LUCK'S ROLE IN BUSINESS SUCCESS: WHY IT'S TOO IMPORTANT TO LEAVE TO CHANCE

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Abstract

Luck is a complex concept that has received extensive exposure in the philosophical literature. However, as a variable relating to an individual's professional success, it has seen little exposure in the management literature, and any previous work in that literature has defined luck only in the most general terms. Luck depends on many factors. Moral luck differs from epistemic luck, and each has complex sub-dimensions. These are explained, and in that explanation, four other constructs are shown to relate to luck, namely, attribution theory, locus of control theory, victimization and, finally, professional success. Several research hypotheses are offered, and possible explanatory models are presented relating these constructs.

Purpose

The purpose of this article is to initiate a discussion on the impact and perception of luck on professional success. Previous research involving luck failed to use a rigorous, philosophically based, theoretical definition of luck. Also, previous research lacked attempts to relate behavioral constructs that could naturally flow from a rigorous definition of luck to professional success or luck in business. Luck's sub-dimensions will be defined, and from these definitions, hypotheses will be offered relating luck to several other behavioral constructs that have been well established in the management literature. As a result of these hypotheses, further empirical research on the hypothesized relationships can be initiated.

The Concept of Luck

"Eirik had a wife who was named Thjodhild, and two sons; the one was named Thorstein, and the other Leif. Leif had sailed to Norway, and was there with King Olaf Tryggvason … Once upon a time the king entered into conversation with Leif, and asked him, "Dost thou purpose sailing to Greenland in summer?" Leif answered, "I should wish so to do, if it is your will." The king replied, "I think it may well be so; thou shalt go on my errand, and preach Christianity in Greenland." "And thou shalt carry," said he, "good luck with thee in it." "That can only be," said Leif, "if I carry yours with me." Leif set sail as soon as he was ready. He was tossed about a long time out at sea, and lighted upon lands of

which before he had no expectation. There were fields of wild wheat, and the vine-tree in full growth. There were also the trees which were called maples; and they gathered of all this certain tokens; some trunks so large that they were used in house-building. Leif came upon men who had been shipwrecked, and took them home with him, and gave them sustenance during the winter. Thus did he show his great munificence and his graciousness when he brought Christianity to the land, and saved the shipwrecked crew. He was called Leif the Lucky." *Eirik the Red's Saga*; Chapter 4, circa. 999 (Snell, 2007).

Luck was a recognized, mystical, unexplainable phenomenon even before Lief got lucky over a thousand years ago. It has been as a research topic in the philosophical literature for decades and has received some attention in the management literature. Several papers have related luck to macro-business issues, such as business failures (Elenkov & Fileva, 2006), macro-economic issues and policy (Herrera & Pesavento, 2005; Bean, 2005; DeLong, 2001), management and business performance (Denrell, 2005; Svensson & Wood, 2005; Compte & Postlewaite, 2004; Audas, Barmby & Treble, 2004; Spears, 2003; Knight, Hebl, Foster & Mannix, 2003; Makadok & Barney, 2001), and small business location decisions (Pioch & Byrom, 2004). "The reason free markets work is because they allow people to be lucky" (Taleb, 2007, p. xxi). However, there have been few, if any, attempts to define luck in anything other than general, often convenient terms.

Luck is neither a simple nor singular concept. There are definitional and conditional issues involved in defining and explaining luck. There is moral luck and epistemic luck, which are detailed later. Often, luck gets equated with accident or chance. There is the issue of the necessity of a recipient of the luck and the issue of perspective; one person's luck is another's misfortune. There are also the issues of control and responsibility. Can we be held accountable for something out of our control? Or conversely, should we profit from something for which we are not accountable? How much success is due to luck, and how much to preparation?

Luck has even been offered as a mathematical formula. Latus (2003), in his work on luck, says of Rescher's definition (1995, p. 211-12), "Rescher goes on to suggest we can generate a formula for measuring luck:

> Let E be an event.
> Let pr(E) be the probability of the event occurring.
> Let $\Delta(E)$ be the ''difference that E makes for the interests at stake'' ($\Delta(E)$ will be positive if it is a difference for the better and negative if a difference for the worse); this is the value of E to the recipient.
> Let $\lambda(E)$ be the degree of luck involved in the occurrence of E.
> Then $\lambda(E)=\Delta(E)^{*}[1-pr(E)]$.

As the formula indicates, Rescher views luck as a property of events that varies inversely with the likelihood of the event and proportionally to the value of the event (so long as we leave aside the issue of whether the value is positive or negative). This seems plausible as an initial account of luck. How lucky an event is does seem to be tied to the chance of the event occurring. A person is luckier to win a lottery when her chance is one in a million than she is when her chance

is one in a thousand. So, too, it seems the degree of luck in any given occurrence is tied to the value of that occurrence. A person is luckier to win a million dollars than a thousand. This account gives us a plausible way of saying when an event is good luck and when it is bad luck. That depends on whether the value of the event is positive or negative. Nonetheless, there are many things that need clarifying here. What sort of chance are we talking about, objective or subjective? What sets the value of the event – what you think of it, what you ought to think of it, or some objective measure of its value?" (p. 465).

Latus (2003, p. 468 ff) offers a modification to Rescher's formula that includes a provision for control over the event (E) in question. Latus (2003) makes the degree of luck inversely proportional to both the chance of occurrence and the degree of control the person has over the event.

