2007

The appeal of the underdog: Definition of the construct and implications for the self

Nadav Goldschmied
University of South Florida

The Appeal of the Underdog:

Definition of the Construct and Implications for the Self

by

Nadav Goldschmied

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
Department of Psychology
College of Arts and Sciences
University of South Florida

Major Professor: Joseph A. Vandello, Ph.D.
Jamie Goldenberg, Ph.D.
Jonathan Rottenberg, Ph.D.
Kristen Salomon, Ph.D.
Kevin Thompson, Ph.D.

Date of Approval:
June 21, 2007

Keywords: looming success, disadvantage, schadenfreude

Table of Contents

List of Tables

List of Figures

The Appeal of the Underdog: Definition of the Construct and Implications for the Self

Nadav Goldschmied

ABSTRACT

From politics to sports to business, people are quick to categorize those at a considerable competitive disadvantage as "underdogs." Moreover, there is ample support that most unattached observers do not hesitate to align themselves with underdogs, a phenomenon termed "the underdog effect." While most dictionary definitions state that underdogs are "especially expected to lose," the present investigation argues that people often attribute optimistic qualities to underdogs and the exceeding of expectations. A series of studies was conducted to examine the lay-person definition of what an *underdog* means, as well as what motivations may play a role in the underdog effect. Study 1 investigated people's spontaneous definitions of underdogs by exploring the semantic network of the underdog construct through the use of the discrete associations method. Study 2 explored the hypothesized looming success component of being an underdog by asking participants to evaluate future success of underdogs vs. disadvantaged entities. Study 3 utilized the false recognition paradigm to explore schematic memory of success associated with the underdog construct, while the last study assessed whether people do truly support those at a competitive disadvantage or merely root against the favorite, as well as explored the possible role of the self in the underdog effect. Support for the looming success of the underdog was found in the first two studies while the last study demonstrated that strong self-identification with the underdog was highly correlated with

support for it. Overall, the results of the current study suggest that people in American society believe that underdogs are unique exemplars which are expected to do significantly better than the initial expectations.

Introduction

The Appeal of the Underdog

History is filled with enduring stories of rivalries between entities with noticeable disparities of power or prestige, ranging from the paragon biblical story of David and Goliath, through mythological Troy facing the almighty Greeks, to modern day geopolitical examples pitting the USA as the lone superpower against much less powerful rivals. Sometimes the lopsided struggle involves groups (for example, the USA hockey team versus the mighty Russians in the "miracle on ice"), while at other times the rivalry is between individuals (for example, Truman versus Dewey's famous come from behind victory of the presidency in 1948).

When such disparities of power or expectations for success exist, one side is often labeled as an "underdog" (while its opposing party is termed a favorite, frontrunner, or top dog). Underdogs are present throughout many human endeavors, ranging from territorial disputes between tribes or states, to such domains as politics, sports, or the business world in which competition is hailed as the source of economic growth. Underdogs are often depicted as heroes, such as Rocky Balboa in the movie "Rocky" or a horse named Seabiscuit who won the Kentucky Derby despite insurmountable odds.

The term underdog first surfaced in the 19th century. The word originated from dog fighting, a common practice in those days, in which the losing dog was declared the

"under dog" because it would usually submit, rolling over on its back, allowing the stronger dog to tower over him. The weaker dog was literally *under* the stronger one. One should note that being an underdog, based on the present day definition, exists for the most part at the point in time before an outcome is determined.

The Merriam-Webster dictionary lists two definitions of an underdog: (1) a loser or predicted loser in a struggle or contest; and (2) a victim of injustice or persecution (Merriam Webster, 1994). Note that the second characterization raises the issue of justice in determining who qualifies to be labeled as an underdog.

The present dissertation outlines four studies that were designed to explore how people understand the underdog concept, as well as to examine possible motivations for underdog support. The specific goals of this project were threefold: First, it aimed to clarify the meaning of the underdog concept. Specifically, it is proposed that the lay person's definition of the underdog differed from the dictionary definition. Primarily, it is hypothesized that, due to repeated exposure to selected exemplars of triumphant underdogs depicted in movies, literature, politics, and sport, individuals facing the underdog-top dog situation tend to assume the underdog's looming success while discounting objectively lower base rate odds for its success. Secondly, this dissertation attempted to tease apart whether, or under what conditions, underdogs are supported versus top dogs are rooted against – a phenomenon known as *schadenfreude*. It was hypothesized that the relative status of an entity, and particularly its deviation from the average, dictates people's attitudes toward it. Thus, when scarcity of resources (in

comparison to the average) is made salient, people might be drawn to sympathize with underdogs; conversely, when abundance of resources (in comparison to the average) is made salient, people will tend to root against top dogs. To test this hypothesis, attentional focus was measured by testing memory for details of events associated with the competing entities. Thirdly, a final aim of this project was to explore the implications of underdog support for the self. It was hypothesized that underdogs are supported in part because their success gives people hope and implies that outcomes (particularly negative outcomes) are not fixed or predetermined.

In the context of this investigation, underdog support was examined only in individuals who neither have prior affiliation with any of the competing entities (be it the underdog or the top dog), nor possess detailed or specific knowledge about the competing entities prior to the experimental encounter with them. Otherwise, if any prior affiliation or attachment does exist, the question becomes of one of fan-ship, and although the underdog support is not expected to override the fan's affiliation, it is beyond the scope of the present work to examine this assertion. Additionally, the current investigation is based on the assumption that there is a direct, zero sum competition between the underdog and the favorite: when one prevails the other loses and vice versa. Lastly, a resolution of the competition is in near sight and is conclusive. The outcome can be the final score of a sports game, adjudication by a court, a winning bid for a business tender, or a win in a political race.

Past Research on Underdogs

Despite the ubiquity of underdogs, research examining people's reactions to them has been scant. On the surface, based on social identity theory (Tajfel, 1978), one might predict that unaffiliated observers, who in essence get to choose sides, would align themselves with the favorite, as its chances to prevail are higher. The theory asserts that group membership creates in-group self-categorization and enhancement in ways that favor the in-group at the expense of the out-group. The "minimal group" studies of Turner and Tajfel (1986) demonstrated that the mere act of individuals categorizing themselves as group members was sufficient to lead them to display in-group favoritism. After being categorized by group membership, individuals seek to achieve positive self-esteem by positively differentiating their in-group from a comparison out-group on some valued dimension. Thus, if the only information about a group or an entity available for third party observers is expectations for success and one assumes that success is a cherished attribute, then the unattached observers should support the favorite (i.e., the one with the history and likelihood of success), rather than the "underdog."

However, contrary to the intuitive notion that non-affiliated observers should support the stronger side, there is some limited evidence indicating that individuals tend to support underdogs rather than dominant entities. For instance, Frazier and Snyder (1991) demonstrated that students exposed to short scenarios describing a competition between a hypothetical, heavily favored team and a lesser counterpart in a seven-game playoff series (with no other information available) showed a marked favoritism (88.1%)

towards the underdog. After the participants had made their judgment, they were told that the heavily favored team lost the first three consecutive games and thus was on the brink of elimination from the series. Faced with this new scenario, in which the roles have been inversed, about half of the participants (49 out of the 99 people who favored the original underdog) changed their allegiances and preferred that the original underdog (i.e., the less capable team in the original scenario) lose the next game, a possible testament to the transient nature of who qualifies as an underdog. Moreover, when presented with a third and last scenario in which the two teams were tied at three games, each going to the last deciding match in the series, 37 out of 44 participants changed their allegiances once again and expressed their hope for a win for the original underdog, demonstrating once again how fickle the underdog attribution process is.

Vandello, Goldschmied and Richards (in press) capitalized on the 2004 Olympics in an attempt to create a more naturalistic environment to assess the robustness of the underdog support phenomenon. Specifically, the participants were provided with five countries' all-time Olympic medal totals, which were assumed to be good indicators of these countries' chances of winning in the upcoming Summer Olympics. Participants were asked to imagine two of the countries engaged in an upcoming swimming contest. The results revealed that, in accordance with the relative rankings of the teams, those countries with fewer medals received significantly stronger support from the unaffiliated individuals. This backing of the underdog was especially apparent for the country in the middle of the pack (Belgium, ranked number 3): when this country faced a top-ranked

team (Sweden) participants wished for it (Belgium) to win, but when it faced the lowest ranked team the support shifted to its rival.

Ceci and Kain (1982) used the presidential race of 1980 between Carter and Reagan to demonstrate the underdog effect in politics. The participants were presented with fake polls indicating either of the candidates holding a dominant lead. Among the participants who were exposed to a Carter lead, 44% declared themselves in Reagan's camp, versus roughly 30% in Carter's, while 25% remained undecided. On the other hand, among those who were told that Reagan was holding a substantial lead in the polls, only 21% declared themselves in his favor while approximately 53% aligned themselves with Carter. Moreover, the authors divided the participants into those who had an initial inclination towards one of the candidates before the polls were introduced (i.e., "partisans") and those who had no inclination at all (i.e., the "undecided"). Even among the partisans, 22% of those belonging to the Reagan camp and 30% of the Carter camp shifted their support following the manipulation (i.e., when presented with the polls indicating dominance of their candidate). Among the originally-undecided group, the shift was even more overwhelming, as 66% changed their minds to oppose the dominant frontrunner.

In a more recent study, Vandello et al. (in press) explored the underdog phenomenon in the geopolitical realm. Unlike in previous research in the political domain (cf., Ceci & Kain, 1982), underdog status was defined as a country's relative size on a map. Specifically, the participants were exposed to either a map in which Israel was

drawn next to the Palestinian Authority so that the former was greater in size relative to the latter, or a map in which Israel was shown as a part of the larger Middle-East region where Israel appeared much smaller relative to its Arab neighbors. All participants were furnished with the same abbreviated history of the Arab-Israeli conflict (with a balanced representation of each side of the conflict) and then were asked about their support for the two sides (as well as their prior knowledge of the history of the clash, in order to rule out any prior affiliation with one of the sides). As in previous studies, participants' support varied as a function of the "underdog" status, as expressed by the size on the map, extending their support in either condition to the smaller size party.

The Looming Success Component

The sound support extended to the underdog demonstrated in the reviewed studies is puzzling in light of the Webster's dictionary definition, which characterizes the underdog as a loser (Merriam Webster, 1994). In turn, Webster's definition for a *loser* is: (1) one that loses especially consistently; (2) one who is incompetent or unable to succeed; and (3) something doomed to fail or disappoint (Merriam Webster, 1994). The dictionary states that the idiom sprang from student slang in the mid 1950's and came to signify a "hapless person". It has obvious negative connotations for the individual it labels. Why, then, do people overwhelmingly support an entity that, in essence, has a past track record of a loser?

Furthermore, this anomaly goes a step further. Sympathy for underdogs may

extend beyond rooting for them as an observer to actively seeking to label oneself as such. It is not uncommon to find two competitors vying for the underdog label to shy away from any semblance of superiority prior to the competition itself. In both sports and politics, not infrequently, both competing parties seem reluctant to hold the label of frontrunner, and are willing or even happy to embrace the label of underdog. Quotes like "Former Vermont Gov. Howard Dean and Sen. John Kerry of Massachusetts lead in the latest tracking polls in New Hampshire, but both are calling themselves underdogs as they retool their campaigns in a changed political landscape" (Mercurio, 2004) are plenty. This suggests that there is an intuitive appreciation that others prefer and sympathize with underdogs.

It is possible that political leaders and others recognize that the dictionary definition of the underdog, which denotes pending failure based on unfavorable chances to prevail prior to the competition, is incomplete and that the seemingly irrational behavior of the politicians quoted above is not irrational at all. Particularly memorable or salient examples from the media and popular arts (e.g., literature and cinema), which often focus on unlikely victorious underdogs, may create a widespread belief that future underdogs can win. Hence, lay people's instinctive definition of underdogs might be much different and more optimistic than those stated in the dictionary. Specifically, it is proposed that, in addition to accepting the basic disadvantage prior to the upcoming contest as part of the underdog definition, people also assume that if the *underdog* term is mentioned to describe a competition, there is an additional component of *looming*

success, which becomes an integral part of the construct. It is important to emphasize that this dual-component definition of the construct does not necessarily transpire at the conscious, deliberate level of processing, but rather at the intuitive, implicit, below-awareness level of the construct perception. This introduces the need to study people's reactions to underdogs in domains such as memory and discrete free associations, in order to tap into implicit, intuitive definition of underdogs, which may further illuminate underdog support.

Justice-Based Motivations for Supporting Underdogs

Given the evidence that people tend to support underdogs, an obvious question is why. One possibility is that competitions of unequal status make justice concerns salient. In other words, people may root for underdogs to succeed as a way to restore equality, which may be perceived as a more just state of affairs under exposure to extreme power disparities.

In order to explore the justice motivation, Vandello et al. (in press) manipulated expectations to win an athletic competition independently of relative resource disadvantage. Specifically, participants were presented with four vignettes describing two sports teams about to face each other. The four vignettes differed in either: a) expectations for success (based on performance history), b) resources (based on the teams' payrolls), c) both expectations and resources such that the team with the low expectations also had the lesser payroll, or d) expectations and resources such that the

team with the low expectations had the larger payroll. In the first three conditions, the clearly disadvantaged team (the one with a losing record, with smaller payroll, or both) was easily defined as an underdog and was overwhelmingly supported by the participants. In the last condition, however, participants expressed support towards the high expectations team with fewer resources, but they had some misgivings about labeling it the underdog (only about 55% of them did so). It is noteworthy that, among all the underdog studies reviewed above (e.g., Ceci & Kain, 1982; Frazier & Snyder, 1991; Vandello et al., in press), this fourth condition was the only scenario in which a party with high expectations received significant support, suggesting that the definition of underdogs based solely on expectations is incomplete.

Based on this unique incident, it can be deduced that unattached observers who are exposed to very basic information about struggling underdogs assume that they are resource disadvantaged in some respect. This, presumably, primes their core justice concerns, which, in turn, drives the support for the weaker entity locked in a direct competition against a much stronger and assumed to be privileged opponent. While this is a plausible argument, it should be noted that justice as a motivation for underdogs support has gained only indirect support in the study by Vandello et al. (in press). Regrettably, the participants in that study were not queried directly about any justice concerns that might have been elicited (and even if they were, their self-report would likely be confounded by social desirability).

Thus, an underdog scenario could be thought of as a heuristic, or a short-cut for

information processing. That is, even when expectations for future success is the only piece of information available to the unattached observers, they still assume that those expectations are based on some material short handedness. Accordingly, the findings by Vandello et al. (in press) indicate that in the one condition in which it was implied that the underdog squandered its resources (i.e., the 4th condition), the support for the underdog was diminished. This decision-making process almost automatically calls for justice or fairness considerations.

Specifically, conditions of scarcity of resources call for assessment of resource allocation based on the justice norm of deservingness (Skitka & Tetlock, 1992). In the studies described above (Ceci & Kain, 1982; Frazier & Snyder, 1991; Vandello et al., in press), unattached observers were asked to make decisions about their support based on the parties' expectations to win. In each of the studied scenarios, only one competitor could triumph. It may be reasonable to assume, therefore, that when faced with a situation of remarkably uneven history of success and failure, the unattached observer is called to examine his or her inner concepts of justice and the "distribution of fate" in the world. Deutsch (1985) labeled such a scenario "relative deprivation" – a violation of a perceived entitlement, which serves as a driving force behind the enhanced sense of injustice. In other words, third party observers may implicitly introduce the sense of some universal, global fairness to their assessment of the situation. They may ask themselves – most likely implicitly than explicitly – whether the distribution of rewards is fair or unfair in relation to both entities, as well as in relation to general principles of

justice expressed in the societal norms.

Skitka and Tetlock's (1992) contingency model of resource distribution proposes that when individuals face a situation where they need to extend their support to one of the two sides, they turn to attributional analysis. The question, then, is: are the competitors vying for their support personally responsible for their predicament or not? The attributional analysis appears to account for the findings by Vandello et al. (in press), such that, once made aware that the underdog – as defined by expectations to win or lose – had more resources compared to the top dog, participants diminish their support toward the underdog, while also struggling to clearly label the two entities as underdog or top dog.

Thus, it appears that detached observers tend to assume a match between lack of success and a state of relative resource deprivation and base their favoritism towards the weaker side on the perception that this disparity is unfair. The support extended to the underdog offers people the opportunity to symbolically rectify the unjust state of affairs they perceive. It is possible that the direct competition scenario provides an element that sharpens this notion and pushes the majority of people to align themselves with the underdog.

