery of EE.

REFERENCES

Aldrich, HE & Martinez, MA 2001, 'Many are called, but few are chosen: An evolutionary perspective of the study of entrepreneurship', *Entrepreneurship Theory and Practice*, vol. 25, no. 4, pp. 41-56.

Baumol, William J 1990, 'Entrepreneurship: Productive, unproductive, and destructive", *Journal of Political Economy*, vol. 98, no. 5, pp. 893–921.

Bennett, AL and George, A 2003. *Case Studies and Theory Development in the Social Sciences*, MIT Press, Cambridge.

Bhaskar, R 1975, *A realist theory of science*, Leeds Books, Leeds, UK.

Bhaskar R 1978, *A realist theory of science*, Harvester Press, Hassocks, UK.

Bhaskar, R 1979, *The possibility of naturalism:A philosophical critique of the contemporary human sciences*, Humanities Press, Atlantic Highlands, NJ.

Blundel, R 2007, 'Critical realism: a suitable vehicle for entrepreneurship research', in H Neergaard & JP Ulhøi (eds). *Handbook of qualitative research methods in entrepreneurship*, Edward Elgar, Cheltenham, UK.

Boyer, EL 1990, *Scholarship reconsidered: Priorities of the professoriate*, Jossey-Bass, New York.

Bygrave, W 2009, Keynote presentation at the *6th AGSE International Entrepreneurship Exchange, Adelaide, Australia, February 3-6, 2009.*

Danermark, B, Ekström, M, Jakobsen, L & Karlsson, J 2002, *Explaining society: Critical realism in the social sciences*, Routledge, London.

Dewey, J 1922, *Human nature and conduct: An introduction to social psychology*, Henry Holt and Company, New York.

Dewey, J 1933, *How we think: A restatement of the relation of reflective thinking to the educative process*, D. C. Heath, Boston.

Hayward, MLA, Forster. WR, Sarasvathy, SD & Fredrickson, BL 2009, 'Beyond hubris: How highly confident entrepreneurs rebound to venture again', *Journal of Business Venturing*, In Press.

Hayward, LM 2000, 'Becoming a self-reflective teacher: A meaningful research process'. *Journal of Physical Therapy Education*, vol. 14, no. 1, pp. 21-30.

Heath, R 1964, *The reasonable adventurer*, University of Pittsburgh Press, Pittsburgh.

Hegarty, C & Jones, C 2008, 'Graduate entrepreneurship: more than child's play', *Education + Training*, vol. 50, no. 7, pp. 626-637.

Hindle, K 2007, 'Teaching entrepreneurship at university: From the wrong building to the right philosophy', in PG Greene & MP Rice, *Entrepreneurship Education*, Edward Elgar, Cheltenham, UK.

Jones, C 2009a, 'Enterprise education: Learning through personal experience', *Journal of Industry and Higher Education*, vol. 23, no. 3, pp. 1-8.

Jones, C 2009b, 'A taxonomy of enterprise educators: Preliminary consensus and disagreement', *Proceedings of the 6th AGSE International Entrepreneurship Exchange, Adelaide, Australia, February 3-6, 2009.*

Jones, C 2008, 'Learning through personal experience: Self and group reflection', *Proceedings of the 11th Conference on Experiential Learning, University of technology of Sydney, Sydney, December 8-12, 2008.*

Jones, C 2007, 'Enterprise education: the frustration of a pure contest', *Education + Training*, vol. 49, no. 8/9, pp. 596-604.

Jones, C 2006d, 'Enterprise education: Introducing Whitehead to Gibbs', *Education + Training*, vol. 48, no. 5, pp. 356-367.

Jones, C 2005a, 'Creating employability skills: Modification through interaction', *Journal of Industry and Higher Education*, vol. 19, no. 1, pp. 25-34.

Jones. C & English. J 2004, 'Contemporary approach to entrepreneurship education'. *Education + Training*, vol. 46, no. 8/9, pp. 416-423.

Jones, C 2006b, 'Guided by the philosophy of constructive alignment, directed by the realisation of niche construction', *Proceedings of the 29th HERDSA Conference: Critical Visions*, July 10-13, Perth, Australia.

Jones, C 2006a, 'Stepping back to look inside the entangled bank', *Proceedings of the 3rd AGSE International Entrepreneurship Research Exchange*, February 8-10, Auckland, New Zealand.

Jones, C 2006c, 'Enterprise curriculum: Guided by ghosts, experts and our students' here and now', *Proceedings of the 51st ICSB Conference*, June 18-21, Melbourne, Australia.

Jones, C 2006e, 'Reflections from a not so distant microcosm', *Proceedings of the 7th International Conference on the Dynamics of Strategy: Strategy and Sustainability*, July 10-12, Mahe, Seychelles.

Jones, C 2005b, 'A Darwinian approach to developing enterprise skills', *Proceeding of the, 14th Internationalizing Entrepreneurship Education and Training Conference*, July 10-13, Surrey, UK.

Jones, C 2005c, 'A learner-centred approach to enterprise education', *Proceeding of the, 14th Internationalizing Entrepreneurship Education and Training Conference*, July 10-13, Surrey, UK.

Jones, C 2003, 'Supporting the willing: A contemporary approach to entrepreneurship education', *Proceedings of the 26th ISBA National Small Firms Conference: SMEs in the Knowledge Economy*, November 12-14, Surrey, UK.

Kolb, DA 1984, *Experiential learning: Experience as the source of learning and development*, Prentice-Hall, New Jersey.

Lansdell, M. (2009). *Towards a model of student entrepreneurial value*. Unpublished Honours Dissertation. University of Tasmania.

Mahoney, J 2003, Tentative answers to questions about causal mechanisms, *Proceedings of the American Political Science Association*, August 28, Philadelphia, PA.

Peirce, CS 1908, A neglected argument for the reality of god, *The Hibbert Journal*, vol. 7, no. 1, p. 90-112.

Penaluna. A, Brown. S, Gibson. D, Jones. C, & Penaluna, K 2008', Entrepreneurial education needs entrepreneurial educators: Assessing our performance', *Proceedings of the 31st Institute for Small Business and Entrepreneurship Conference, Belfast, Ireland, November 5-7, 2008.*

Sayer, A 2000, *Realism and social science.* London, Sage.

Schön, D 1983, *The reflective practitioner*, Basic Books, New York.

Schön, D 1987, *Educating the reflective practitioner*, Jossey-Bass, San Francisco.

Scott, D 2000, *Realism and educational research.* Routledge, London.

Sæther, B 1998, 'Retroduction: An alternative research strategy?', *Business Strategy and the Environment*, vol. 7, pp. 245-249.

Storey, D 2009, Personal email for D Storey, 14/7/2009.

Tyler, RW 1949, *Basic principles of curriculum and instruction*, The University of Chicago Press, Chicago.

Veblen, T 1925, *The theory of the leisure class*, George Allen & Unwin, London.

Whitehead, AF 1929, *The aims of education and others essays*, The Free Press, New York.