> Let E be an event.
> Let pr(E) be the probability of the event occurring.
> Let Δ(E) be the value E has to the recipient.
> Let λ(E) be the degree of luck involved in the occurrence of E.
> Let [1-con(E)] is the degree of control a person has over the event (ranges from 0-1; none to total control)
> Then $\lambda(E) = \Delta(E) * [1-pr(E)] * [1-con(E)]$

The degree of control (C) is a central issue in the definition of luck and referred to as the control principle in philosophy. This control principle is a paradigm in the philosophical discussion of luck and has been a topic of debate for many years. It is common for people to attribute a lucky event (E) to chance - being in the right place at the right time or, in the case of bad luck, the wrong place at the wrong time. Harper (1996) has taken the position that luck, chance and accident are overlapping constructs. Statman (1991, p. 146) says, "Good luck occurs when something good happens to Agent P, its occurrence being beyond his control. Similarly, bad luck occurs when something bad happens to Agent P, it occurrence being beyond his control." But Pritchard (2005, p. 126) argues the three are separate, offering the lottery as an example. If you win the lottery, it is luck, since the chances of winning are infinitesimally small, but it is not an accident. To win, you must have purchased a ticket, and that was a deliberate action, not an accident. One of the problems in tying luck and control together is illustrated by Latus (2000, p. 167) with the example of the rising sun. The sun's appearance every morning is completely out of anyone's control, and it is a good thing. But, is there any luck involved?

Zimmerman (in Statman, 1993, p. 219) refines the control explanation by identifying a difference between complete control and restricted control. The former is being able to directly influence the event in question (E) and all the events upon which the event is contingent, while the latter is defined as an event where the agent can act in varying degrees to bring about its occurrence or prevent it. It follows that an occurrence where there was a complete lack of control (LC) would be an event (E) over which the agent had absolutely no influence on either the event or any/all events contingent to it. Restricted control (RC) is a condition where there is some degree of influence (>0%) on the event's (E's) occurrence. Concepcion (2002) explains that this creates a modified view of the control principle. Since no one can have complete control over an event (E) and all the contingencies leading to it, the control principle must be considered in its restricted form. There are some events (E) over which the agent has absolutely no influence, for

example, a deluging rain that floods the river (E) and washes away homes (an outcome (O)). However, the homeowner had a degree of influence with respect to the outcome (O) because she decided to build in the flood plain. The rain event (E) was totally uncontrollable or influenced by the homeowner, but the outcome (O) -- the home's destruction -- was very predictable; not a question of if the outcome (O) would happen, just a matter of when, and, controllable by the homeowner since she could have chosen not to build in the flood plain.

Pritchard (2005) says, "Although there is clearly something intuitive about thinking of luck in terms of the notions of accidentality, chance, or absence of control, there is no straightforward way available for accounting for luck in these terms" (p. 127). He offers a two-part account of luck:

> "L_1: If an event is lucky, then it is an event that occurs in the actual world but which does not occur in a wide class of the nearest possible worlds where the relevant initial conditions for that event are the same as in the actual world" (p. 128).

He refers to the lottery example, saying the lottery winner's success is lucky first because it occurred in the winner's actual world and not in the wider class of worlds (the worlds of the other ticket holders although conditions were the same in all ticket holders' worlds), second, because there was only one winner, and third, everyone else did not win. Had everyone won, then the condition of not occurring in the wider class of worlds would have been violated … the winner had the winning ticket, and everyone else has a non-winning ticket.

This statement about luck also takes in the concept of a discovery, as Pritchard (2005) explains (p. 129). A discovery such as finding buried treasure is luck, since it happens in the actual world of the discoverer, but not in other relevant worlds (only the discoverer finds the treasure; everyone else does not). An issue with L_1 is the width of the possible worlds, meaning the number of other possible players who might win the lottery or who might discover the treasure. "Clearly, the greater the number of possible winners, the greater the attribution would be to luck … as the width of the worlds … recedes then our intuition of luck recedes with it" (Pritchard, 2005, p. 130).

The L_1 definition, says Pritchard (2005, p. 130), "explains why accidentality and lack of control are both closely related to, but not sufficient for, luck. This is because if one has control over a certain event, such that one is able to determine that a certain outcome obtains, then that is naturally understood as implying that in a wide class of relevant nearby possible worlds, that outcome is realized and therefore is not lucky just as (L_1) would predict." He offers the example of the race between the Olympic gold medalist and the rank amateur runner. If the gold medalist wins, it is not luck, but if the amateur wins, it will be due to luck. Given the talent, training and experience of the gold medalist, she has a significant amount of control over the outcome, much more than the amateur since the gold medalist's most probable reason for failure would be to stumble and fall. "Control over the outcome is thus a good determinant of whether luck is involved" (Pritchard, 2005, p. 130). Lacking control over an event may be a determinant of the degree of luck involved, but it does not define luck.

Luck also requires a recipient. Pritchard (2005) offers the landslide example. A landslide is a random event (E), a chance event. Is the event, owing to its random chance occurrence, considered lucky? The answer is that to be considered lucky (or unlucky) the event (E) had to have an outcome (O) which impacted someone or something; an agent (A). Consider two drivers on a mountain road. The landslide occurs (E) just as Driver A (A_1) goes by, and it misses him. However, in the car following him, Driver B, (A_2) is hit by the landslide (O). Was the event, the landslide, a lucky or unlucky, or chance event? Driver A would say he was lucky. Driver B would say he was unlucky. But if there were no recipient of the landslide, then the event (E) was neither lucky nor unlucky, but simply an event. The event (E) was the same in all scenarios, but the outcome (O) and the agent (A_1 or A_2) was different.