Utilitarian-Based Motivations

Another competing explanation for the support that non-partisan observers extend to the underdog may derive from a rather opposite motivation. Instead of seeking justice

and trying to even the odds on a moral basis, third-party onlookers may be driven by rather rational, self-promoting utilitarian motives. From this perspective, the choice of sides for whom to root follows a cold, logical calculation (even if not explicit one) with regards to which side would provide the biggest positive emotional payoff. This calculation is determined by expectations for success and predicted emotional payoff in case the success is achieved, as follows.

As the underdog concept is based on expectations, non-partisan observers have little to lose by supporting the underdog. Underdogs are expected to lose (by definition) and, thus, their loss carries little adverse emotional implications for their supporters, whereas a win could carry immense favorable consequences by its mere unexpectedness. On the other hand, if support is extended to the top dog, people stand merely to lose. Top dogs are expected to win, but because of this expectedness their win bears smaller positive emotional benefits (if any), while their loss, because of its unexpectedness, could be devastating once they committed themselves. Underlying this logic is an emotional cost-benefit analysis intended to determine one's alignments with one of the competing sides. Steve Spurrier, a former football coach at the University of Florida, was quoted after many years of success: "I'd like to be the underdog again. ...Being an underdog is a little bit more fun at times…It's almost a disgrace every time we lose. It's a relief when we win instead of (the feeling) we got when we weren't supposed to" (English, 2002).

The affective consequences of expected and unexpected outcomes is well grounded in Decision Affect Theory (DAT; Shepperd & McNulty, 2002), which

postulates that human beings feel displeasure when their outcomes fall short of the counterfactual alternative and feel elated when their outcomes exceed the counterfactual alternative. In situations with positive or negative outcomes, expectations determine the counterfactual alternative. For example, Mellers, Schwartz, Ho, and Ritov (1997) found that participants who took part in an experiment simulating a gambling sequence were overjoyed following unexpected wins as compared to the expected ones and, by contrast, were more disappointed after unexpected losses than after the expected ones. Hausch and Ziemba (1995) demonstrated a similar pattern outside of the laboratory, in the realm of horse racing, where bettors trying to maximize their profits still bet too frequently on longshots, which are almost never a good wager. For example, longshot horses that win only 1% of the time have 2% of the total money bet on them. Again, in accordance with DAT principles, betting on extreme favorites (those with the odds between 20/1 and 10/1) to win the race is considerably high, but those super-horses still do not garner as much bets as they should (based on eventual winning results). Shepperd and McNulty also found support for the DAT principles in another domain, in which expectations of high versus low risk in a fictitious medical condition were manipulated. Once again, expectations influenced the subsequent affect.

The intuitive logic of Decision Affect Theory can also be found in everyday expressions like “don’t get your hopes too high” and “expect the worse and you will never be disappointed.” It is, therefore, plausible that non-partisan observers adopt this rationale to protect themselves emotionally. Note that this motivation does not require

people to identify or sympathize with underdogs, nor does it require motives of justice to be elicited. Yet, however convincing this utilitarian approach is, people tend to overestimate self-interest as a motive for behavior (Miller & Ratner, 1998).

Underdog and the Implications for the Self

People differ in their beliefs about inequality, with some believing that outcomes should be distributed more or less equally (Pratto, Sidanius, Stallworth, & Malle, 1994) but it seems that there is still a degree of self-interest involved in holding such beliefs, as individuals rarely believe in justice, merely for the sake of justice. Specifically, those who favor equity in society often do so because they are invested in the folk wisdom that "hard work pays off." Such a belief is adaptive because it suggests that one's current status is malleable and changeable, and that one will not always be stuck in an inferior position. It is likely not the case, however, that all people define themselves as underdogs and, thus, by supporting underdogs in fact support themselves, as suggested by other researchers (Markus, McGuire, Allison, & Eylon, unpublished manuscript). This all-inclusive assertion would be too far reaching. Instead, it is postulated that any individual who functions in a social setting is bound to feel like an *underdog* (i.e., inferior relative to others) at one time or another. This experience is a major source for the inherent appeal of underdogs. It is likely that one roots for underdogs because, should they succeed, their accomplishments are rendered more satisfying and gratifying by virtue of the augmentation principle (Kelly, 1972) – that is, they have succeeded in spite

of seemingly overwhelming obstacles. Thus, a victory by the underdog makes individuals feel better about themselves by reinforcing their own belief that hard work in the face of a disadvantage and adversity does indeed pay off. This notion received indirect empirical support (Vandello et al., in press) when participants watching a basketball game consistently perceived a team as exerting much more effort (than its opposition) when it was believed to be an underdog. Thus, support for underdogs based on these implications for the self may reflect a hybrid between two motivations described above – the justice-based and the utilitarian motives – in that it is not purely self-interest-based (because the equity principle of justice serves as its foundation); neither is it distinctly justice-based as it self-driven by the aspiration to improve one's situation in the future. This latter motif is in contrast to the short-lived utilitarian motivation of maximizing emotional pay-offs based on mere expectations.

Overview of the Present Studies and Specific Predictions

A series of four experiments was conducted to explore the underdog phenomenon. The first study sought to explore people's spontaneous and unstructured definitions of underdogs by exploring the semantic network of the underdog construct. Study 1 was, thus, a concerted effort to use a systematic, reliable and controlled method of exploring semantic associations to clarify the construct of the underdog and to explore the argument that the schema of the construct might be different than the dictionary definition. The second series of experiments (Studies 2-3) explored the hypothesized looming success

component of being an underdog. Though underdogs do not typically prevail, it is argued that through selective attention to those singular ones who eventually do, people tend to inflate the chances of *all* future underdogs to beat the odds. Study 2 examined this assertion in a straightforward manner by depicting underdogs in the arenas of sport, business and politics and asking participants about their chances to prevail (winning a game, a tender or an election respectively). In a between study design the same struggling entities were labeled as either *disadvantaged* or *underdogs*. It was hypothesized that after being exposed to the *underdog* label (but not the *disadvantaged* label), participants would be more likely to inflate the chances of future success for this entity, relative to stated odds.

Study 3 aimed to explore the relationship between the underdog concept and winning, in accordance with the looming success theory described above. Specifically, Study 3 provided participants with narratives about a competitively imbalanced women's softball match. I tested the hypothesis that people tend to attach an underdog label to entities that are either competitively disadvantaged at the point prior to a competition or are considered at a disadvantage prior to a competition but eventually win; but not to those who are considered at a disadvantage prior to a competition and subsequently lose. Utilizing the false recognition paradigm, it was hypothesized that in the first two conditions (i.e., in a state prior to the competition or a scenario in which an originally disadvantaged entity won the competition), the word *underdog* would be falsely recognized more often than in the condition in which a lesser contender eventually lost.

Lastly, Study 4 focused on the motivations behind underdog support. It was predicted that sympathy for underdogs would drive underdog support when the disadvantage of an entity was made salient; conversely, when an entity's relative advantage was made salient, support for the underdog would be driven more by s*chadenfreude.* To test this, Study 4 measured people's attentional focus while watching a sporting event. Specifically, after presenting participants with a short basketball clip of two unknown teams, better memory for the underdog was predicted in the condition where it had significantly fewer resources than the average (thus denoting *true* underdog support), while better memory for the favorite was expected in the condition where it had significantly more resources than the average (suggesting *schadenfreude).*

In addition, Study 4 investigated possible implications of the underdog for self-perceptions. Specifically, it was tested whether individuals' support for underdogs was based, at least partly, on the perception that if underdogs prevail, the world was perceived as malleable (which by implication might mean that any person can better his or her position in the world) on a range of issues not specifically connected to the competition at hand. After watching the basketball clip and learning that the underdog either won or lost, participants completed questionnaires measuring self-esteem and worldviews. It was predicted that participants who initially supported the underdog and were exposed to the underdog winning would report significantly higher levels of state self-esteem and stronger worldviews that endorse mutability in general, above and beyond their reported identification with the underdog.

Study 1: The Semantic Network of the Underdog

As an initial investigation into the meaning of underdogs for laypersons, Study 1 was exploratory. This study attempted to generate a cognitive map of associations to the underdog construct by employing the method of discrete free associations. Although the underdog effect has been demonstrated to be robust and reliable (Ceci & Kain, 1982; Frazier & Snyder, 1991; Vandello et al., in press), the construct's meaning (i.e., what do people denote when they think about underdogs) has yet to be adequately explored. Although participants in studies by Vandello and colleagues have been asked this very question, this effort was primarily intended as a manipulation check to verify that there was an agreement with regard to which entity constituted the underdog. It is also safe to assume that the participants' perceptions of the construct were highly influenced by the experimental vignette or other stimuli they had just been exposed to and not necessarily reflected their true and unbiased interpretation of the concept. Moreover, a more structured and reliable method to answer the question at hand (than an open-ended format) is warranted. By adopting a more restrictive method used primarily in the memory research domain, a better grasp of what underdogs mean to lay people can be attained. Lastly, such an exploration is needed since many previous attempts to explore the underdog support (e.g., Ceci & Kain, 1982; Frazier & Snyder, 1991) did not actually employ the word *underdog*, but rather utilized designs in which an underdog scenario of

disadvantage was created. Thus, the investigation into the meaning of the underdog construct appears necessary.

This study utilized the method used by Nelson, McEvoy, and Schreiber (2004) in their attempt to create a large normative database of free associates to many semantic concepts. In their data collection, they asked participants to write the first word that came to their mind that was meaningfully related to, or strongly associated with the cue word. For example, if given ABILITY _____, the participants may have written COMPETENCE on the blank next to it. This procedure is called a discrete association task because each participant is asked to produce only a single associate to each word. This laborious undertaking was first attempted by Jenkins and Palermo (1964), although their effort was limited in scope. Free association data for meaning appeared to provide a useful means for indexing pre-existing strength of relationship between words. It is assumed that exposure to a familiar word implicitly activates (i.e., primes) words or constructs with similar meaning. In order to shed light on the semantic meaning of *underdog* there is a need to construct such an associative map.

Nelson et al. (2004) included all associates that were mentioned more than once by the participants in the set size of the cued word. This effort was additionally supplemented by exploring the relationship between the associate and the cue in reverse order, such that once an associate was mentioned by more than one participant, it was shown to another group of participants in the same manner that the cue was initially introduced. This enabled assessing whether a reverse semantic linkage or resonance

existed between the two words.

However tempting it is to infer the strength of the backward connection from the forward one, one should be cautious. The correlation between the two across all the samples (n = 63,619) in Nelson et al.'s studies was only moderate – r = .29 – and the chances of assessing back strengths from the forward ones is not likely to succeed. In addition, there may be associates that are linked directly to other associates but not through the initial cue. When this is the case, connectivity is established. Thus, based on the summation of all associations, resonance and connectivity information acquired from worldly experience (Tulving, 1983), an associative map is created. This lexical structure plays a vital role in any mental task involving familiar words. This role, in turn, is complex and is probably different for different tasks, but the basic structure is assumed to remain stable whenever meaning is sought. Most word linkage is presumably formed through word experience in spoken conversation, reading and thinking. Discrete free associations norms are assumed to provide a reliable index of semantic distance (Nelson et al., 2004).

Based on the norms collected by Nelson et al. (2004), different words have different set-sizes, with varying strength of the associative relationship, connectivity and resonance. Links vary in strength, direction and directness (Nelson, McKinney, Gee, & Janczura, 1998). In essence, every forward connection value between two words in the map points to the probability that one word produces another under the free association instruction and given a particular sample size.

Why then use free associations to get to the meaning of the underdog construct? First, using free association as a procedure for measuring strength of connections has a long history as a reliable technique (Cramer, 1968; Deese, 1965; Jenkins & Palermo, 1964; Nelson & Schreiber, 1992). Second, compared to the method of rating pairs of words for "relatedness", free associates technique has a few major advantages. Ratings cannot be used to determine either direction or source. A rating of high relatedness could be given because there is a high A to B forward connection or because there is a high B to A backward connection. This point is of importance for the underdog construct exploration, as it was hypothesized that the word underdog would produce mostly antonyms in forward linking. This would be the case because the underdog is forever locked in a direct competition with its archrival, the top-dog. In addition, none of the possible associates was expected to produce the word *underdog* when they served as cues in the backward linking phase. These predictions were made due to the complexity of the underdog construct, as it was hypothesized to be composed of at least two main components: initial disadvantage and looming success, and, thus, no one associate was expected to capture it wholly. An underdog is in many ways a story unfolding: it begins with notable disadvantage, but also consists of possibly overcoming the odds (be it real or moral in nature). Thus, this presumably dynamic nature of the *underdog* is hard to be captured by one associate only. Consequently, the free associates method appears to be well suited for exploring such complex construct.

On the other hand, its valuable contributions notwithstanding, the free associates

method also suffers from several disadvantages. Primarily, it underestimates the strength of very weak associates as participants are asked to come up with only one target word. This limitation is not assumed to be of major concern given the goal at hand. The attempt to get to the meaning or the various facets of being an underdog is an initial inquiry into its major building blocks and, as such, the weak associates are not the focal point of the investigation. Of note, Nelson and colleagues (2004) lamented the problematic generalizability of the cognitive map across different geographic regions. For example, differences in language between Florida and Great Britain proved to produce differences in free associations.

As stated before, the free association procedure is not without faults nor is it the only method to assess connection strengths. Continuous associations and co-occurrence norms are both suitable alternatives but their interpretation is more complex and requires a more comprehensive set of assumptions before the analysis can be started (e.g., how the answers are classified, in what rank order they are treated, etc.). Yet, the central advantage of the free associate approach is that the strength of association between semantic concepts can be quantified: the probability that, given one word or concept (i.e., underdog), another will be produced (e.g., disadvantage or hero). These probabilities can then be used to establish models of semantic memory operation behind the underdog concept.

In sum, this free association method, which employs conditions of minimal constraint, was chosen due to the complexity attributed to the underdog construct. In

essence, the underdog concept is hypothesized to be composed of two separate constructs. The first component: disadvantage, was studied partially in a previous experiment by Vandello et al. (in press), in which participants agreed that a sport team qualified as an underdog if its expectations to prevail in an upcoming competition were low, or if it had lower resources than its competitor or both.

This investigation aimed to illuminate another aspect of the underdog construct - the possibility for the "looming success." It is hypothesized that the use of the term *underdog* entails and/or triggers unrealistic expectations to do better than previously predicted. In addition, given this hypothesized dual nature of the underdog construct, the free associates procedure was expected to produce discrete associates that also signified change from one state of affairs to an unpredicted one (e.g., words such as *surprise*, *stun* or *amaze* may come to mind).

Method

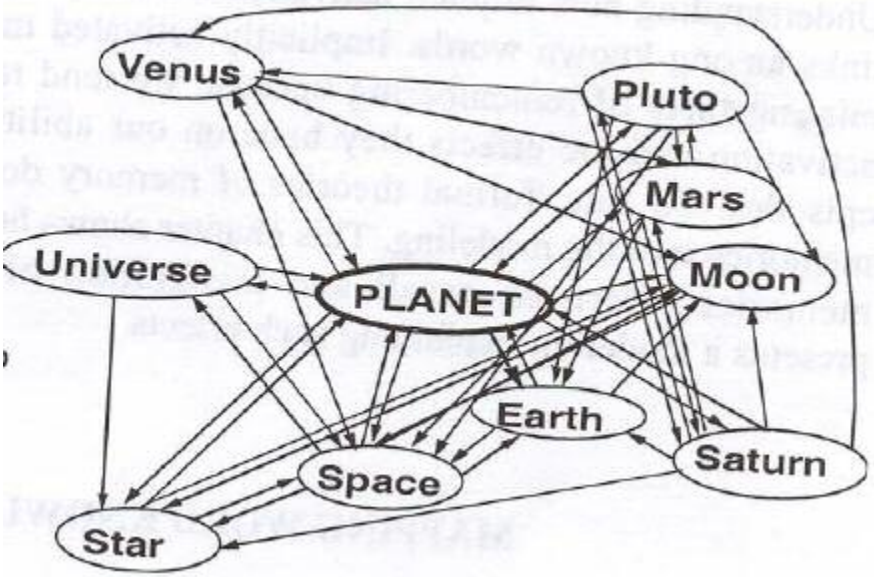
Participants. One hundred thirty students (77 women, 47 men, 6 unidentified) from University of South Florida and Palomar Community College (in San Diego, California) participated in the underdog forward linking initial phase task. The average age was 21.11 years. Fifteen (11%) reported that English was not their first language, while two did not report their first language.