An event is just an event, but if it significantly impacts someone, then that person (or those around her) deems the event as lucky or unlucky. This suggests a very subjective aspect to determining what is or is not luck. Driver A's car is smashed (O_1) by the falling rocks and a boulder (E) -- bad luck for her, but good luck for Driver B who was behind A and not smashed by the boulder. Driver B's car was hit, though, by a small pebble that came down with the boulder and chipped B's windshield (O_2). This is bad luck for B, but not nearly as bad a piece of luck as befell A. B's chipped windshield is a piece of bad luck, absolutely, but relative to Driver A, it was a piece of good luck. Had there been no drivers, and the boulder had fallen with no one to witness it, then this would have been merely an event (E) to which no luck, good or bad, would have been attached.

The degree of significance (V for value) is of considerable importance in the subjective evaluation of luck. In the earlier formulas offered by Rescher (1995) and later by Latus (2003), where the determination of luck contained a value component, the greater the value, the greater the attribution to luck. Pritchard (2005) accompanies his L_1 condition with a second condition:
> "L_2: If an event is lucky, then it is an event that is significant to the agent concerned (or would be significant, were the agent to be availed of the relevant facts)" (p. 132).

In summary, luck as a general concept appears to need six things. First is an infrequently occurring event (E). Second, an outcome (O); something happened as a result of the event (E). Third is the necessity of an agent (A); the event (E) produced an outcome (O) that affects someone someway (A). Fourth, the event's (E) outcome (O) on the agent (A) must have been of significant value (V). Fifth is an identified perspective. The degree of significance (V) is often subjectively and relatively determined by someone's perspective (Latus, 2003). "'Winning the lottery is not always what it's cracked up to be,' says Evelyn Adams, who won the New Jersey lottery not just once, but twice (1985, 1986), to the tune of $5.4 million. Today the money is all gone, and Adams lives in a trailer. 'I won the American dream but I lost it, too. It was a very hard fall. It's called rock bottom,' says Adams" (Goodstein, 2007). Sixth is the issue of control (C). Did/could the recipient agent (A) exercise total/some/no degree of control over the occurrence of the event (E) or the outcome (O) resulting from the event?

Moral and Epistemic Luck

There are two rubrics of luck found in the philosophical literature. The first is moral luck, and the second is epistemic luck.

<u>Moral Luck</u>

Moral luck involves some sort of moral judgment of the individual associated with an action even though what is assessed may depend on factors that are totally outside that person's control. Nagel's (1993) definition is cited frequently: "Where a significant aspect of what someone does depends on factors beyond his control, yet we continue to treat him in that respect as an object of moral judgment, it can be called moral luck" (p. 59). The issue of control is central to this definition, but it now includes a statement of moral judgment of the outcome of the event and morality of the agents -- the one causing the event and the one who is the fortunate or unfortunate recipient of the event.

Latus (2005) explains Nagel's concept of moral luck as follows: "We might, for instance, judge a drunk driver who kills a child (call him the *unfortunate driver*) more harshly than one who does not (call him the *fortunate driver*), even if the only significant difference between the two cases is that a child happened to be playing on the road at the wrong point on the unfortunate driver's route home." This, for Nagel, is the problem of moral luck: There is tension between the intuition that a person's moral standing cannot be affected by luck and the possibility that luck plays an important (perhaps even essential) role in determining a person's moral standing. Nagel suggests that the intuition is correct and lies at the heart of the notion of morality, but he also endorses the view that luck will inevitably influence a person's moral standing. This leads him to suspect there is a real paradox in the notion of morality. Is Nagel's worry that luck seems to play a role in determining a person's moral standing or that things beyond that person's control seem to affect her moral standing? The answer is both. The difference between these two ideas is discussed in the literature on moral luck, but not always clearly distinguished. They are represented, on one hand, by the thought that the unfortunate driver is no worse a person than the fortunate driver and, on the other, by the thought that since we cannot plausibly hold the fortunate driver responsible for the death of a child (as no death occurred in his case), neither can we hold the unfortunate driver morally responsible for that death. The second thought has to do with the assigning of individual events to a person. The first involves a more direct assessment of a person and how much credit or discredit -- I will use the term *moral worth* to capture both credit and discredit -- attaches directly to him. We have two questions to consider: (1) can luck make a difference in a person's moral worth and (2) can luck make a difference in what a person is morally responsible for? The problem Nagel points out, however, is that 'ultimately, nothing or almost nothing about what a person does seems to be under his control' (Nagel, 1993, p. 59). That is, everything we do seems at some level to involve luck" (Latus, 2005, p. 5-6). This point is essential to keep in mind when later in this paper, attribution theory and victimization will be introduced as part of the discussion. If at least some portion of every action the agent takes, or some portion of the outcome of the event, is beyond the agent's control, then should or can the agent be held responsible for anything? Should or can the agent be blamed for failure, but rewarded for success? A person fires a rifle at a target. He misses and hits a trophy 10-point buck standing in the bushes behind the target. Should he be applauded for his newly acquired

trophy even though it was not deliberately hunted? If out of season, should he be fined since he had no way of knowing the buck was there but did shoot it illegally out of season?

Nagel (1993, p. 60), cited by Latus (2005, p. 7-8), defines four categories of moral luck:

1. *Constitutive luck* is the luck involved in a person's character, "the kind of person you are …" (Nagel, 1993, p. 60; Nagel took the term from Bernard Williams (1993)). "We pare each act down to its morally essential core, an inner act of pure will be assessed by motive and intention" (Nagel, 1993, p. 63).

2. *Circumstantial luck* is the luck involved in the types of problems and situations a person faces. This is being in the right place at the right time or vice versa.

3. *Causal luck* is the "luck in how one is determined by antecedent circumstances" (Nagle, 1993, p. 60). For example, being born to rich as opposed to poor parents may be luckier due to this antecedent condition rather than anything traceable to any actions.

4. *Resultant luck* is "the luck in the way one's actions and projects turn out" (Nagle, 1993, p. 60). Moral credit or blame depends on the result of one's actions. In the story of Apelles the Painter, Sextus Empiricus relates how Apelles was trying to depict the foam from a horse's mouth. After unsatisfactorily trying and retrying very hard with his brush, in desperation he threw a sponge at the painting. The sponge hit exactly on the horse's mouth and the resultant imprint was a perfect depiction of the foam he had been diligently trying to create through traditional techniques (Taleb, 2007, p. 204).

Latus (2005) concludes that we are left with the moral luck trap -- that luck should not make a moral difference in determining a person's moral worth and should not affect what a person is morally responsible for, but the fact is, it does. "The problem of moral luck is that it tends to work better for some sorts of luck than others" (Latus, 2005, p. 10).

The final aspect of moral luck is what is called the rational justification of actions (Williams, 1981, p. 22). Rational justification of actions means the evaluation of the event, the individual, her/his decision and the determination of morality is based on the outcome. Painter Paul Gauguin abandoned his wife and children to pursue a career in painting in Tahiti, something he could not, in advance, be sure would be successful. Did Gauguin make the right or wrong decision? Was he morally wrong and unjustified to abandon his family? As Williams (1981) explains, if something had happened to Gauguin that would have prevented him from painting at all, or, that he had turned out to be a failure as a painter, then his decision would have been judged to be morally wrong. However, luck played a part in his project's success, because his paintings found favor with customers. Luck also played a part in his personal success in that he did not suffer any physical setbacks preventing him from painting. His project was successful and he was a success, so leaving his family was rationally justified. The luck involved in his success contributed to a positive moral evaluation of his decision. The rational justification argument suggests moral evaluation often separates the event and the outcome. While the event

may be morally questionable (Gauguin abandoning his family to pursue something far from a sure thing), the outcome (his arguably meteoric success) softens the moral judgment of him and his decision.

The concept of moral luck is not without its detractors. The *Stanford Encyclopedia of Philosophy* states, "An important tool for those who wish to explain away the existence of moral luck is what Latus (2000) calls the *epistemic argument* (see Richards, Rescher, Rosebury, and Thomson). To see how it goes, let us begin by focusing on resultant luck. Why do we feel differently about the successful and unsuccessful murderers? Because, according to the epistemic argument, we rarely know [in advance] exactly what a person's intentions are or the strength of her commitment to a course of action. One (admittedly fallible) indicator is whether she succeeds or not. In particular, if someone succeeds, there is some evidence that the person was seriously committed to carrying out a fully formed plan. The same evidence is not usually available when the plan is not carried out. Thus, rather than indicating our commitment to cases of resultant moral luck, our differential treatment of successful and unsuccessful murderers indicates our different epistemic situations with respect to each. The epistemic argument can be extended to circumstantial luck. Richards argues that we judge people for what they would have done, but that what they *do* is often our strongest evidence for what they would have done. As a result, given our limited knowledge, we might not be entitled to treat the counterpart in the same way … even though they are equally morally deserving of such treatment (Richards, 1986, p. 174 ff). Thus, circumstantial luck, like resultant luck, affects the basis available to us when we judge agents, but does not affect what those agents deserve … we mistakenly infer moral luck from legal luck. 'While there might be good reasons for the law to treat people differently even if what they do depends on factors beyond their control, we (understandably) make the mistaken inference that the law directly reflects correct moral assessment in such cases," (Nelkin, 2004).

However, some reject this standard, citing the control principle as the basis for rejection. "A basic compatibilist strategy is to argue that agents can have control over their actions in the sense required for freedom and/or responsibility even if they do not control the causal determinants of those actions. For example, if one acts with the ability to act in accordance with good reasons (Wolf, 1990) or if one acts with guidance control, which consists in part of acting on a reason-responsive mechanism for which one has taken responsibility (Fischer & Ravizza, 1998), one can be responsible for one's actions. The key here is to distinguish among different types of factors over which one has no control. If one's actions are caused by factors that one does not control and that prevent one from having or exercising certain capacities, then one is not responsible. However, if one's actions are caused by factors that one does not control, but that do allow one to have and exercise the relevant capacities, then one can be in control of one's actions in the relevant sense, and so responsible for one's actions. According to Walker (1991), the control principle is far from obvious, and we would not want to live in a world in which it held sway. The argument appears to rest on the idea that without moral luck, we would lack several virtues that allow us to help each other in most essential ways. Our very reactions to moral luck can be virtuous. For example, by accepting that our responsibilities outrun control, we are able to display the virtue of dependability by accepting that we will be there for our friends, even if their needs are not in our control. In contrast, pure agents who are only responsible for what they control 'may not be depended on, much less morally required, to assume a share of the ongoing and massive human work of caring, healing, restoring, and cleaning-up on which each separate

life and the collective one depend (Walker, 1991, p. 247)'," (Nelkin, 2004). Concepcion (2002) succinctly explains the paradox of Nagel's moral luck and the control argument, saying, "If control is necessary for individual moral responsibility, as Nagel admits, and there is ubiquitous luck, as Nagel also admits, then individual moral responsibility is impossible. Nagel thinks that individual responsibility is possible, and hence he regards the situation as a paradox" (p. 456). This will be an important factor later in this paper when victimization is considered.