Procedure. The participants were presented with a short list containing six words (see appendix A). The first word was always *underdog* to avoid any priming by other

words. The other five words (i.e., *doubt*, *feathers*, *tow*, *parking*, *electric*) served as fillers to mask the true purpose of the study. The decision to employ those specific words was made because they had been used by Nelson et al. (2004) in their original normative study, which allowed comparing the results of the present study with theirs. Participants were asked to "to write in each blank the first word you think of that means the same thing as or is strongly associated with the word printed on the page".

Once the responses were tallied and classified, as detailed below, a reverse process was administered: Each associate mentioned more than once was presented in a similar fashion to another sample embedded with other distracters to minimize priming effects (except for those associates that were included in the original free association database by Nelson et al., in which case the existing database norms were used instead). The responses were tallied and a semantic map of the construct was developed (see following example for the word *planet*; Figure 1).

Figure 1. Cognitive map (free discrete associates) of the word *planet*. Adopted from Nelson et al. (2004).



Analytic Strategy. The responses were not simply counted as in a frequency count (Kucera & Francis, 1967) but were classified by two designated experts if questions of classification arose. First, cue set size (QSS) was computed by counting the number of different responses given by two or more participants in the normative sample. Nelson et al. (2004) found that some words have set sizes of 1.00 (e.g., *left* has only one associated - *right*) while others have set sizes of 30 or more targets (e.g., *farmer*). Next, forward strength (FSG) was computed by dividing the number of participants producing a particular response by the number of participants serving in the total group norming the word (i.e., proportion). Backward strength (BSG) was assessed next, whereupon the *underdog* associates served as cues themselves, to produce associates/targets. BSG was

calculated in the same manner as FSG. Additionally, indirect connections were explored. Specifically, FSG and BSG represent measures of direct strength because one word directly produces the other as an associate in free association. Indirect connections, on the other hand, link between related words that occur through other words. Thus, mediated strength (MSG) was calculated by cross-multiplying the individual links and then summing the results across each link. Nelson et al. indicated that while some word pairs have no such connections, others have as many as 17.

Results

Fourteen responses were excluded from the analysis as participants did not follow the instructions (7 provided two associates rather than one, 2 were illegible and 5 returned the form blank), five of which were students who reported that English was not their first language. The remaining 116 associates were analyzed.

Of those, 46 words were mentioned only once (i.e., by one participant each) and thus were excluded from the cue set size. Two associates, *undercat* and *topdog*, were mentioned twice each, but were excluded from further analyses as they were determined to be a non-word or a two-word idiom, respectively. For each of them, one response was given by a participant whose first language was not English.

According to the a priori determination that the responses would not just be counted as a frequency count, some associates and their derivates were grouped together. This procedure influenced only three associates: *Lose* and *losers*, each reported once,

were coupled with *loser*; *swinging* and *swings*, each reported once, were added to *swing*; and, finally, *win*, which was also mentioned once, was added to *winner*. As a result, the QSS (Cue set size) of *underdog*, which included 66 answers was composed of 10 different associates, each mentioned more than once: *loser*, *winner*, *cartoon*, *swing*, *hero*, *weak*, *team*, *rookie*, *football*, *cat* and *favorite*.

Next, forward strength (FSG) for each associate was computed (see Figure 2). This was achieved through the division of the number of participants who produced a particular response by the number of participants who served in the norming sample (i.e., proportion). The associate *loser* had the highest forward strength with a value of .19 (22 responses out of 116); *winner* and *cartoon* had a value of .08 each (10 responses out of 116). *Swing* had a forward strength of .04 (5 out of 116 responses), while *hero*, *team*, *cat*, *football* and *weak*, all had a forward strength value of .03 (3 out of 116 total answers). Lastly, *rookie* and *favorite* had a value of .02 (2 responses each out of 116).

Next, the backward strength (BSG) of each of the associates was explored in order to find out whether any was linked back to the word *underdog*. All but *rookie* were found to have been already normed by Nelson et al. (1998) and none were found to have *underdog* as their associate. Eighty eight additional participants participated in the norming of the word *rookie* using it as a cue. Again, the word *underdog* was not mentioned as a target in response to *rookie* by any of the responders. The following words were found to be *rookie*'s associates: *baseball*, *new*, *beginner*, *amateur*, *professional*, *sport*, *veteran*, *starter*, *player*, *boy*, *novice*, *year*, and *first*.

The connectivity of the cue, or the indirect relationship among associates and the target was explored next. Mediated strength (MSG), sometimes called 2-step strength in the memory literature, was calculated by cross multiplying the individual links and then summing the results across each link. Because *underdog* was never mentioned as an associate, the MSG was computed to have a value of 0.

Discussion

The hypothesis that using *underdog* as a cue in forward linking would elicit associates, which describe both an initial inferior position and an element of looming success was supported. The strongest associate was *loser*, consistent with the common dictionary definitions of the underdog denoting one that loses especially consistently, one who is incompetent or unable to succeed, doomed to fail or disappoint (Merriam Webster, 1994). This associate represented the initial state of affairs by which the weaker entity, ultimately termed the underdog, was determined to be in a marked disadvantage. The associate with the next highest strength was the *winner* (while *cartoon* had a strength value identical to winner, it was clearly elicited in reference to the comic-strip figure, and thus it would not be discussed in the present context). *Winner* stands in sharp contrast to *loser* (the two are indeed connected as associates of each other in Nelson et al.'s norms) representing "one that wins especially through praiseworthy ability and hard work…one that wins admiration" (Merriam Webster, 1994). The third strongest associated as defined by the forward linking strength was *swing*. This associate appeared to be derived

from regional jargon as in California when children push each other on swings they often run under the person on the swing and call this an *underdog swing*.

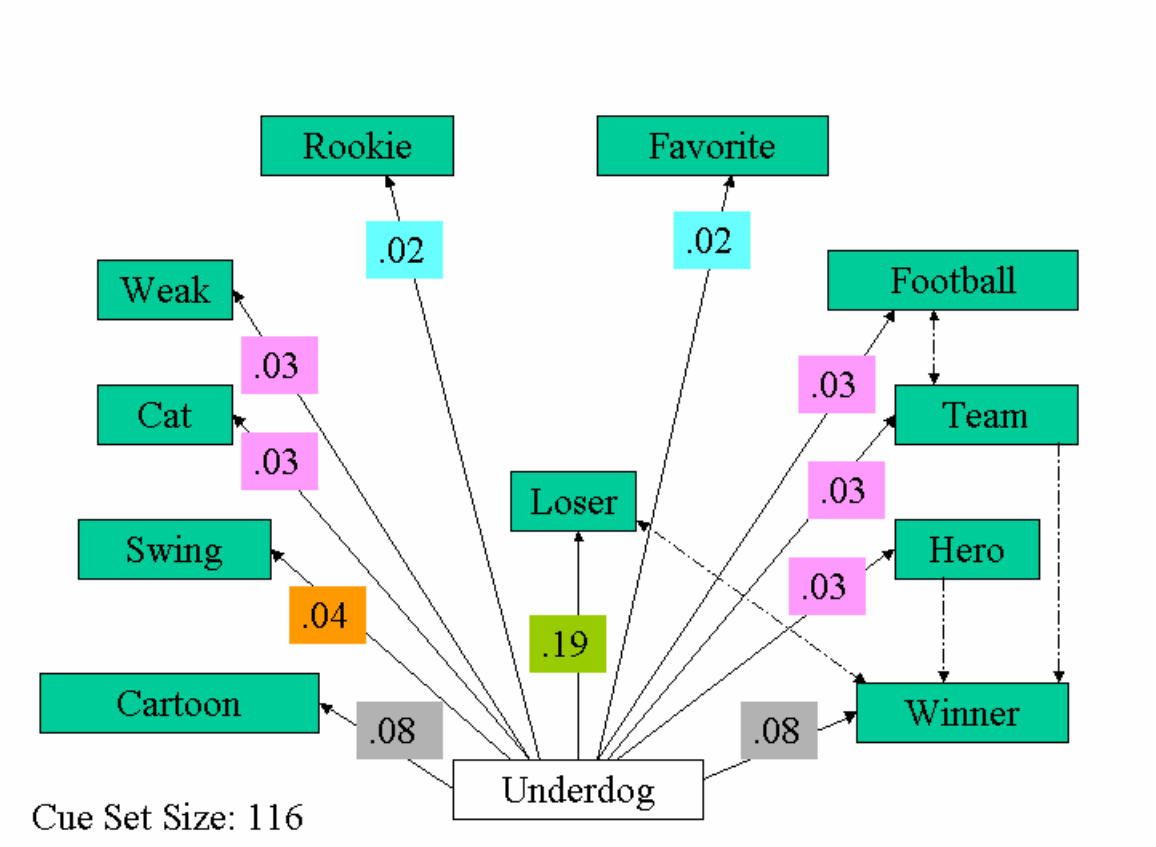
The tension among the two opposing components, disadvantage, on the one hand, and looming success, on the other, was also present in the second tier of weaker associates. Specifically, it appeared that while *weak* and *rookie* signified disadvantage, or being new, inexperienced and unfamiliar to a new social environment, *hero* might have represented higher status and esteem.

In sum, the semantic structure that emerged in the forward linking phase provided some support to the conflicting nature of the underdog and attested to its mutable nature, in contrast with the fixed existing dictionary definitions. Also, as hypothesized, in the backward linking phase (BSG), none of the mentioned associates traced back to *underdog*. Arguably, this pattern of results also emerged because to the dual nature of the underdog concept (i.e., disadvantage and looming success), as no one associate was able to fully capture its shifting nature.

Though the proposed notion is that underdog is seen as an entity in flux, in essence transforming itself from a loser to a winner, alternative interpretations of the results need to be considered as well. As participants were not instructed specifically to *define* the underdog in one word, but rather were asked to think of an associated word, it is possible that individuals who were thinking of the underdog, came up with associates with negative valance (i.e., *loser*, *weak*), while those who provided more positive associates (i.e., *winner*, *hero*) were imagining its antagonist, the top dog, as the two are

defined by their direct competition. While certainly plausible, this interpretation is less convincing because, if true, one would expect many more participants to name the words *frontrunner* or *favorite* as the associates, rather than providing the top dog's qualities such as *winner* or *hero*. In order to rule out this alternative interpretation, the looming success qualities of the underdog were explored in a more direct manner, in Study 2.

Figure 2. Cognitive map (free discrete associates) of the word *underdog*. Numbers denote forward strength (FSG).



Study 2: The Looming Success of the Underdog – Direct Investigation

People are compelled to categorize in order to make sense of the world they live in, so they can navigate it more efficiently (Nisbett & Ross, 1980; Ross, 1977). In making such decisions, people automatically assess the extent to which the entity in question seems to fit one or another category. This process is referred to as the representative heuristic (Kahneman & Tversky, 1972), which implies that a member of a given category ought to resemble the category prototype or schema. This strategy is effective as long as there is some validity to the prototype and the members of the category cluster around the prototype. By employing this shortcut people limit their cognitive expenditure and conserve important limited resources. However, people tend to focus exclusively on a strong match between an entity and its categorical prototype and by doing so tend to ignore other sources of information. Another possible valuable source of information is base-rates of relative frequency (Kahneman & Tversky, 1973), although the base-rate information also tends to be underweighted.

Nisbett, Borgida, Crandall, and Reed (1976) suggested that the base-rate information is ignored in favor of individuating information because the former is "remote, pallid and abstract" whereas the latter is "vivid, salient and concrete" (p. 24). Underdogs, in essence, are defined by their base rate for future success. Whether defined by betting percentages, experts' opinions, or history of past failure/success, they all

denote a markedly lower chance to prevail in a competition against a favorite. Hence, when people are making decisions about future success and have no new information that might potentially change the balance of power, they should unequivocally predict a frontrunner success. However, in the present study it was hypothesized that when one's explicit underdog status was made salient, people would revert to the prototype. The schema in this case, it is proposed, is not the aggregation of all encountered underdogs of the past but only a very select few. The dividing line between which underdogs are and are not remembered is based on their eventual success. This hypothesized mechanism is propelled by the popular media that contributes to creating a collective identity around underdogs who happened to triumph and such instances thus become underdog exemplars. All the while, underdogs who lose are dime a dozen and thus are discounted and do not enter the pool from which the representatives are sampled.

This process in essence demonstrates the availability heuristic whereupon people often judge the likelihood of an event based on how readily pertinent examples come to mind. Again, as in the case of the representative heuristic, typically those cognitive shortcuts serve us right as there is often correspondence between likelihood and availability. However, when it comes to underdogs (who are not supposed to win by definition and odds) the availability memory bias is in stark contrast with the reality of the likelihood of the underdog triumph.

Slovic, Fischoff and Lichtendtein (1982) demonstrated the power of the media in perpetuating the availability heuristic. Their study is of great importance to the present

investigation due to the similar mass communication mechanism proposed. Some news, these researchers argued, receive more coverage because of their spectacular and "telegenic" nature. For example, a tornado or a flood is much more likely to be shown on the evening news than a lightning strike. Thus, participants are more likely to overestimate the commonness of causes of death resulting from the former while discounting the latter.

The availability and the representative heuristics sometimes work in tandem as suggested in the present case. A judgment that two things belong together – underdogs and winning – can make an instance in which they do indeed co-occur particularly available. The joint effect of the two heuristics creates an illusory correlation between two variables and the belief that they are indeed correlated when they are not. Infrequent events are highly distinctive and, thus, when the overwhelming underdog surprises its mighty favorite, this usually garners much interest in the media and captures people's attention and thoughts. Underdogs who fail need not be the focus of attention as they are indistinct.

In Study 2, participants were exposed to either a struggling politician, business entity, or a sports team about to contend with a formidable rival. They were consistently described in the vignette as either "underdog" or "disadvantaged" entities. The hypothesis of the looming success component was explored by asking participants directly to evaluate the chances of the "underdog" or the "disadvantaged" side to prevail in the competition against a 30% prediction of success as predicted by an expert in the

vignette. The hypothesis was that when people read about "disadvantaged" entities, their predictions would be somewhat favorable as there is some evidence that optimism pervades people's thinking about the future (Brickman, Coates, & Janoff-Bulman, 1978; Markus & Nurios, 1986; Tiger, 1979). However, participants who read about struggling entities as "underdogs" would have access the available "underdog heuristic", and thus their rating should surpass significantly not only the base rate reflected by the experts opinion, but also the "optimistic" predictions of their counterparts who read about "disadvantaged" entities.

A second prediction was related to the characterization of the entities as an "underdog" and/or "at a disadvantage," such that when the competing side was specifically labeled in the text as either an underdog or disadvantaged, participants would be likely to follow the characterization and endorse it as such. Overall, no differences in the domains (i.e., politics, business and sport) were predicted, the use of three domains was intended for generalizability of the findings.

Method

Participants. One hundred and seventy five participants completed questionnaires in class sessions in exchange for class credits. Sixty students (40 females, 19 males and one who did not report gender) read a political scenario questionnaire in a single class session (30 participants per each condition). Sixty students (48 females, 11 males and 1 who did not report gender) read a sports scenario in two separate class

sessions (30 participants per each condition) and 55 students (27 females, 25 males and three who did not report gender) read a business vignette in three separate class sessions (28 read about underdogs while 27 about disadvantaged entities).

Procedure. Participants read one of six possible vignettes. Two vignettes depicted entities with low probabilities for success in an upcoming sport match, two other versions portrayed comparable conditions in the domain of politics, while the last two described a similar business scenario (see Appendix B). The only difference between vignettes in each field was that one included the word *underdog* in the text, while its counterpart had the word *underdog* substituted with the word *disadvantage* and its derivates. Participants were told that the vignette was an article downloaded from the Internet and that the researchers were interested in people's opinions about social competitions. In each of the six conditions (sport/ politics/ business – underdog/ disadvantaged), the text stated that experts had predicted that the low probability entity was 30% likely to overcome its opponent. Participants were asked to give their own assessment of the probability of winning after reading the vignette (between 0-100%), how much they supported it in comparison to the top-dog on a 5-point scale from not at all to support fully (in the business vignette, the scale was modified to a scale of 1 to 9 for each of the entities), and then to indicate whether they thought that the depicted entity was disadvantaged (*Yes/ Don't know/ No*) and whether they considered it as an underdog (*Yes/ Don't know/ No*) (see appendix B).