<center>Epistemic Luck</center>

Epistemic luck is the "putative situation in which an agent gains knowledge even though that knowledge has come about in a way that has … involved luck in some significant measure" (Pritchard, 2004, p. 193). The epistemic argument is more focused on the process of gaining knowledge and of opportunity than moral judgments. Concepcion (2002) uses a quote from Nicholas Rescher (in Statman, 1993), saying "The difference between the would-be thief who lacks opportunity [because of luck] and his cousin who [because of luck] gets and seizes [his ill-gotten gains] is not one of moral condition, which by hypothesis is the same for both sides; their moral record may differ but their moral standing does not. The difference at issue is not moral, but merely epistemic" (Concepcion, 2002, p. 457). Both cousins are morally wrong in that they are both thieves and have made an immoral decision, but they differ in that the successful thief was lucky enough to find no one at home, while the unsuccessful thief, though as much a thief in his heart as his cousin, found the same targeted house to be occupied the night before. One was lucky, the other was not, yet they are both of the same immoral fiber, both morally wrong in their decisions. From this perspective, a person's behaviors may be deemed as a reflection of her attitudes, knowledge and beliefs which, according to this argument, are gained at least in part through luck. The epistemic sub-dimensions Pritchard (2005) presents based on Unger (1968) are:

1. *Content epistemic luck* is the existence of a known fact, e.g., a witness sees an auto accident. She knows this is an auto accident and not some stunt driver playing out a movie scene, for example. It is luck that she knows the first fact, the proposition is true.

2. *Capacity epistemic luck* is a person's capability of knowledge. Some people have greater capacity than others, in some part due to genetic luck … identical twins may not have the same capacity for knowledge even though they are genetically identical and raised in the same environment. It is luck that a person has a greater capacity, luck in that a person's capacity is genetically determined and beyond his/her control.

3. *Evidential epistemic luck* is about the evidence supporting a person's belief or position. It is in part due to luck that a person acquires evidence that supports her/his belief. It is luck that there exists supportive evidence.

4. *Doxastic epistemic luck* is due in part to luck that the person believes in her/his position. This does not mean it is right or wrong, but merely that the person believes in the position she has taken. It is luck that our observer has a belief system that allows her to support the proposition.

Pritchard (2005) advances the sub-dimensions of epistemic luck by adding what he terms veritic epistemic luck and reflective epistemic luck.

5. *Veritic epistemic luck* is a matter of luck that the agent's belief is true.

Pritchard (2005, p. 146) offers the stopped-clock example adapted from Bertrand Russell (1948, p. 170-1). A person comes down the stairs and looks at the clock on the wall that reads 8:22 and believes this is the correct time. Unbeknown to her, it is *actually* 8:22, but also unbeknownst to her, the clock had stopped exactly 12 hours earlier. Her knowledge (for which she has no reason at this point to believe otherwise) is accurate and gained by observing the clock which as far as she knows and in all her past experience, is and has always been accurate. It was only by luck she gained this true belief because she happened to look at the stopped clock showing 8:22 when, in fact, it was actually 8:22. Had she looked at the clock anytime sooner or later, she would have not gained knowledge of the correct time, but found that her timepiece was not working. Here then is the example of veritic epistemic luck, knowledge gained through luck that happened to be accurate … even a stopped clock is accurate twice a day.

6. *Reflective epistemic luck* is when it is a matter of luck that an agent's belief is true and known only by reflection (Pritchard, 2005, p. 175). "… it should be clear that the range of nearby possible worlds that are relevant will be restricted in terms of the way in which the agent *believes* she formed her belief in the actual world, rather than (as with veritic epistemic luck) in terms of the way she in fact formed her belief."

To understand reflective epistemic luck, let's look at two golfers. The first is a pro and has been playing for many years and has won many major tournaments. The second is a person who has never golfed before. This twosome starts playing. The pro hits 10 shots, all going where she wants them. The novice hits 10 shots and all match the pro golfer's shots for accuracy and distance. At the end of three holes, their scores are identical. From the pro's perspective, the novice is incredibly lucky. From the novice's perspective, based upon her reflection of the last 10 shots, she is as good as the pro. She has no other *worlds* for comparison; she lacks the reflective ability to say these were just 10 lucky shots. For her and from her perspective, there was no luck involved at all, golf is a pretty easy game! A summary of the sub-dimensions and issues of luck are shown in Table 1.

Behavioral Relationships and Luck

The extensive presentation of the issues surrounding luck brings into question several well established behavioral management theories and their relationships to luck. These are: (1) attribution theory, (2) locus of control, (3) victimization, and (4) success.

<u>Attribution Theory</u>

Since 1972, much of the work on attributions comes from Weiner et al.'s (1972) explanation that attributions are based on ability, effort, task difficulty, and luck. This is a putative situation where success is attributed to one's own personal character, hard work, preparation, etc., while

failure is attributed to situational factors outside one's control, what Taleb (2007) calls an asymmetry of perception (p. 152). He provides the anecdote that 94 percent of Swedes believe they are in the top 50 percent of Swedish drivers and 84 percent of Frenchmen believe their love-making abilities put them in the top half of French lovers (Taleb, p. 153).

The purpose of such attributions is to maintain self-esteem, "a primary motivation in human behavior and cognitions … which result in self-serving explanations of behavior," (Elliott, 1989, p. 1016). Elliott (1989) found unsuccessful students attributed the achievement of successful students not to a lack of luck on their part, but rather to more luck on the part of the successful students. "There is also ample evidence that individuals have a distorted recollection of past

Table 1. Summary of Sub-dimensions of Luck

Necessary Conditions	1. An event (E) 2. Agent (A) 3. Outcome (O) 4. Value (V) 5. Perspective (P) 6. Control (C)	Issues: Rational justification Moral evaluation Control principle Responsibility vs. control
Moral Luck	1. Constitutive luck 2. Circumstantial luck 3. Causal luck 4. Resultant luck	Issues: Luck seen in terms of external conditions and circumstances.
Epistemic Luck	1. Content epistemic luck 2. Capacity epistemic luck 3. Evidential epistemic luck 4. Doxastic epistemic luck 5. Veritic epistemic luck 6. Reflective epistemic luck	Issues: Luck seen in terms of having knowledge/gaining knowledge and making decisions.

events and distorted attributions of the causes of success or failure. Recollections of good events or successes are typically easier than recollections of bad ones or failures. Successes tend to be attributed to intrinsic aptitudes or effort, while failures are attributed to bad luck. In addition, these attributions are often reversed when judging the performance of others" (Compte & Postlewaite, 2004, p. 1536). This is reflective of the moral luck definition centering on the control principle and the notion of an inventory of luck everyone possesses. Luck being something some people just have more of and other people run out of.

This leads to the following:

> H$_1$: Unsuccessful agents will favor the moral luck arguments relative to lacking control, accident, and/or chance than will successful agents. Stated as a null hypothesis, regardless of success, the moral luck argument relative to control will be claimed equally by successful and unsuccessful agents.

Locus of Control (LOC)

Locus of control defines people's perception of control of their lives. The term goes back to the 1950s, with the current view popularized by Rotter (1966). He categorized people as *internals* or *externals.* Internals are people who feel they themselves are in control and will attribute their behaviors and success to their own efforts and volition. Externals are the opposite, feeling they are not in control and external forces strongly influence their behaviors. They are more likely to attribute lack of success on some external factors or bad luck. When comparing internals and externals, empirical results have shown the following:

1. Rotter (1966) believed that internals tend to be higher in achievement motivation than externals. However, empirical findings have been ambiguous here.

2. Internals are better able to resist coercion. This relates to higher outer-directedness of externals. They have a more developed moral sense, more altruism, helping behaviors, political participation and business ethics. Internals have been found to have advanced moral reasoning, a higher degree of cognitive moral development, less unethical behavior and a higher degree of self-determination and self-confidence (Cherry, 2006, citing numerous publications).

3. Locus of control appears to shift with advancing age. Internality appears to increase until middle age, then decreases with age (Aldwin & Gilmer, 2004).

4. Internals are more likely to change their jobs while externals will tend to talk about changing (Allen, Weeks & Moffat, 2005; cited in Maltby, Day & Macaskill, 2007).

5. Education and income increase the belief that one controls one's own life.

Given the nature of locus of control and the research findings:

> H_2: Externals will attribute success or lack of success to moral luck and lack of control of success/failure creating factors. Internals will attribute their success far less to luck.

> H_3: Internals will be more inclined to subscribe to the concept of epistemic luck rather than moral luck. Stated as a null hypothesis, there will be difference in luck attributions between internals and externals.

Victimization

Victimization is most often dealt with in the management literature in the context of violence or harassment and as such would be an outcome of an action. Victimization can be a perception rather than an outcome (Aquino, Grover, Bradfield & Allen, 1999). A victim does not have to be the recipient of a violent act, but can be someone who is adversely affected by circumstance or someone who experiences misfortune and feels helpless to remedy it.[1] Such alternative definitions fit the descriptions associated with the control principle in moral luck and learned

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[1] (http://encarta.msn.com/dictionary_1861734067/victim.html).

helplessness construct from attribution theory. "Fundamentally, people who experience higher levels of self-determination may be more motivated to exercise control over their environments because they believe themselves to have a more internal locus of causality. They may therefore be better equipped to control when and how they interact with coworkers and with whom they interact, which can lead them to avoid encounters with potential perpetrators of aggressive action. When people perceive that they can exercise control over their environments, they may also be more assertive in defending themselves against mistreatment. In contrast, people who are low in self-determination feel powerless and consequently may assume the role of helpless victims. If an employee behaves in a powerless manner suggesting that he or she has little control over his or her environment, potential aggressors might perceive the employee as vulnerable to mistreatment" (Aquino, et al., 1999, p. 1998). Aquino et al.'s (1999) empirical work did, in fact, find people with feelings of low self-determination were more likely to perceive themselves as victims.

Zur (1994) relates victimization and locus of control saying, "The victim's locus of control is likely to be external and stable. An external locus of control orientation is a belief that what happens to a person is contingent on events outside of that person's control rather than on what one does. Stable, in this context, refers to the consistency of the out-of-control feelings of the victim vs. the belief that the outcome of events is due to luck or random events (Rotter, 1971). Consistent with the above characteristics, victims are likely to attribute the outcome of their behavior to situational or external forces rather than to dispositional forces within themselves. Low self-esteem, a sense of shame, guilt, helplessness, hopelessness, and an internal sense of 'badness' are integral elements in the psychology of those who perceive themselves as victims. According to social exchange theory (Worchel, 1984) and behavioral psychology, victims' actions, apparently and unexpectedly, provide enough rewards and benefits to sustain the victim type of behavior … They may include the right to empathy and pity, the lack of responsibility and accountability, righteousness, or even relief as the bad self is punished," (Zur, p. 28). It is easy to see in Zur's explanation of victimhood, that if one has a victim's mentality, then s/he (1) is not responsible for what happens, (2) is always morally right, (3) is not accountable, (4) is entitled to sympathy, and (5) is justified in feeling moral indignation for being wronged (Zur, http://www.drozur.com/victimhood.html).