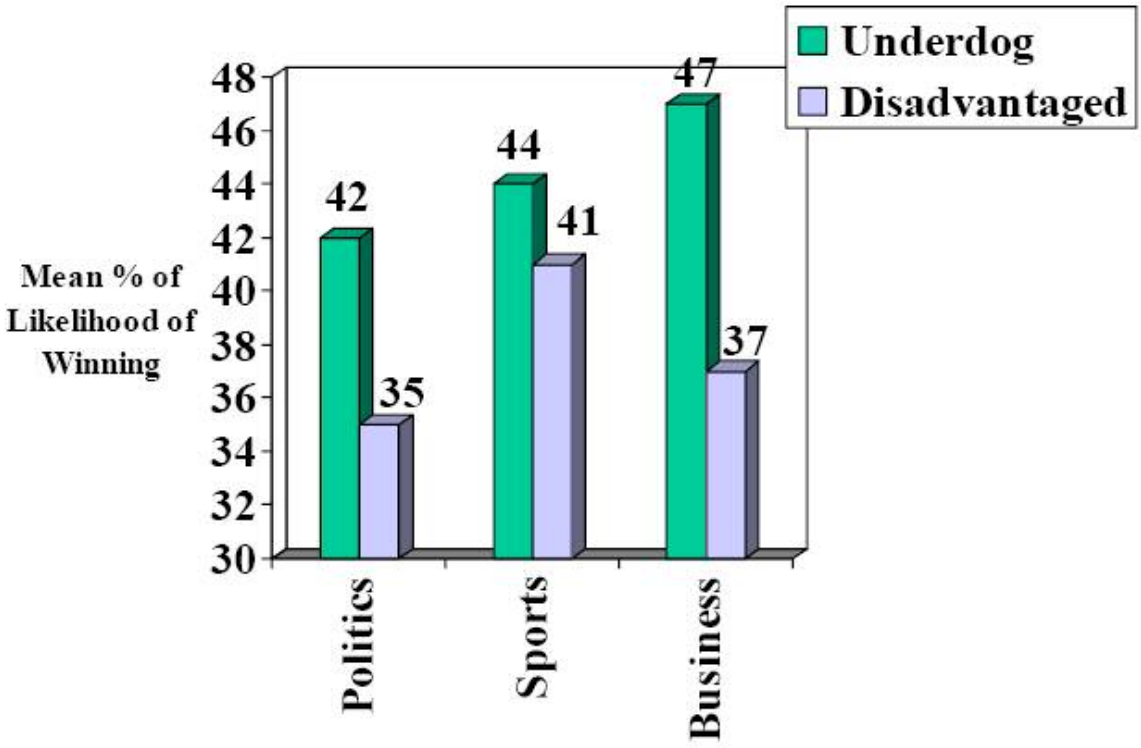
Results

Looming Success. First, the main hypothesis of the looming success of the underdog was explored. A two-way between-groups analysis of variance was conducted to explore the impact of labeling of the lesser entity and type of scenario on looming success estimations. As predicted, there was a statistically significant main effect for label, F (1, 169) = 5.5, $p < .05$, such that underdogs were predicted to do significantly better (M = 44.31, SD = 19.3) than disadvantaged (M = 37.72, SD = 17.98). However, the effect size was small (partial eta squared = .032). The main effect for scenario [F (2, 169) = 0.88, $p > .05$] and the interaction effect [F (2, 169) = 0.40, $p > .05$] did not reach statistical significance.

In addition one-sample t-tests were conducted across the three domains to assess if the looming success estimations were significantly different than the base-rate of success as denoted by the experts' opinions. This was the case for the underdog, t (87) = 6.95, $p < .05$, as well as for the disadvantaged, t (86)= 4.0, $p < .05$. The same analyses were conducted separately for each domain. As shown in Figure 3, in politics, those who were exposed to the underdog scenario thought that he would do significantly better (M = 42%, SD = 21.44) than the experts' prediction of 30%, t (29) = 3.07, $p < .05$. The prediction of success made by the participants who read about the disadvantaged candidate was not significantly different (M = 34.83%, SD = 18.68) than that made by the experts, t (29) = 1.42, $p > .05$. In business this pattern repeated itself, with those exposed to the *underdog* vignette, predicting significantly more success (M = 46.96%, SD =

18.02) than expert's predictions, t (27) = 4.98, p < .001. In contrast, those exposed to the *disadvantaged* entity (M = 37.48, SD = 19.88) were not different than the predictions made by experts, t (26) = 1.96, p > .05. Lastly, in Sports, the *underdog* exposed group thought that the weaker team would do significantly better (M = 44.13, SD = 18.54) than the expert's predictions, t (29) = 4.18, p < .001. The predictions of success made by the participants who read about the *disadvantaged* team were also significantly more positive (M = 40.83, SD = 15.36) than those of the experts, t (29) = 3.86, p < .001.

Figure 3. Projected success as a function of labeling and domain.



Support. When participants were asked how much they supported the political challenger on a scale from 1 (*Not at all*) to 5 (*Fully support*), overall, they were somewhat supportive of the challenger (M = 3.15, SD = 1.01, with 3 being neutral). However, participants were not more supportive of the *underdog* contender (M = 3.20, SD = 1.00) as compared to those who read about a *disadvantaged* candidate (M = 3.10, SD = 1.03), t (58) = .38, $p > .05$.

When participants were asked how much they supported the weaker team in the sport domain on a scale from 1 (*Not at all*) to 5 (*Fully support*), they were somewhat supportive of the challenger (M = 3.83, SD = .97). Those who were exposed to the *underdog* contender (M = 3.73, SD = 1.2) did not differ in support from those who read about a *disadvantaged* candidate (M = 3.93, SD = .65), t (58) = -.78, $p > .05$.

In the business scenario, a difference support score was computed (support for the underdog minus support for the top-dog). There was no significant difference in the computed difference when the entity was labeled as *underdog* (M = 0.11, SD = 2.63) and when it was labeled as *disadvantaged* (M = -0.44, SD = 2.33), t (53) = -.82, $p > .05$.

Labeling. When participants read the *underdog* version across the three domains, 42 out of 88 (48%) thought that he was disadvantaged, while only 21 (24%) thought he was not. The rest (25) were not sure. On the other hand, when asked about whether the contender was an underdog, 65 out of 88, or 74%, thought that he qualified for the definition, while 5 (6%) disagreed and 18 reported that they did not know (20%). Among the other half who read the *disadvantaged* vignette, 44 out of 87 participants (51%)

thought the lesser candidate was disadvantaged, while 23 disagreed (26%) and 20 (23%) were not sure. When queried about his underdog status, 65 out of 87 (75%) agreed that he was an underdog, while 13 (15%) objected and 9 (10%) did not know.

Discussion

The hypothesis that the use of the word *underdog* (as opposed to *disadvantaged*) to describe a weaker entity would elicit a higher perceived likelihood of winning in an upcoming competition than experts' predictions was supported. Although this was evident across all domains, in politics and business the disparity in assessments was particularly strong. In sports, the difference was marginal. As hypothesized, participants predicted doing better than the initial odds for both the disadvantaged and the underdog, but estimates for the latter were greater than the former.

These results reinforced findings by other authors (e.g., Nisbett et al., 1976) suggesting that people disregard base-rates and choose to come up with their own estimations of future occurrences. However, these data suggest that participants decided to do so *especially* in the case of a weaker entity labeled as an underdog.

These results also imply that the prototype of an underdog (formed through memorable examples of inspirational, victorious underdogs in history, culture and sports) is one that beats the odds. Participants presumably called on this prototype when asked to estimate the likelihood of success of hypothetical underdogs in the present scenarios, providing more optimistic estimates than the oddsmakers. It is important to note that

people were not so optimistic as to believe that the underdog was a top-dog, as the average estimate of success never reached the 50% mark in any of the vignettes.

Study 3: The Looming Success of the Underdog – A Recognition Task

Bartlett (1932) was the first to make the distinction between reproductive and reconstructive memory. The former is the rote production of material from memory, whereas the latter refers to active processing of filling in missing elements while attempting to recall. It is assumed that when people try to remember material rich in meaning and detail (e.g., video footage, text, or prose), this effort is characterized by reconstructive processes. Loftus and Palmer (1974) demonstrated the flaws of reconstructive memory in their seminal work about the semantic integration of verbal information into the visual memory. Their participants were more likely to falsely remember seeing broken glass from an accident they watched a week ago when asked whether the cars *smashed* into each other as opposed to *collided, bumped or contacted*. This finding makes evident that the context (even if only defined by a word chosen to describe the accident) is influencing reconstructive memory and the direction of the false memories is in line with the expectations set forth by this contextual information.

Bransford and Franks (1971) tested the ideas of Bartlett by exposing their participants to various sentences and then asking them whether they were novel or part of the acquisition list. Results indicated that participants spontaneously integrated the information expressed by a number of non-consecutively experienced but semantically related sentences into holistic ideas, whereupon they encompassed more information than

any acquisition sentence contained. In addition, participants felt most confident "recognizing" sentences which expressed all the semantic relations characteristic of a complete idea, in spite of the fact that such sentences expressed more information than was communicated by any single sentence in the acquisition list. Thus, the notion of the superiority of "idea acquisition and retention" over the individual sentence memory received empirical support.

Thus, it appears that people are likely to remember the general ideas or the gist, but not the exact words used to express these ideas (Sachs, 1967) or the minute details of the gist. To fill in the gaps, people often infer or assume what happened. Possible sources of such false memories are varied and can be driven by "indirect" or suggestive remarks by others (Loftus & Palmer, 1974), direct suggestions (Loftus, 1979) or inferences based on prior knowledge or schemas.

Schemas are structured representations of objects, events, individuals, social roles, or any other type of concept which contains representations of both objects and their predicates (relations between objects, attributes, etc.), where relations can be causal, functional, thematic, social, etc. Established schemas represent the gist of several instances of the same concept. Each time we encounter a new instance of a concept, it is incorporated into the schema. Schemas determine what we remember as an instance of a concept, for how long we remember it, and how available the information is. Schemas also provide expectations, so that when we encounter a new instance of a concept, we do not have to process all of the information, but can instead rely on the information already

contained in the schema to do most of the work. Alternatively, when a new case, which is missing an important component of the already well-established schema, is encountered, we may fill the gap automatically.

Deese (1959) and later Roediger and McDermott (1995) masterfully demonstrated these processes in their well-designed studies. Participants were asked to study lists of 12 words (e.g., *white, dark, cat, charred, night, funeral, color, grief, blue, death, ink, bottom, coal, brown, gray*) while each list was composed of associates of one non-represented target word (e.g., *black*). Upon immediate free recall tests, the non-presented targets were falsely recalled 40% of the time and were later recognized with high confidence. In a second phase, after increasing the number of sets of lists in the learning stage, participants had a staggering false recall rate of 55% and on a later recognition tests participants produced false alarms to these items at a rate similar to the hit rate. In summary, these authors concluded that extra-list intrusions and the resulting false memories creation under schema conditions and cognitive overload was a robust and significant phenomenon to be reckoned with.

The false memory paradigm provided another opportunity to further explore the underdog construct. As *looming success* is predicted to be an integral part of the underdog construct, it was postulated that, when reading bogus articles about a competing entity with low expectations for success (without mentioning the word *underdog* in the text), participants would falsely remember seeing the word *underdog* under certain circumstances. More specifically, this study tested whether participants were more likely

to falsely remember seeing the word *underdog* in a story describing a disadvantaged team that eventually won (vs. lost). It was hypothesized that: (1) participants in the Underdog Before Competition and the Underdog Who Later Wins conditions would have higher false recognition rates for the word *underdog* as compared to participants in the Underdog Who Later Loses condition; (2) participants in the Underdog Before Competition and the Underdog Who Later Wins conditions would have longer reaction times on the *underdog* recognition trial as compared to those in the Underdog Who Later Loses condition; (3) participants in the Underdog Before Competition and the Underdog Who Later Wins conditions would be significantly less confident in their *underdog* false recognition decision than those who were exposed to the Underdog Who Later Loses condition (in other words, those who correctly remember not seeing the word underdog in the Underdog Who Later Loses condition will be more confident than those in the other two conditions, who will be more likely to falsely remember).

Method

Participants. One hundred students participated in the study. After close scrutiny responses from eight participants were eliminated due to either not complying with or failing to understand the directions. Of the remaining participants, the average age was 19.96 years (SD = 2.62). Seventy-four participants were females while 18 were males.

Procedure. Upon entering the lab, participants were told that the study explored reading comprehension and spatial abilities. They were told by the research assistant that

there were three phases to the experiment: (1) reading two text passages (see Appendix C), (2) completing two pencil and paper maze tasks, each to be completed in 30 seconds, and (3) answering a computer-based questionnaire about the texts they had read in the first phase.

Participants were seated in front of a computer monitor and were assigned to read one of three possible vignettes presented to them using Superlab stimulus presentation software provided by Cedrus (www.cedrus.com). These vignettes (see Appendix C) depicted either (1) a team with a slim likelihood of success about to face a mighty rival in an important match, (2) a team with a slim likelihood of success that faces a mighty rival in an important game and wins, or (3) a team with a slim likelihood of success that loses an important game to a mighty rival. All other content was kept as identical as possible. Thirty-two participants were exposed to the before competition vignette, twenty-nine read about a surprise win of the weaker team, while thirty-one read a scenario about the weaker team losing. None of the vignettes in the three conditions included the word *underdog*. Participants were given as much time as they wanted to read the text.

Next, all participants read an additional text which served as a distracter (see Appendix C) and were then administered two distracter maze tasks to be completed in 30 seconds each timed by the research assistant. All mazes were 8 x 8 inch rectangular shaped. The distracter task was planned such that within the time allotted for the task participants would be unable to solve the maze. The rationale in completing this phase was that recognition memory is typically very strong and, thus, at least minimal time had

to elapse in order for possible false memories to be created (Roediger & McDermott, 1995).

Following the maze distracter task, a brief practice was administered simulating the upcoming recognition task. Specifically, participants were shown six graphic symbols on the computer screen (all on one acquisition slide), after which they were asked to recognize the symbols presented one at a time in a series of following slides indicating whether they appeared or not in the original acquisition screen. Participants were instructed to place their index fingers on either the 'L' key (denoting *Yes*) or the 'A' key (denoting *No*). In order to maintain uniformity, participants were asked to keep their fingers on the respective keys at all times during the experiment. In addition, adhesive stickers were placed on two adjacent keys to help participants remember their functions ("Yes" on a key adjacent to the *L* key, "No" on a key adjacent to the *A* key).

Upon completion of the practice items, participants were asked to remember the competition vignette they had read in the first phase of the experiment. Next, they were presented with a series of words, each presented on a separate screen, and asked to indicate whether they were novel or whether they had appeared in the original text. The word *underdog* always appeared third on the list so that participants had received some practice before encountering the underdog stimulus (while, on the other hand, keeping priming by other stimuli to a minimum). In total, ten recognition items were presented in this phase, five of which had appeared in the original vignette while five were novel. Immediately following the recognition task, during which the participants' recognition

decision (Yes/ No) and reaction time were recorded, participants were also asked to rate their confidence with regard to their recognition decision for the *underdog*. A 4-point rating scale was used, with 4 = *Very confident*, 3 = *Confident*, 2 = *Somewhat confident* and 1 = *Not sure at all*. In addition, as a manipulation check, participants were asked who won the game.

Results

The first hypothesis was that participants would be more likely to falsely remember reading the word *underdog* when the vignette: a) described a competition where the outcome was not yet known, and b) after the weaker entity surprisingly won, but not after the weaker entity lost. This hypothesis was not supported: There were no differences in false recognition rates for the unknown outcome (Underdog Before) condition (9 times out of 32, or 28%), after the weaker entity surprisingly won (Underdog After Win; 4 times out of 29, or 14%), or after the weaker entity lost (Underdog After Loss; 7 times out of 31, or 23%), χ^2 (2) = 1.87, $p > .05$.