Relating this to luck, if a person subscribes to the control principle and believes she cannot be held responsible for events outside her control or cannot be held accountable for her character (constitive luck), and if attribution theory is the correct basis for people attributing success to internal characteristics but failures to external circumstances, then that person would attribute a negative outcome to bad luck and thus feel she is not responsible, is morally right in claiming victim status, should be seen as a sympathetic/tragic figure, and would feel indignant for being accused of initiating a behavior that would result in a negative outcome. Latus (2003) says, "We should give up the idea that there is no luck involved in the kind of people we are, but that does not preclude holding people responsible for what they do," (p. 473). The stellaawards.com Web site publishes an annual list of legal actions and is named after Stella Liebeck, who in 1992, at age 79, spilled a hot cup of McDonald's coffee onto her lap and was awarded $2.9 million in damages in a New Mexico court, which upheld her claim that she was a victim of McDonald's negligence. This brief review of the victimization concept leads to the following:

H$_4$: There is a direct relationship between belief in luck, external LOC and a victim mentality.

H$_{4a}$: There is a direct relationship between victim mentality and external attributions to the outcomes of one's actions.

If an agent (A) has a victim mentality and therefore believes the conditions leading to her actions are externally mediated and out of her control, then this would seem to infer she would attribute a significant degree of her lot in life to good or bad luck. External attributions leading to failures would point to bad luck or having less luck than her more successful colleagues while success would be attributed to good luck or having more luck than her less-successful colleagues. Regardless of the person's orientation (internal or external) and her attributions, one key definitional element associated with luck was that the outcome (O) resulting from an event (E) must have some sort of value (V) assigned to it by someone. The value assignment and the assignor could be the initiator of the event, the recipient of the outcome, one in the same for both, or, a second-party observer, any of which makes an evaluation of success; the success of the event and/or the success of the outcome (keeping in mind success' evil twin, failure). Is success as complicated a construct as luck has proven to be? Does time affect the evaluation of an event's outcome with respect to the share of luck perceived to be involved when it happened as opposed to the degree of luck upon reflection on the event or outcome; does time alter the perception of luck's contribution to success and does time alter the valuation of success?

<div align="center">Success</div>

Consideration of luck in personal, professional and business success is not new. In the strategic management literature, Hill & Jones (2004, p. 104) reference earlier arguments (Alchian, 1950) of the critical role that luck plays in determining competitive success and failure. The authors (Hill & Jones, 2004) further state, "Managers that strive to formulate and implement strategies that lead to competitive advantage are more likely to be lucky" (p. 105). Furthermore, the authors, while believing that sustained excellence is not likely without a conscious strategy, accept that "luck may indeed play a role in success, and managers must always exploit a lucky break" (p. 105). Often, success is defined relative to career success, financial success, success in sales, success in life, etc. In an empirical study of futures traders, Hartzmark (1991) determined that it was pure luck that determined the trader's success (see also the narrative offering the same conclusion by Taleb (2007, p.105-106)). Niles (1985) reported the results of research on students, finding " … 43.5 percent of the respondents felt luck could enhance the effects of effort. The attributions were not without notable differences, namely, lower socioeconomic status students tended to attribute a successful/failed outcome to luck alone, while 55.0 percent of the higher socioeconomic status children attributed the outcome to effort only and " … would not admit to the effects of chance. The lower socioeconomic status/lower achievement children (25 percent) were more willing to accept such explanations" (p. 402).

There have been numerous reports citing gender differences in attributions of career success to luck. Women attribute success more to luck than their male counterparts (Russo, Kelly & Deacon, 1991; Forsterling, Preikschas & Agthe, 2007; O'Neill, 2007). Gaskill (1991, p. 167) found women in upper retail management " … placed more importance on factors related to

personal ambition and abilities while mid-level Ss placed more importance on opportunity and luck in their success."

Ma (2002) presented arguments relating competitive advantage to luck, but tried to build the argument that what is often attributed to luck is more the result of unrecognized systemic and visionary effort and judicial environmental scanning, which results in greater recognition of opportunities. As mentioned earlier, much of the research trying to relate success and luck has been based on Weiner et al.'s (1972) explanation that attributions to success have been based on ability, effort, task difficulty and luck.

Finally, every gambler knows of beginner's luck, which has been claimed to be empirically valid (Taleb, 2007, p. 109). In all this luck-success relationship research, what has been lacking is a rigorous approach to the definition of luck and the different forms of luck as described earlier. The following hypothesis is based on the above literature:

> H_5: Demographic variables (age, gender, income, education, career stage, culture) will be directly related to attributions of luck for success/failure. Stated as the null hypothesis, there will be no differences in attributions with respect to demographic variables.

> H_{5a}: Demographic variables will be directly related to a categorization of externals rather than internals. Stated as the null hypothesis, demographic variables will not significantly distinguish the two.

> H_{5b}: Position in the company, i.e., career success and advancement will be inversely related to luck. Stated as the null hypothesis, there should be no differences in perceptions of luck as an explanation of success based on demographic factors.