The second hypothesis predicted that significantly more time would be required to make the decision of whether the word *underdog* appeared in the outcome unknown (Underdog Before) or surprising win (Underdog After Win) scenarios, as compared to the after losing (Underdog After Loss) scenario. Examination of the distributions of the reaction time values revealed both lack of normality and the existence of outliers. Five extreme values were eliminated. Reaction times distributions are notoriously non-normal

by their very nature, and the use of transformations has been a common analytical approach in this field. Based on the shape of the distribution (positively skewed, with most values concentrating at the lower end of distribution), a natural log transformation was applied to the original reaction time measures (Tabachnick & Fidell, 2001). The changes in the skewness and kurtosis of the reaction time variable can be seen in Table 1.

Table 1.

Mean Scores and Normality indicators of the Reaction Time Variable, prior to and following Log transformation

	M (SD)	*Skewness (SE)*	*Kurtosis (SE)*
Reaction Time	1669.24 (906.65)	2.41 (.25)	7.64 (.50)
Reaction Time^{ln}	3.15 (.15)	.18 (.26)	-.52 (.51)

A one-way between-group ANOVA using the log-transformed reaction time values revealed that there was no main effect of type of scenario on the reaction time of responding to the *underdog* item, F (2,84) = .54, $p > .05$ (see Figure 4).

The third hypothesis was that participants would be significantly more confident when making the decision with regard to whether the word *underdog* appeared in the Underdog After a Loss condition than in either Underdog Before a Competition or Underdog After a Win scenarios. A one-way between-group ANOVA revealed no main effect of the condition on the confidence level, F (2,89) = 2.34, $p > .05$ (see Figure 5).

Figure 4. Mean reaction times (after Log transformations) in response to the Underdog item, across 3 conditions.

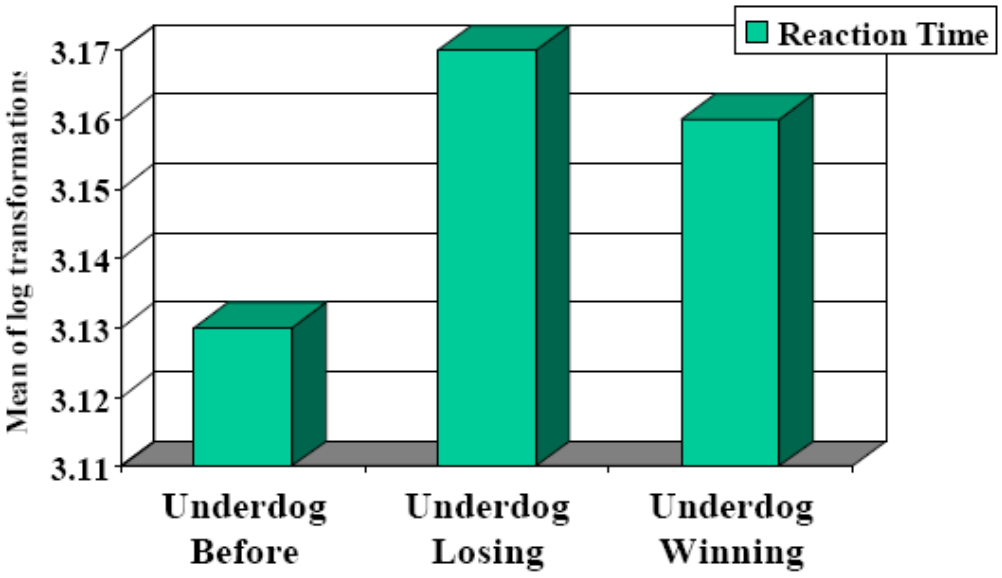
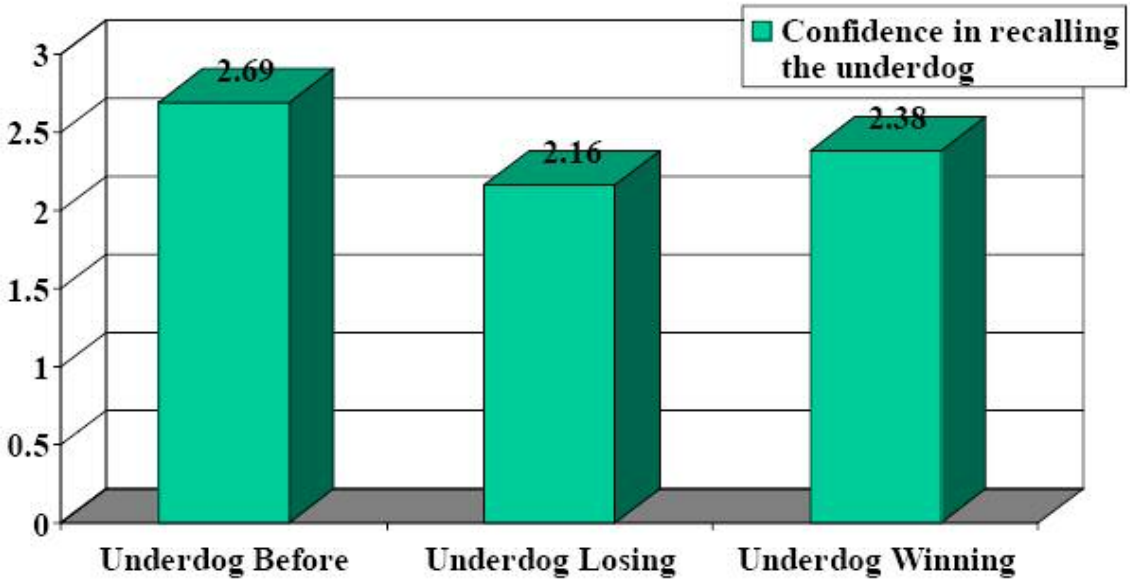


Figure 5. Confidence ratings in for Underdog item recognition, across conditions.



Finally, a manipulation check revealed that 10 participants (9.2%) were unsure of the outcome of the game after answering the questions while 21 participants (23%) made mistakes in stating the outcome. Analyses based on only those participants who were correct in the manipulation check also revealed no support for any of the hypotheses.

Discussion

None of the proposed hypotheses was supported in this study. The false recognition rates for the word *underdog* were not different across the conditions, that is, when the outcome of the competition was unknown vs. after a surprise win by the weaker team vs. after an expected loss by the weaker team. Similarly, no differences were detected with regard to the reaction times when making the recognition decision for the *underdog* item across the conditions. Thus, the proposed explanation of selective attentiveness to the exemplars of successful underdogs failed to gain empirical support.

Several explanations exist as to why the study failed to support the proposed underdog schema model, most of which are grounded in the limitations of the research design. First of all, the manipulation check revealed that the percentage of participants who were either not sure of the final outcome or answered incorrectly was high (32.2%). The proposed mechanism of selective attention to winning underdog exemplars requires that the participants *remember* the state or the result of the competition at the time when they're asked to define the nature of the event in retrospect. Thus, given that a third of the sample failed to recall the correct result of the competition, it is possible that these

participants did not generate the underdog schema at all and, subsequently, could not have "falsely recognized" the word *underdog* as fitting into the missing template.

Secondly, the false recognition rates were overall quite low (22%). Given the number of participants in the study (92) in three conditions, this rate might have been insufficient in terms of the power to detect some effect. Participants were tested on their memory only a few minutes after reading the vignettes. Recognition memory is typically very robust in young, healthy people (Bayen, Phelps & Spaniol, 2000) and, thus, the limited period of time between the learning and the testing phases was probably not long enough to "induce" forgetting (necessary for substantial false recognition).

Another possible limitation is grounded in the mismatch between the proposed phenomenon of looming success and strategy chosen to examine it in the current experiment. While it was predicted that participants would err (i.e., recognize the word *underdog* when it was never part of the vignette) in the scenarios where the outcome was not known or after the weaker entity won, in reality, outside of the laboratory, the misclassification actually occurs in situations whereupon lesser entities labeled as *underdogs* in competition lose, and upon losing are forgotten as underdogs.

In sum, the first three studies attempted to clarify the underdog construct and to explore the degree to which the dictionary definition matched the one used by people in every-day context. This effort extended well beyond the linguistic realm and may explain the underdog phenomenon based on heuristic-cognitive forces, which deem looming success imminent. However, this is not the only mechanism at hand. In the next

experiment, several manipulations were undertaken to explore the conditions of underdog support vs. rooting against advantaged entities, as well as the possible place of the self in why underdogs are supported.

Study 4: Why Do We Support Underdogs?

Study 4A: The justice framework: Schadenfreude or Underdog support:

A Memory Test to Detect Attentional Focus

One possibility within the justice realm is that people do not so much root for the underdog as much as they root *against* the more dominant entity. That is, what may appear to be sympathy may instead be motivated more by pleasure in seeing a powerful figure or team knocked off its pedestal, a phenomenon known as *schadenfreude,* or the joy people take in others' fall from grace. Elections for public office, for example, are by definition a zero sum game: When one candidate wins a seat, its opponent invariably loses it. It is possible that standing behind the underdog is just the mirror image of aspiring for the strong side to lose. Maybe, because of social desirability, among other possible reasons, nonpartisan observers publicly support the underdog while privately aspire for the mighty to fall.

People are taught from infancy to think that good things that happen to others should please them, while bad things that occur to others ought to be upsetting and disturbing to the "moral" person. Sometimes, as we mature, the feeling of joy in the misfortune of others creeps on us. Nietzsche (1887/ 1967) was the first to label the concept of *schadenfreude* as an emotional reaction in the repertoire of feelings experienced by human beings. He described it as the malicious pleasure that people take

in the misfortune of others. Heider (1958) claimed that *schadenfreude* is counter-productive in the social setting because pleasure is a discordant reaction to another's downfall and hence it establishes an antagonistic relationship between the person who experiences it and its target. *Schadenfreude* is opportunistic by nature, indirect and passive. In other words, people who experience *schadenfreude* do not actively seek the demise of other people or plan for it, but feel a burst of pleasure when encountering news about a setback someone else suffered. Nietzsche added that seeing other people suffer and experiencing *schadenfreude*, while not actively engaging in direct competition, is socially less acceptable.

In their research on the 1980 presidential elections described before, Ceci and Kain (1982) determined that polls did not create positive feelings towards the underdog but, instead, created a negative reaction towards the candidate depicted as having a dominant position. Thus, participants who were presented with one contender as leading in an early stage, swayed away from him after the exposure to the polls (a ranking of 3.27 on a 7-point scale, compared to a 3.94 ranking in the control group). But when the same group was later presented with another poll indicating a shift in the polls towards the previous underdog, making him a dominant frontrunner, the participants shifted their support once again back to the current underdog. This shift, however, was approximately to the same rating held by the control group (3.9), suggesting that, "the seemingly large shifts between the …inconsistent conditions were due to oppositional reactivity, not necessarily underdog feelings. Subject shifting….did not surpass the initial position" and

"dominance information did not evoke a positive move towards the underdog, merely a movement away from whoever was currently being touted as dominant" (p. 240).

Smith and colleagues (1996) sought to explore the conditions under which *schadenfreude* was most likely to occur. They presented participants with a short video of a prospective medical student describing himself. The student was made to appear either superior or average. An epilogue informed participants that the student was recently caught stealing and thus would not be admitted to medical school. Participants who watched the interview of the better-qualified student were more pleased upon learning that this person suffered the setback than participants who watched his average counterpart. These findings lent support to the *schadenfreude* phenomenon and introduced envy as a state antecedent to the joy people take in others' fall from grace.

Feather and Sherman (2002) tested the hypothesis that *schadenfreude* was more closely related to resentment (defined as publicly expressed when the outcome is undeserved) and a wish to correct a perceived injustice than to envy (which is privately held and can occur without a sense of injustice or resentment). In their study, participants were exposed to scenarios in which a student with a record of either high or average achievement that followed high or low effort subsequently suffered failure under conditions of either high or low personal control. The authors found that resentment about the student's prior achievement could be distinguished from envy, based on the results of factor analysis of the data. Specifically, when participants deemed the result to be unjustified (i.e., the student was not working hard but had high ability and grades) they

expressed resentment towards him. Alternatively, when he was working hard and succeeding, only envy was reported. *Schadenfreude* about the student's subsequent failure was predicted by resentment and not by envy; thus, deservingness was a key antecedent to the manifestation of the *schadenfreude* sentiment.

Leach and colleagues demonstrated *schadenfreude* in the sports domain as it manifested itself in inter-group relations (Leach, Spears, Branscombe, & Doosje, 2003). Dutch soccer fans were asked about their feelings in regards to failure of the German national team in the international arena. Based on pilot studies and history, the researchers established that Germany was perceived by the Dutch as a mighty competitor and, hence, predicted and subsequently found that the Dutch would be likely to experience *schadenfreude* in the face of a German defeat by a third party (who wouldn't?). The authors argued that, although it is generally unacceptable to experience malicious feelings such as dislike, the perceived importance of the issue at hand as well as the inferiority threat (in this case, based on past history of German aggression and relative size of the two nations) might have made *schadenfreude* more accessible and acceptable.

So why would we expect nonpartisan observers, with no prior knowledge about two competing entities, to develop *schadenfreude* after having read short vignettes describing unequal competitors? A possible answer may lay in social comparison theory (Festinger, 1954; Tesser, 1991; Wills, 1991). In this context, the envy or resentment is literally defined by a comparison process. Following the finding that sympathy is more

easily generated by misfortune happening to average, rather than superior, people, Brigham and colleagues proposed that *schadenfreude* arises when people feel that a misfortune befalling on others removes the negative, self-related effects of an invidious comparison (Brigham, Kelso, Jackson, & Smith, 1997). Moreover, because of its distinct features (i.e., opportunistic, indirect and passive, by definition), *schadenfreude* becomes a welcomed guest by a nonpartisan observer who has little or no impact whatsoever on the developing nature of the competition.

In the context of the present investigation, it was hypothesized that averageness, or proximity to the mean in terms of resources availability, would set the motivational frame of reference when watching an underdog-top dog competition. When a favorite had a wealth of resources, which was substantially larger than the average, then participants would be driven by *schadenfreude* and, as a result, would pay more attention to events associated with the favorite. It was expected that they would do so while professing underdog support and not rooting against the top-dog, when asked *directly* about their support after watching a basketball game in which an underdog and a favorite were depicted. This tendency was hypothesized to be at least partially driven by social desirability concerns. On the other hand, when the underdog entity had substantially lower resources than the average, while the favorite was just about average, the attentional focus would likely to be placed on events associated with the underdog, generating stronger or better memories for these events. This would not be expected to change, however, the pattern of the participants' responses, when directly asked about

their support for the two entities; that is, the underdog support should be evident just like in the previous condition. What was expected to be different was the memory (as measured by either recall or recognition) for details associated with either of the competing sides.

In sum, whatever basic process took precedent – *schadenfreude* or rooting for the underdog – the observable outcome by non-partisan observers would be the same (i.e., rooting for the underdog). On the other hand, the possible underlying motivations behind the support people extend to underdogs could be diverse.

The current study attempted to bypass social desirability concerns in *schadenfreude* versus underdog support by testing memory for events in addition to just self-reported support rates. It was predicted that reading about an underdog with noticeably fewer than average resources would lead people to sympathize with the underdog and thus focus their attention on the underdog (i.e., remember more details associated with it) compared to the superior opponent. In contrast, reading about a top dog, who has noticeably greater resources than average, would make its advantage salient, thereby arousing motivations to wish for it to lose. These motivations or wishes were not, however, expected to be demonstrated when directly queried about it, but were predicted to shift the participants' focus of attention to the top dog (i.e., remember more details associated with it) relative to the underdog.

Method

Participants. The sample included 161 participants (34 males and 127 females) who received a class credit for their participation. Eighty-four participants were Caucasian (52.2%), 20 were of Hispanic descent (12.4%), 19 were Asian-American (11.8%), 12 participants identified themselves as African-American (7.5%), 12 labeled themselves under the Other racial category and 14 did not report ethnicity. Sixty-four reported that they watched basketball on TV very rarely (39.8%), 27 watched it rarely (16.8%), 33 reported watching basketball sometimes (20.5%), 18 watched it often (11.2%) and 5 (3.1%) watched it all the time. Thirty-nine participants (24.2%) did not like basketball at all, 43 did not like it much (26.7%), 45 liked basketball somewhat (28%), 13 liked it quite a bit (8.1%) and 9 (5.6%) liked the game very much. All but one participant did not recognize any players from the clip, while one participant made a wrong identification and thus was retained in the analysis.

Procedure. Participants watched an 8-minute video clip of a game between two basketball teams (Tau Vitoria from Spain and Panathinaikos Athens from Greece) competing for the European cup after reading a short vignette (Appendix D) describing the history of the teams' rivalry, with an underdog - top dog scenario (the team described as the underdog was counterbalanced across participants). In addition to information about popular perceptions of expectations for each teams' success, as denoted by betting money placed on each side, participants were also presented with the teams' relative financial resources in comparison to the league average. In one vignette, the underdog

was significantly poorer than the league average while the top-dog was about average in that regard. In the second vignette, the underdog was about average while the favorite was significantly richer than the mean (counter-balanced, see Appendix D).

After reading the vignette about the game and watching the video clip, participants were asked to recall certain events (e.g., how many points did each team score; how many points did each team score during the clip; how many 3-point shots did each team make; what was each team's shooting percentage from the line; how many times did each team dunk the ball; how many fouls did they commit; see Appendix D). Participants were also asked to identify players from a line-up of photos and to identify to which team they belonged. These recall measures served as an implicit index of where participants focused their attention. Accuracy ratings were computed through the standardized aggregation of all memory items.

Lastly, the participants were asked to report which team they supported and which team was the underdog and top dog (see Appendix D for materials). Study 4a is, thus, a 2 (*top dog versus underdog, within subjects)* by 2 (*favorite resources outlier vs. underdog resources outlier, between subjects*) mixed model design.

Study 4a was a replication of a study attempted by Goldschmied (2005) with the exception of two major changes. First, instead of asking participants about names of players and jersey numbers, they were queried about events in the game, which could be attributed to each team's performance (i.e., number of dunks, three pointers made and fouls committed). This seemed to be a more natural way viewers follow the game.

Secondly, in the previous attempt, schadenfreude was predicted based on the mere mentioning of resources disparity. One condition included a competition between an underdog and a favorite with no resources mentioned while a second one included the same description with addition of a large payrolls disparity. This manipulation, however, did not produce the predicted schadenfreude shift. In the present study, instead, it was predicted that underdogs would be supported regardless of the type of vignette participants were exposed to prior to watching the clip. More importantly, it was predicted that participants would generally attend more closely to the outlier.

Results

First, to establish that neither team was favored even before it was assigned the underdog label, 26 participants were asked to read a vignette describing that the teams were of the same strength and caliber. In this condition, there was no significant difference in participants' wishing the Greek team to win the game (M = 6.23, SD = 2.23) vs. the Spanish team winning the game (M = 5.77, SD = 2.73), t (25) = -.51, $p > .05$.

In addition, across the four underdog-top dog conditions, without taking into account the underdog-top dog status of the teams, there was no preference in participants' wishing a Spanish team to win (M = 5.93, SD = 2.5) vs. wishing a Greek team to win (M = 5.41, SD = 2.59), t (160) = 1.39, $p > .05$.

Support. A mixed between-within subjects analysis of variance was conducted to explore the impact of status (underdog & top-dog – within subjects variable) and outlier

condition (underdog as a financial outlier vs. top-dog as a financial outlier – between subjects variable) on support tendencies. There was a significant effect of status [Wilks' Lambda = .77, F (1,133) = 40.75, $p < .01$, multivariate partial eta squared = .24.] such that the underdog received overwhelmingly more support (M = 6.78, SD = 2.26) than the top-dog (M = 4.44, SD = 2.32). The main effect for outlier condition [F (1, 133) = 1.30, $p > .05$] and the interaction effect [F (1, 133) = .14, $p > .05$] did not reach statistical significance.

Support tendencies were also explored as a dichotomous variable whereby participants were asked which team they liked best on first impression. Across the four conditions that depicted uneven competitions, the underdog was supported more than the top dog. When the Greek team had a huge payroll relative to the mean, only 32% (10 of 31) of participants liked it relative to the Spanish underdog. When the Greek team had a significantly smaller payroll than the average club, 64% (21 of 33) liked it more than its opponent. When the Spanish team had a much larger payroll than average, it was liked by only 33% (12 of 36). When the Spanish team had a smaller payroll than the average club, it was supported by 80% (28 of 35) participants, χ^2 (3) = 22.21, $p > .05$. Thus, across the four conditions, 70% of participants favored the underdog. In the even condition, the participants were almost evenly split with 14 liking the team from Spain and 12 preferring the team from Greece.

Similarly, when participants were asked for whom they would root, participants were in favor of the underdog. When the Greek team had a huge payroll, 68% (21 of 31)

participants rooted for the Spanish underdog. When the Greek side had significantly less money than the average club, 52% (17 of 33) rooted for it over its opponent. When the Spanish team had a larger payroll than average, 78% (28 of 36) rooted for the Greek team. When the Spanish team had a smaller payroll than average, 71% (25 of 35) rooted for it over the opposing team, χ^2 (3) = 5.82, p > .05. Thus, across the four conditions, 67% of participants rooted for the underdog, and in the even condition the participants were almost evenly split with 12 rooting for the Spanish team while 14 preferred the Greek side.

Memory. As part of the manipulation check to verify that the participants indeed read the vignettes, they were asked to state the countries that the teams represented. One hundred and forty, out of 161 (87%), reported correctly that Tau Vitoria originated from Spain, while 146 out of 161 (90.7%) reported accurately that Panathinaikos Athens was a Greek team. When queried about the colors of the uniforms, 158 out of 161 (98.1%) participants correctly recalled that Vitoria was wearing a white uniform, while 159 out of 161 (98.9%) remembered that Panathinaikos was in green uniforms.

Before assessing the schadenfreude hypothesis, overall accuracy of memory was explored. For the Spanish team, 114 out of 135 participants (84.4%) correctly recalled that the team had 70 points when the clip they had watched ended. A one-sample t-test demonstrated that participants recollection (M = 69.93) was not significantly different than the actual score, t (134) = -.33, p > .05. For the Greek side, 102 participants out of 134 (75.6%) correctly recalled that the team had 69 points when the clip had ended. A

one-sample t-test demonstrated that participants recollection (M = 68.69) was not significantly different than the actual score, t (133) = -1.41, p > .05.

Also, an attempt was made to verify that participants recalled with clarity the differences in budgets for the two clubs as well as the average payroll for teams in the continent. In the condition in which the top-dog had a significantly higher-than-average payroll ($107 million), the participants' mean estimate of $107.88 was remarkably close (Mode = 107, SD = 36.88) and not significantly different from the original number, t (63) = .19, p > .05. As for the underdog's budget in the same scenario ($22 million), participants again recalled a budget quite correctly (M = 24.52, SD = 18.06), which was not significantly different than the payroll in the article, t (63) = 1.12, p > .05. In the underdog-as-lower-than-average scenario, participants' memory of the top-dog budget (M = 21.52, SD = 12) was not significantly different than the original budget ($22 million), t (65) = -.33, p > .05. Also, participants' recall of the underdog's budget (M = 10.15, SD = 27.05) was not significantly different than the actual figure ($5 million), t (67) = 1.57, p > .05. Lastly, participants' recall of the average budget was examined. Across the two scenarios, participants' memory after excluding one outlier (M = 25.13, SD = 24.6) was not significantly different than the reported figure of $21 million, t (110) = 1.77, p > .05. Thus, it was concluded that participants' memory was very good in regards to the information they read in the vignette.

Following, the first hypothesis of the study was assessed, which postulated that memory was propelled alternatively by either underdog support (improved memory for

the underdog) or schadenfreude (improved memory for the top-dog) and that the changing focus was derived by deviation from the average. Each of the memory categories was analyzed separately. First, each observation was compared to the real score in the clip and a difference score was computed. In addition, the absolute values of these difference scores were also created. The analysis of the differences in memory between teams whose budget was significantly different than the average (an underdog with a $5 million in one scenario and a top-dog with a budget of $107 million in the second scenario) to those whose payroll was not markedly different from the average (a top-dog and an underdog with $22 millions payroll) was conducted for both difference scores (absolute and non-absolute values).

First, a paired samples t-test was conducted for the final score when the clip ended. There was no difference in errors made for the extreme budget team (M = 0.25) and the average budget team (M = 0), t (133) = .62, p > .05. A second paired samples t-test was conducted for points scored during the clip. There was no difference in errors made for the extreme budget team (M = -0.48) and the average budget team (M = 0.38), t (124) = -1.60, p > .05. A third paired samples t-test was conducted for 3-pointers scored during the clip. There was no difference in errors made for the extreme budget team (M = 0.92) and the average budget team (M = 0.94), t (132) = -.125, p > .05. A fourth paired samples *t*-test was conducted for shooting percentage from the foul line. There was no difference in errors made for the extreme budget team (M = -1.23) and the average budget team (M = -1.08), t (129) = -1.62, p > .05. A fifth paired samples t-test was conducted for

dunks made during the clip. There was no difference in errors made for the extreme budget team (M = 0.42) and the average budget team (M = 0.34), t (132) = 1.10, p >. 05. Lastly, a paired samples t-test was conducted for fouls committed during the clip. There was a significant difference in errors made for the extreme budget team (M = -.28) and the average budget team (M = -.06), t (133) = -2.16, p = .032. However, this difference was contrary to the hypothesis. The same analysis was conducted for the player's photos. Three players from each team were presented to the participants (with two distracter photos which were not included in the analysis). A paired samples t-test was conducted for the participant's recognition. There was no significant difference in recognition level of the extreme budget team (M = 1.15) and the average budget team (M = 1.06), t (120) = 0.70, p > .05. Similar analyses were conducted using the absolute values of errors, but results were no different.

Discussion

The main hypothesis of this study was that people's attentional focus (as measured by the accuracy of their memory) would be directed at outliers – either underdogs that were financially disadvantaged, or top dogs that were highly advantaged. Such a finding would shed light on the conditions under which underdog support is based mainly on sympathy for the disadvantaged or, contrary, resentment of the advantaged (i.e. schadenfreude). This hypothesis was not supported, as there were no clear memory differences across conditions.

One of the problems evident from the onset of the study is the low level of interest the participants had towards the game of basketball and the low enthusiasm they showed overall towards watching it on TV. This pattern of insignificant results cannot be explained, however, by inattentiveness to the clip shown to the participants, as their memory was overall good when the underdog-top dog manipulation was not considered. Participants were strongly in favor of the underdog across all four conditions regardless of the departure from the average hypothesis.

Thus, it seems that rooting for the underdog, at least for those who are not avid fans of the game, does not translate into memory biases but does result in differing performance attributions for underdogs and top dogs, as demonstrated in a previous study using a similar manipulation of watching a basketball competition between two unknown teams (Goldschmied, 2005). This incongruence between the memory for game-related facts and the attributions made based upon them was also evident in previous research conducted by Stone, Perry and Darley (1997), who demonstrated that, after being exposed to an audio broadcast of a basketball game, participants remembered equally well the statistics of what they presumed to be either a white or a black basketball player, but when asked to make attributions about his performance, significant differences were found whereupon participants credited the white player with court smarts while emphasizing the natural ability of his African-American counterpart.

Overall, the failure to establish conditions in which schadenfreude was evident in this study might be due to the novelty of the stimulus materials. It is plausible that

because the current research employed bogus and newly encountered entities with which the participants were unfamiliar before, schadenfreude never emerged as a motivation. Previous studies introducing participants to specifically newly created targets did manage to elicit schadenfreude motivations, but in the majority of the cases the frame of reference were the participants themselves (i.e., a description of a superb students to a sample of students; Smith et al., 1996).

Study 4B: Implications for the Self: The Effects of Underdog Success on the Self

Past research has demonstrated that underdogs are overwhelmingly supported (e.g., Ceci & Kain, 1982; Frazier & Snyder, 1991; Vandello et al., in press). It is postulated that the robustness of the phenomenon may be derived from past and present experiences of 'me-as-an-underdog' perception of the self. If the underdog construct is important to the self, being exposed to a situation where an underdog prevails should have an impact on various self-relevant aspects such as self-esteem and core beliefs one holds about the nature of the social world around him/her. It is interesting to note in this regard that the day in which the American National Olympic Hockey Team surprised the mighty Russians in what later came to be known as 'the miracle on ice,' was the day with the least reported cases of suicides in the USA between the years of 1972 and 1989 (Joiner, Hollar, & Van Orden, 2006). In the context of the beliefs about the world, two main theories come to mind: the Protestant Work Ethic (Weber, 1904) and Implicit Theories of Morality (Chiu, Dweck, Tong & Fu, 1997). While the former focuses on beliefs about personal freedom and the power of individuals to work autonomously towards achieving goals, the latter posits that people differ with regards to belief about whether the world is governed by fixed reality (entity theory) or a malleable one (incremental theory). Thus, it was hypothesized that those participants who were exposed to an underdog winning and who initially thought it would do so, would

temporarily change the way they perceived the social world around them such that they would experience a marked boost in self-esteem, a stronger belief in hard work as the basis to bring about transformation, and an overall a greater conviction in the malleability of the reality around them.

Thus, more specifically, "believers" in the underdog who had their belief confirmed (i.e., were told that the underdog indeed surprised and prevailed) should have higher levels of state self-esteem, a stronger belief in the protestant work ethic and a stronger belief in *incremental* tendencies (the malleability of the world), above and beyond of their identification with the underdog. Participants in all other conditions (believing that the underdog lost and told that it did, believing that underdog lost and told that it ultimately prevailed and believing that underdog won but told that it eventually lost) would show markedly lower levels of state self-esteem, belief in the malleability of the world and the viability of the protestant work ethic. To test this, after having been exposed to the basketball video clip (Study 4a), which was stopped before the conclusion of the game when the score was close, participants were told that the underdog either won or lost the game. The data were analyzed with three separate ANCOVA analyses for each of the measures, which served as the dependent variables. Assignment of the participants to an underdog win or loss was one factor while believing (*Yes* or *No*) in the ability of the underdog to triumph was the second. In order to rule out the possibility that the effects could be simply driven by greater identification with underdogs, the degree to which participants identified with the underdog was also measured and controlled for.

Method

Participants. The same 161 participants who participated in Study 4a took part in Study 4b.

Procedure. The second phase of Study 4 examined how believing in underdogs and witnessing them prevail could affect the self and beliefs about the social world. Immediately following the completion of the underdog support questions, participants were asked to answer a series of questions about their level of identification with the two teams (Appendix D). The last question asked the participants to predict which team won the game. Once they had done so, the research assistant entered the room and asked again which team they thought had won the game. Next, the research assistant informed them of the final score: Half of the participants were told that the underdog team had won while the other half were informed that the favorite had eventually prevailed (in a counter-balanced fashion). The research assistant then showed the participants a short clip from the supposed crowd celebrations following the game to let the outcome be absorbed. The participants were then informed that the experiment ended but were prodded to participate in another, ostensibly unrelated, brief study "since the time allotment for the original study was not over yet" (the participants were informed on the online research participation tool that the study would last 30 minutes, while it usually took no longer than 20 minutes). The participants then read and signed another bogus informed consent form for an ostensibly separate study and completed three

questionnaires measuring their state self-esteem, implicit theories about the world (incremental versus entity) and Protestant work ethic.

The first scale of state self-esteem (Heatherton & Polivy, 1991) was a 20-item state inventory measuring how one felt at the time of taking the test after underdog success or failure. The State Self-Esteem Scale (SSES) has 3 correlated factors: performance, social, and appearance self-esteem and had proven to be sensitive to laboratory manipulations and psychometrically sound in measuring clinical changes in self-esteem.

The Protestant Ethic Scale of Quinn and Crocker (1999), a 16-item scale with a reliability coefficient of .79 (see Appendix D), was also used.

Lastly, the 9-item scale of Implicit Theories of Morality by Chiu, Dweck, Tong and Fu (1997) assessed entity (fixed reality) vs. incremental (mutability) tendencies. In this unidimensional questionnaire, agreement with items reflected a greater endorsement of an entity worldview, and disagreement reflected endorsement of an incremental worldview. Three main domains covered by this measure are world, morality and intelligence. The test-retest reliability for a 2-week interval was .80 (Dweck et al., 1995; Appendix D).