Possible Explanatory Models

The question at this point is whether there is one explanation or several possible explanations for the relationships between the variables identified in this paper. Since the past business-related and individual success-related research involving luck has not applied the rigorous sub-dimensionalizing of luck as suggested here, there are no models to fall back on as precedents.

There are several possible models suggested in Figure 1. One possibility is that luck, following either the moral or epistemic definitions, is directly related to success and the other variables suggested above are not significant. Pursuing this model could lead to supporting one line of the philosophical argument or the other and could make a significant contribution, since the philosophical literature is generally silent on empirical attempts to identify which form of luck is the more valid and which form of luck, if valid, is the one that is identified most with success.

The second model suggests moral and epistemic luck are linked and directly relate to success. This would add support in the philosophical literature to the authors who have suggested the world is not a world of either/or, but rather some place on the continuum between the two. The third model is a variation of the second in that there could be a common element(s) shared by

moral and epistemic luck and this common element(s) is significantly related to professional success. This hybrid variable could have more explanatory power than a completely linked model might have. The next possibility is to treat moral luck and epistemic luck as separate concepts, but the demographic, LOC and victimization variables could act as moderators or mediators in the relationship with professional success. Pursuing this line of research could be particularly intriguing because the focus would shift to searching for demographic or attitudinal factors that could be common, or could be unique, to explaining either of the luck-success sub-models. The final option is to treat the two forms of luck as linked variables. This would suggest a significant interaction term(s) between the two.

Figure 1. Possible Explanatory Models

Model	Explanation
Moral Luck ⟶ Success Epistemic Luck ⟶ Success	Completely independent causal models; other variables not significant
Moral Luck ⟍ ┊ ⟶ Success Epistemic Luck ⟋	Linked causal model; other variables not significant
Moral Luck ⇕ Moral/Epistemic ⟶ Success ⇕ Epistemic Luck	Only specified common elements are causes; other variables not significant
Moral Luck ⟶ [Mod/Med] ⟶ Success Epistemic Luck ⟶ [Mod/Med] ⟶ Success	The relationship between luck, in either form, is moderated or mediated by demographic variables and/or locus of control, and/or the victimization/helplessness variable(s).
Moral Luck ⟍ ⇕ ⟍ Moral/Epistemic ⟶ Success ⇕ ⟋ Epistemic Luck ⟋	Linked causal model with specified common elements; other variables not significant

Discussion and Further Research

The purpose of this paper was to initiate a discussion on the relationship between luck and professional success. The business literature has offered numerous research findings on variables that explain performance, and one could argue that performance is a surrogate for success. In all these, however, luck has not been considered to any discernable degree outside its general definition and use by Weiner et al. (1972) and those who followed using their instrument. When luck has been considered, it has been dealt with in generality, meaning, the authors have assumed their readers know what luck is. Some have defined luck according to their own perception or in only a limited sense. As the philosophical literature presented earlier shows, the concept of luck is very complex.

One of the underlying motivations for this paper was to investigate any literature that might offer up a specific definition of just what luck is, then suggest relationships to other variables that could be considered in a business-related context. Years ago, Justice William O. Douglas was claimed to have said he could not define pornography, but he knew it when he saw it. Luck as a behavioral or attitudinal variable may be in much the same situation; everyone has an intuitive perception of what it is, they just have a difficult time trying to define it in universally applicable terms. As a management research variable, it has not received rigorous definition-related investigation since "we all seem to know what it is."

Researching the literature yielded a significant body of work in philosophy, where the debate over what luck is has been going on for years. The purpose here, then, was an attempt to shed light on this ubiquitous notion of luck and offer the idea that if a rigorous approach was taken when defining luck, there could be a much deeper understanding between the various forms of luck, the sub-dimensions of luck and how people perceive luck affecting their professional success.

From a managerial perspective, there are moral and management issues very relevant to several dimensions of luck and the variables discussed earlier. For example, if a salesperson's declining sales are the result of what she might claim is bad luck, then she should not be held accountable for her failure as she was a victim since what happened was out of her control? If the situation reverses and sales increase, how much of the increase is due to good luck? Following the line of reasoning, if she should not be held responsible for the sales decline, owing to bad luck, should she be rewarded for the sales increase? If attribution theory is accurate, she will claim this increase to be a direct result of her efforts and not just good luck. Looking at another sales-related example, are there some employees who are just luckier than others? Or, do they manufacture their luck? Is it just luck that they are in right place at the right time talking to the right people about the right products, or is it the result of planning and preparation? What about hiring people who are strong believers in luck? They may well be fatalistic and as such feel they do not have to take responsibility for their actions and subsequent failures. They will write off such failures to externalities and feel no motivation to re-examine their behaviors for possible explanations, or take corrective actions to avoid the problem in the future.

Trying to apply empirical approaches to test the relationships suggested in this paper present challenges. It will require both qualitative and/or quantitative research techniques. In some

cases, measurement instruments will need creating. Creating or modifying existing instruments presents its own set of methodological challenges. There are numerous issues related to definitions, not only of luck, but of measures of success, which are too numerous to detail here.

By bringing together the foundational work from philosophy, which has lacked empirical testing in business-related environments, and the limited business-related research, which has lacked a rigorous approach to just what luck is, advances can be made in the understanding of luck as it relates to people's perceptions, attitudes and behaviors. "Capitalism is, among other things, the revitalization of the world thanks to the opportunity to by lucky. Luck is the grand equalizer, because almost everyone can benefit from it … Luck both made and unmade Carthage; it both made and unmade Rome" (Taleb, 2007, p. 232).

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