Results

First, it was explored whether participants identified with the underdog or the top-dog. Three questions measuring identification (i.e., How much do you identify with Tau/

Panathinaikos? How much do you see yourself in Tau/ Panathinaikos? and How similar are you to Tau/ Panathinaikos?) were aggregated (α = .92) to form an overall identification measure. Participants identified significantly more with the underdog (*M* = 14.87, *SD* = 6.59) than with the top-dog (*M* = 11.79, *SD* = 5.65), *t* (134) = 4.73, *p* < .001. There was no significant difference between the identification participants felt towards Panathinaikos – the Greek team (*M* = 12.96, *SD* = 6.45) vs. Tau – the Spanish team (*M* = 13.7, *SD* = 6.19), *t* (134) = 1.04, *p* > .05.

Next, the three self-report measures were assessed. All three scales exhibited high internal consistency: α = .90 for the state self-esteem scale; α = .78 for the Protestant Work Ethic Scale; and α = .82 for the Implicit Theories of Morality scale.

A two-way between-groups analysis of covariance was conducted to assess the influence of believing in the ability of the underdog to win and being informed that it did on attitude formation of the social world as well as about the self. The independent variables were whether the participant thought the underdog prevailed in the game (*Yes/No*) and whether they were told that it did (*Yes/No*). The dependent variables, which were analyzed separately, were State Self-Esteem, Protestant Work Ethic, and Implicit Theories of Morality. Scores on identification with the underdog were used as a covariate to control for individual differences.

Preliminary checks were conducted to ensure that there was no violation of the assumptions of normality, linearity, homogeneity of variances, homogeneity of regression slopes, and reliable measurement of the covariate. After adjusting for identification with

the underdog, there was no interaction effect on state self-esteem [F (1, 129) = .04, p > .05]. Neither was there an interaction effect on the belief in Protestant Work Ethic [F (1, 128) = .76, p > .05]. Lastly, there was no significant interaction effect on Implicit Theories of Morality [F (1, 128) = .03, p > .05]. None of these analyses revealed any significant main effects.

These results suggest that people's beliefs regarding who will prevail, as well as being told which side won the competition, exerted no influence over their perceptions of the social world around them as well as how they felt about themselves.

The main finding of interest emerging from this study was the strong identification participants felt towards the underdog team. People had very little reservations to note that they saw themselves in the underdog team and that they felt similar to it. In addition, people who identified more strongly with underdogs also supported them more than people who identified less, r = 0.59, p < .05. Of note, 78 participants predicted an underdog win while only 56 thought the top-dog would prevail, despite the score being within 1 point at the end of the clip.

Discussion

Participants did not modify their self-perceptions and their beliefs about the nature of the world around them based on their feelings and the underdog faith. However, they felt strong identification with it.

As most people live average lives, it seems that when competing in various

capacities, people should experience themselves both as underdogs and top-dogs throughout their lives. However, for some reason, it seems that participants cherish their moments as an underdog more so than when they were top-dogs. An alternative perspective would argue that almost all people are underdogs and that there are very few top-dogs out there in the world (e.g., the Donald Trumps of the world), or regardless of people's own status or stature, they are always aware of the possibility of a more powerful entity that could supplant their autonomy and control, and as such the "me as an underdog" is a much more common experience than being a top-dog.

Identification in the present context can be defined as the orientation of the self such that individuals define themselves in terms of their group membership (cf. Kelman, 1961). The degree to which an affiliation affects self-definition is defined by the strength of the individual's group identification. Stronger identification leads the individual to attribute desirable characteristics of the group to the self, and to assume a greater similarity with other group members (Stotland, Zander, & Natsoulas, 1961). Some prior research in psychology went as far as measuring identification as the perceived similarity between the individual and the identification target (e.g., Dignan, 1965). To the extent that one is connected to groups that are favorably evaluated, one's social identity is positive. Accordingly, individuals emphasize the distinctive and positive aspects of group membership as a way of managing their self-image. The present results indicate that, despite the strong identification the participants felt towards the underdog, they failed to experience any changes on how they felt about themselves or the world around

them after an underdog defeat or success. This stands in contrast to previous research suggesting that individuals experience vicariously the successes and failures of the group they identify with (Kagan, 1958). It seems that the participants in the present study took more of a cognitive stand towards the underdog team than an emotional one. In other words, people might like underdogs because of what they stand for. Possibly, for the participants to care about them, they should be also interested in the context in which the underdog operates.

General Discussion

Overall, the results of the current study indicate that people in our society believe that underdogs are unique exemplars which are expected to do significantly better than the initial expectations.

Past research on disadvantaged competitors found that they were significantly supported in comparison to their much mightier opponents (Kim et al., unpublished manuscript; Frazier & Snyder, 1991; Vandello et al., in press). As a result, it was concluded that unaffiliated observers demonstrated "underdog support" tendencies. However, previous studies of this phenomenon almost exclusively used the methodology of describing a situation of disadvantage (based on either the expectations to prevail or lack of resources) of a previously unknown contender and then querying the participants about their support tendencies, *without* directly labeling the weaker side as the "underdog." Thus, one of the main aims of the current research was to explore the underdog label itself and to determine what concepts were directly associated with it in memory. The main finding was that the underdog construct was linked both to disadvantage (in congruence with the dictionary definition) but also to success. This duality, it is argued, emanates from the "looming success" component of being branded as an *underdog*. While present conditions of being an underdog may signal a state of inferiority, the future looms large in terms of overcoming the initial disadvantage.

The looming success component was then studied in a direct fashion in which a struggling entity facing stiff competition was labeled either as an "underdog" or "disadvantaged" in a bogus newspaper article. The results of such direct investigation showed that participants attributed higher success rates, above and beyond expert's predictions, for both "underdog" and "disadvantaged" competitors, but their level of optimism for the former far exceeded that of the latter.

The rosy expectations for underdogs could be the prime reason why athletes and politicians aggressively pursue the designation of an underdog even if, at times, they have to tweak the reality for their audiences and supporters as, for example, in the case of Barak Obama who has matched his financial resources with Hillary Clinton, the undisputed top-dog in the Democratic party for election 2008, but, nevertheless, willingly declared: "When your name is Barack Obama, you're always an underdog in political races. That's how it was when I ran for the United States Senate." (Associated Press [AP], 2007).

This psychological mechanism of the looming success component might be driven by the extensive media exposure of the exemplar underdogs from the past (who happened to prevail) whenever a new underdog emerges, including fictional underdog depictions in books and in popular films. While the current attempt to demonstrate this process received mixed support in Study 3, perhaps extending the time duration between acquisition and recognition in the false paradigm in future studies would allow for the proposed schematic distortions to develop (as well as overload participants with more

information to increase the false recognition rates).

Additionally, self-identification with the underdog emerged as a strong correlate with the support extended to it. Based on the results of Study 4, people seemed to easily see themselves in a struggling entity and wish for it to succeed. This identification was remarkable given that the underdogs depicted in the study were not individuals but a collective or a team. Yet, review of the underdog literature suggests that this finding is robust and even participants watching two animated rolling geometric figures climbing a hill reported identification with the one which slowed down and had a much harder time going up (i.e., the underdog) than with its non-affected counterpart (Kim et al., unpublished manuscript). Thus, it seems that the identification is not grounded in the competing entities per se, but in the perceived differences between the underdog and the top-dog.

In regards to the impact of underdogs on the self, the current study failed to establish temporary change in the self and perceptions of the social world around those experiencing an underdog triumphing. It is possible, however, that the changes should be explored in other behavioral domains, including implicit priming. For example, potentially, an exposure to an underdog may motivate people to continue and work longer on a difficult/impossible task. Perhaps also for underdogs to impact the self, the scenarios must be more emotionally engaging than the stimulus material used in Study 4.

Future studies might usefully address subtle differences between the domains in which underdogs operate and struggle to overcome the competition (i.e., politics, sports

and business). In politics, for example, the current finding of 'looming success' was not accompanied by significant support for the underdog. Other studies in this realm found some support for the "bandwagon" effect, which refers to an increased tendency to support the candidate who is, in fact, leading and gaining in the polls, rather than to a trailing contender (McAllister & Studler, 1991; Simon, 1954). This change of the tide might be associated with self-interest (Kim et al., unpublished manuscript), as people potentially perceive a domain like politics as an important avenue to influence their quality of life and the future in the broader context. Hence, however remote the underdog vignette they are being exposed to from their present situation as voters, they fail to exhibit the underdog effect because they feel it is important to support the "better" candidate. In other words, they might be guided by the notion that if support for the leading candidate is strong, then he/she is superior to the underdog and, thus, is the better choice overall. In contrast, the sports domain is devoid of far reaching implications of the competition resolution (i.e., win or loss) and, in this setting, people seem to conclusively support underdogs (Frazier & Snyder, 1991; Kim et al, unpublished manuscript; Vandello et al., in press). In this respect, in the present investigation of the semantic meaning of underdog (Study 1), it was found to be mostly linked to the sports field, given that the sport emerged as the only semantic category with specific, domain-related associates that were included in the associative map (i.e., *footbal*l), while neither politics nor business terms were mentioned as associates.

It is possible that, when it comes to perceptions about underdog entities, domain

specificity is dependent on how the underdog/top-dog alignment is determined initially across domains. Specifically, buyers in the business realm or voters in the political arena determine the strength of each competitor by either their purchasing behavior or voting tendencies, respectively, while in sports betting may be an index of relative strength but the wagers are not the reason why a contender is expected to do well or not, but rather a reflection of its relative strength. Thus, the boundary conditions of the underdog effect in the various domains should be delineated and explored further.

A different avenue for future exploration may focus on underdog support as a behavior which is intended to make the individual distinct from others and thus satisfy the need for uniqueness (Snyder & Fromkin, 1977). This human motivation seems to be a welcome guest when information on how most people behave or think is readily available. The end result of supporting the underdog may be similar to that which is proposed by the utilitarian approach but the impetus is clearly different. Thus, rather than self-shielding from an aversive emotional state (as a utilitarian approach would suggest), an underdog supporter may seek to differentiate himself or herself from the majority of the people and is therefore willing to risk the high emotional stakes just to be able to stand alone from the crowd.

Lastly, only anecdotal evidence is available regarding how robust the underdog effect is across cultures. Based on the ubiquity of the underdog story in religion and mythology it seems plausible to assume that it is evident across different national, racial and ethnical divides. However, no exploration into this realm has been conducted. It is

possible that some variants of underdog support exist cross-culturally, such as a proposal made by an Australian sociologist (“The Underdog”) that in his country the underdog need not to prevail as what matters to ensure the support of the people is the attitude of taking on the powerful establishment. As a result, failing is perfectly acceptable and even admirable. This notion is in direct contrast to the underdog entities depicted for example in the American folklore.

List of References

Associated Press (2007, January 24). *Obama: Name not an advantage in campaign.* Retrieved May 15, 2007, from www.breitbart.com/news/2007/01/24/D8MRL7M80.html.

Bayen, U. J., Phelps, M. P., & Spaniol, J. (2000). Age-related differences in the use of contextual information in recognition memory: A global matching approach. *Journal of Gerontology, 55,* 131-141.

Bartlett, F. C. (1932). *Remembering: A study in experimental and social psychology*. New York: Cambridge University Press.

Bransford, J. D., & Franks, J. J. (1971). The abstraction of linguistic ideas. *Cognitive Psychology, 2,* 331-350.

Brickman, P., Coates, D., & Janoff-Bulman, R. (1978). Lottery Winners and accidental victims: Is happiness relative? *Journal of Personality and Social Psychology, 35,* 917-927.

Brigham, N. L., Kelso, K. A., Jackson, M. A., & Smith, R. H. (1997). The roles of invidious comparison and deservingness in sympathy and schadenfreude. *Basic and Applied Social Psychology, 19,* 363-380.

Chiu, C. Y., Dweck, C. S., Tong, J. Y., & Fu, H. Y. (1997). Implicit theories and conceptions of morality. *Journal of Personality and Social Psychology, 73,* 923-940.

Ceci, S. J., & Kain, E. L. (1982). Jumping on the bandwagon with the underdog: The impact of attitude polls on polling behavior. *Public Opinion Quarterly, 46*, 228-242.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112,* 155-159.

Cramer, P. (1968). *Word Association.* New York: Academic Press.

Deese, J. (1959). On the prediction of occurrence of particular verbal intrusions in immediate recall. *Journal of Experimental Psychology, 58,* 17-22.

Deese, J. (1965). *The Structure of Associations in Language and Thought*. Baltimore, MD: The Johns Hopkins Press.

Deutsch, M. (1975). Equity, equality, and need: What determines which values will be used as the basis for distributive justice? *Journal of Social Issues, 31*, 137-149.

Deutsch, M. (1985). *Distributive justice: A social-psychological perspective*. New Haven, CT: Yale University Press.

Dignan, M. H. (1965). Ego identity and maternal identification. *Journal of Personality and Social Psychology, 1,* 476-483.

Dweck, C. S., Chiu, C., & Hong, Y. (1995). Implicit theories and their role in judgments and reactions: A word from two perspectives. *Psychological Inquiry, 6*, 267-285.

English, A. (2002, January 8). I'd like to be the underdog again. *St. Petersburg Times.* Retrieved April 15, 2007, from www.sptimes.com.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7*, 117-140.

Frazier, J. A., & Snyder, E. E. (1991). The underdog concept in sport. *Sociology of Sport Journal, 8*, 380-388.

Goldschmied, N. (2005). *The Underdog effect: Definition, limitations, and motivations. Why do we support those at a competitive disadvantage?* Unpublished master's thesis, University of South Florida, Tampa.

Hausch, D. B., & Ziemba, W. T. (1985). Transactions costs, extent of inefficiencies, entries and multiple wagers in a racetrack betting model. *Management Science, 31*, 381-394.

Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.

Hyper Dictionary Online (2004). Retrieved May 23, 2004, from http://www.hyperdictionary.com/search.aspx?define=underdog

Jenkins, J. J., & Palermo, D. S. (1964). *Word Association Norms*. Minneapolis: University of Minnesota Press.

Joiner, T. E., Hollar, D., & Van Orden, K. (2006). On Buckeyes, Gators, Super Bowl Sunday, and the Miracle on Ice: "Pulling together" is associated with lower suicide rates. *Journal of Social and Clinical Psychology, 25*, 179-195.

Kagan, J. (1968). The concept of Identification. *Psychological Review, 65*, 296-305.

Kahneman, D., & Tversky. A. (1972). Subjective probability: A judgment of representativeness. *Cognitive Psychology, 3,* 430-454.

Kahneman, D., & Tversky. A. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive Psychology, 5,* 207-232.

Kahneman, D., & Tversky. A. (1979). Prospect Theory: An analysis of decision under risk. *Econometrica, 47,* 263-292.

Kahneman, D., & Tversky. A. (1984). Choices, values, and frames. *American Psychologist, 39,* 341-350.

Kelley, H. H. (1972). Causal schemata and the attribution process. In E. E. Jones, D. E. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins, & B. Weiner (Eds.), *Attribution: Perceiving the causes of behavior.* Morristown, NJ: General Learning Press.

Kelman, H. C. (1961). Process of Opinion Change. *Public Opinion Quarterly, 25,* 57-78.

Kim, J., Allison, S. T, Eylon, D, Goethals, G. R., Markus, M. J. & Hindle, S. M., & McGuire, H. A. (unpublished manuscript). *Rooting for (and then Abandoning) the Underdog.*

Kucera, H., & Francis, W. N. (1967). *Computational analysis of present-day American English.* Providence, RI: Brown University Press.

Leach, C. W., Spears, R., Branscombe, N. R., & Doosje, B. (2003). Malicious pleasure: Schadenfreude at the suffering of another group. *Journal of Personality & Social Psychology, 84,* 932-943.

Loftus, E. F. (1979). *Eyewitness testimony*. Cambridge, MA: Harvard University Press.

Loftus, E. F., & Palmer, J. C. (1974). Reconstruction of automobile destruction: An example of the interaction between language and memory. *Journal of Verbal Learning and Verbal Behavior, 13,* 585-589.

Markus, M. J., McGuire, H. A., Allison, S., & Eylon, D. (2004). *Why people root for the underdog: The mediating role of social identity*. Unpublished manuscript: University of Richmond.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist, 41*, 954-969.

McAllister, I., & Studlar, D. T. (1991). Bandwagon, underdog, or projection? Opinion polls and electoral choice in Britain, 1979-1987. *Journal of Politics, 53,* 720-741.

Mellers, B. A., Schwartz, A., Ho, K., & Ritov, I. (1997). Decision affect theory: Emotional reactions to the outcomes of risky options. *Psychological Science, 8,* 423-429.

Mercurio, J. (2004, January 21). Dems gear up in New Hampshire. *CNN*. Retrieved February 10, 2004, from www.cnn.com/2004/ALLPOLITICS/01/21/elec04.prez.main/index.html.

Merriam-Webster, Online (2004). Retrieved May 23, 2004, from www.m-w.com/cgi-bin/dictionary?book=Dictionary&va=underdog&x=16&y=8.

Miller, D. T., & Ratner, R. K. (1998). The disparity between the actual and assumed power of self-interest. *Journal of Personality & Social Psychology, 74,* 53-62.

Nelson, D. L., McEvoy, C. L., & Schreiber, T. A. (2004). The University of South Florida free association, rhyme, and word fragment norms. *Behavior Research*

Methods, Instruments & Computers, 36, 402-407.

Nelson, D, L., McKinney, V. M., Gee, N. R., & Janczura, G. A. (1998). Interpreting the influence of implicitly activated memories on recall and recognition. *Psychological Review, 105,* 299-324.

Nelson, D. L., & Schreiber, T. A. (1992). Word concreteness and word structure as independent determinants of recall. *Journal of Memory and Language, 31,* 237-260.

Nietzsche, F. (1967). *On the genealogy of morals* (W. Kaufmann & R. J. Hollingdale, Trans.). New York: Random House. (Original work published 1887)

Nisbet, R. E., & Ross, L. (1980). *Human inference: strategies and shortcomings of social judgment.* Englewood Cliffs, NJ: Prentice-Hall.

Nisbett, R. E., Borgida, E., Crandall, R., & Reed, H. (1976). Popular induction: Information is not always informative. In J. Carroll & J. Payne (Eds.), *Cognition and social behavior*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology, 67*, 741-763.

Quinn, D. M., & Crocker, J. (1999). When ideology hurts: Effects of belief in the Protestant Ethic and feeling overweight on the psychological well-being of women. *Journal of Personality and Social Psychology, 77*, 402-414.

Roediger, L. R., & McDermott, K. B. (1995). Creating false memories: Remembering words not presented in lists. *Journal of Experimental Psychology: Learning, Memory and Cognition. 21,* 803-814.

Ross, L. (1977). The intuitive psychologist and his shortcomings: Distortions in the attribution process. In L. Berkowitz (Ed.), *Advances in experimental social psychology*. New York: Academic Press.

Sachs, O. (1967). Distinctions between fantasy and reality elements in memory and reconstruction. *International Journal of Psycho-Analysis, 48,* 416-423.

Shepperd, J. A., & McNulty, J. K. (2002). The affective consequences of expected and unexpected outcomes. *Psychological Science, 13,* 85-88.

Sidanius, J, & Pratto, F. (1999). *Social dominance: An intergroup theory of social hierarchy and oppression.* New York: Cambridge University Press.

Simon, H. (1954). Bandwagon and underdog effects and the possibility of election predictions. *Public Opinion Quarterly, 18,* 245-253.

Skitka, L. J., & Tetlock, P. E. (1992). Allocating scares resources: A contingency model of distributive justice. *Journal of Experimental Social Psychology, 28,* 491-522.

Slovic, P., Fischhoff, B., & Lichtenstein, S. (1982). Facts versus fears: Understanding perceived risk. In D. Kahneman, P. Slovic, & A. Tversky (Eds.), *Judgment under uncertainty: Heuristics and biases*. Cambridge University Press.

Smith, R. H., Turner, T. J., Garonzik, R., Leach, C. W., Druskat, V. U., & Weston, C. M. (1996). Envy and schadenfreude. *Personality and Social Psychology Bulletin, 22*, 158-168.

Snyder, C. R., & Fromkin, H. L. (1977). Abnormality as a positive characteristic: The development and validation of a scale measuring need for uniqueness. *Journal of Abnormal Psychology, 5,* 518–527.

Stone, J., Perry, W., & Darley, J. M. (1997). "White man can't jump": Evidence for the perceptual confirmation of racial stereotypes following a basketball game. *Basic and Applied Social Psychology, 19,* 291-306.

Stotland, E., Zander, A., & Natsoulas, T. (1961). Generalization of interpersonal similarity. *Journal of Abnormal Psychology, 62*, 250-256.

Tajfel, H. (Ed.) (1978). *Differentiation between social groups: Studies in the social psychology of intergroup relations.* New York: Academic Press.

Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. In S. Worchel & W. Austin (Eds.), *Psychology of intergroup relations* (2nd ed., pp. 7-24). Chicago, IL: Nelson-Hall.

Tesser, A. (1991). Emotion in social comparison and reflection processes. In J. Suls & T. A. Wills (Eds.), *Social comparison: Contemporary theory and research* (pp. 115-145). Hillsdale, New Jersey: Laurence Erlbaum.

"*The Underdog*." Retrieved May 15, 2007, from www.convictcreations.com/culture/underdog.htm.

Tiger, L. (1979). Optimism: The biology of hope. New York: Simon & Schuster.

Tulving. E. (1983). *Elements of episodic memory.* New York: Oxford University Press.

Vandello, J. A., Goldschmied, N., & Richards, D. A. (in press). The appeal of the underdog. *Personality & Social Psychology Bulletin*.

Weber, M. (1904). *The Protestant ethic and the spirit of capitalism.* (T. Parsons, Trans.). New York: Charles Scribner's Sons.

Wills, T. A. (1991). Similarity and self-esteem in downward comparison. In J. Suls & T. A. Wills (Eds.), *Social comparison: Contemporary theory and research* (pp. 51-78). Hillsdale, New Jersey: Laurence Erlbaum.

Appendices

Appendix A: Study 1 Materials

INSTRUCTIONS

I would like you to help me find out what words people commonly think of as being associated with certain words. In the coming page, you will see words, each of which has a blank next to it. Your task will be to write in each blank the first word you think of that means the same thing as or is strongly associated with the word printed on the page. It does not matter what word you write. However, please do not use names of people, places, teams or movies. There are no right or wrong answers. For example, if the word were "ARM" you might write "LEG". If the word were "DOG" you might write "CAT" or "PUPPY". The proper way of indicating the word is:

ARM	LEG
DOG	PUPPY

Be sure to print your words as clearly as possible, and do not worry if you aren't sure how to spell a word. Spell it as best you can. Work as fast as possible, and be sure to write only a single word in each blank.

UNDERDOG _____

DOUBT _____

FEATHERS _____

TOW _____

PARKING _____

ELECTRIC _____

Appendix B: Study 2 Materials

Survey of Public Opinion

This questionnaire explores people's attitudes and beliefs about the social world surrounding us. On the following pages, you will read a short article. You will be asked a number of questions pertaining to its content and your feelings about it. There are no right or wrong answers here; we are simply interested in people's opinions. Feel free to read the article as many times as you wish when answering the questions.

Please turn the page to begin the questionnaire.

• Editorials
• Classifieds
• Sports
• Business
• Entertainment
• Lifestyles
• Newspaper Ads Online

News
• Local News
• San Jose/Valley
• Central Coast
• Peninsula
• Alameda County
• Nation/World
• Obituaries
• Education
• Science & Health
• Weird News
• Special Reports
• Iraq: The Aftermath

Classifieds
• Automotive
• Real Estate
• Employment
• Personals

Opinion

Melbourne at a disadvantage for Tonight's Game

By: Berry White

When John Howard, the coach of the Melbourne Dragons of the Australian Rugby football league entered the stadium yesterday to coach his team for the last time before the important cup match against the Perth Eagles tonight, he delivered a fiery short speech to a swarming group of journalists: "Up until this game we lost most of the games against Perth and we are definitely at a disadvantage but we can do it this time!".

In the last ten seasons, the two teams met ten times and the Dragons won in only three matches. Their offense scores on average 5 points less than their opponents in the league and their defense allows on average 10 points more. The oddsmakers predict a 30% chance of Melbourne winning the game.

When Howard was asked more specifically what were the chances of his team prevailing in the upcoming game, he replied: "being a team in a disadvantage for so many years teaches you to always believe".

Berry White can be reached at Bwhite@mercuryatnews. com

Q&A FORUM

Mercury News reporter Dan Doyle answers your high school sports questions

• Editorials
• Classifieds
• Sports
• Business
• Entertainment
• Lifestyles
• Newspaper Ads Online

News
• Local News
• San Jose/Valley
• Central Coast
• Peninsula
• Alameda County
• Nation/World
• Obituaries
• Education
• Science & Health
• Weird News
• Special Reports
• Iraq: The Aftermath
Classifieds
• Automotive
• Real Estate
• Employment
• Personals
Opinion

Melbourne the Underdog for Tonight's Game

By: Berry White

When John Howard, the coach of the Melbourne Dragons of the Australian Rugby football league entered the stadium yesterday to coach his team for the last time before the important cup match against the Perth Eagles tonight, he delivered a fiery short speech to a swarming group of journalists: "Up until this game we lost most of the games against Perth and we are definitely the underdog but we can do it this time!".

In the last ten seasons, the two teams met ten times and the Dragons won in only three matches. Their offense scores on average 5 points less than their opponents in the league and their defense allows on average 10 points more. The oddsmakers predict a 30% chance of Melbourne winning the game.

When Howard was asked more specifically what were the chances of his team prevailing in the upcoming game, he replied: "being an underdog team for so many years teaches you to always believe".

Berry White can be reached at Bwhite@mercuryatnews. com

Q&A FORUM
Mercury News reporter Dan Doyle answers your high school sports questions

Opinions Questionnaire

Please Circle your gender: *F* *M*

Based on the short article, which you read just now, we are interested in your opinions. There are no right or wrong answers. Please circle the most correct answer in your opinion.

1. **How likely do you think are the Melbourne Dragons to win this game?**
   [0 –100% range]

   _____ %

2. **How much do you support them?**

   Not at all *Somewhat against* *Split* *Somewhat support* *Support fully*

3. **Do you think the Melbourne Dragons are a disadvantaged team?**

   No *I don't know* *Yes*

4. **Would you consider them an underdog?**

   No *I don't know* *Yes*

• Editorials
• Classifieds
• Sports
• Business
• Entertainment
• Lifestyles
• Newspaper Ads Online

News
• Local News
• San Jose/Valley
• Central Coast
• Peninsula
• Alameda County
• Nation/World
• Obituaries
• Education
• Science & Health
• Weird News
• Special Reports
• Iraq: The Aftermath
Classifieds
• Automotive
• Real Estate
• Employment
• Personals
Opinion

Melbourne at a disadvantage for Next Week's Elections

By: Berry White

When John Melbourne, the independent candidate for the mayor post of Grand Heaven, Nebraska entered his headquarters yesterday for a last strategy meeting with his consultants before the crucial elections next week against Bob Perth, the incumbent, he delivered a fiery short speech to a swarming group of journalists: "I lost three races for mayor against Perth in the past and I am definitely at a disadvantage now but we can do it this time!."

In the last ten years, the two candidates met three times. Perth was able to beat the challenger Melbourne by a fair margin in each time. The local pollsters predict a 30% chance of Melbourne surprising and winning the election.

When Melbourne was asked what he thought were his chances of prevailing in the upcoming race he replied: "being the disadvantaged candidate teaches one to be patient and always believe in a possible change. I know I can do it this time around."

Berry White can be reached at Bwhite@mercuryatnews. com

Q&A FORUM
Mercury News reporter Dan Doyle answers your high school sports questions

• Editorials
• Classifieds
• Sports
• Business
• Entertainment
• Lifestyles
• Newspaper Ads Online

News
• Local News
• San Jose/Valley
• Central Coast
• Peninsula
• Alameda County
• Nation/World
• Obituaries
• Education
• Science & Health
• Weird News
• Special Reports
• Iraq: The Aftermath
Classifieds
• Automotive
• Real Estate
• Employment
• Personals
Opinion

Melbourne the underdog in Next Week's Elections

By: Berry White

When John Melbourne, the independent candidate for the mayor post of Grand Heaven, Nebraska entered his headquarters yesterday for a last strategy meeting with his consultants before the crucial elections next week against Bob Perth, the incumbent, he delivered a fiery short speech to a swarming group of journalists: "I lost three races for mayor against Perth in the past and I am definitely the underdog now but we can do it this time!."

In the last ten years, the two candidates met three times. Perth was able to beat the challenger Melbourne by a fair margin in each time. The local pollsters predict a 30% chance of Melbourne surprising and winning the election.

When Melbourne was asked what he thought were his chances of prevailing in the upcoming race he replied: "being the underdog candidate teaches one to be patient and always believe in a possible change. I know I can do it this time around."

Berry White can be reached at Bwhite@mercuryatnews. com

Q&A FORUM
Mercury News reporter Dan Doyle answers your high school sports questions

Opinions Questionnaire

Please Circle your gender: *F* *M*

Based on the short article, which you read just now, we are interested in your opinions. There are no right or wrong answers. Please circle the most correct answer in your opinion.

1. How likely do you think is John Melbourne to win this elections? [0 –100% range]

_____ %

2. How much do you support John Melbourne?

Not at all *Somewhat against* *Split* *Somewhat support* *Support fully*

3. Do you think John Melbourne is the disadvantaged candidate?

No *I don't know* *Yes*

4. Would you consider him the underdog?

No *I don't know* *Yes*

• Editorials
• Classifieds
• Sports
• Business
• Entertainment
• Lifestyles
• Newspaper Ads Online

News
• Local News
• San Jose/Valley
• Central Coast
• Peninsula
• Alameda County
• Nation/World
• Obituaries
• Education
• Science & Health
• Weird News
• Special Reports
• Iraq: The Aftermath
Classifieds
• Automotive
• Real Estate
• Employment
• Personals
Opinion

Melbourne at a Disadvantage for Tomorrow's Tender Vote

By: Berry White

When John Melbourne, the CEO of Grand Heaven Inc., entered his company's headquarters yesterday for a last strategy meeting with his consultants before the crucial decision about the tender against the Perth firm, the current holder of the water treatment annual municipality contract, he delivered a fiery short speech to a swarming group of local journalists: "I lost three times against Perth in the past and I am definitely at a disadvantage now but we can do it this time!."

In the last ten years, the two companies competed three times. The Perth firm was able to beat the challenger, Grand Heaven Inc., by a fair margin of council members votes in each time. Local pundits who were interviewed by the newspaper predicted a 30% chance of Grand Heaven Inc. surprising and winning the bid.

When Melbourne was asked what he thought were his chances of prevailing in the upcoming vote he replied: "being the disadvantaged side teaches one to be patient and always believe in a possible change. I know we can do it this time around."

Berry White can be reached at Bwhite@mercuryatnews. com

Q&A FORUM
Mercury News reporter Dan Doyle answers your high school sports questions

• Editorials
• Classifieds
• Sports
• Business
• Entertainment
• Lifestyles
• Newspaper Ads Online

News
• Local News
• San Jose/Valley
• Central Coast
• Peninsula
• Alameda County
• Nation/World
• Obituaries
• Education
• Science & Health
• Weird News
• Special Reports
• Iraq: The Aftermath
Classifieds
• Automotive
• Real Estate
• Employment
• Personals
Opinion

Melbourne the Underdog in Tomorrow's Tender Vote

By: Berry White

When John Melbourne, the CEO of Grand Heaven Inc., entered his company's headquarters yesterday for a last strategy meeting with his consultants before the crucial decision about the tender against the Perth firm, the current holder of the water treatment annual municipality contract, he delivered a fiery short speech to a swarming group of local journalists: "I lost three times against Perth in the past and I am definitely the underdog now but we can do it this time!."

In the last ten years, the two companies competed three times. The Perth firm was able to beat the challenger, Grand Heaven Inc., by a fair margin of council members votes in each time. Local pundits who were interviewed by the newspaper predicted a 30% chance of Grand Heaven Inc. surprising and winning the bid.

When Melbourne was asked what he thought were his chances of prevailing in the upcoming vote he replied: "being the underdog teaches one to be patient and always believe in a possible change. I know we can do it this time around."

Berry White can be reached at Bwhite@mercuryatnews. com

Q&A FORUM

Mercury News reporter Dan Doyle answers your high school sports questions

Opinions Questionnaire

Please Circle your gender: *F* *M*

Based on the short article, which you read just now, we are interested in your opinions. There are no right or wrong answers. Please circle the most correct answer in your opinion.

1. How likely do you think is the Grand Heaven Inc. to win the tender? [0 –100% range]

_____ %

2. How much do you support Grand Heaven Inc.?

1	2	3	4	5	6	7	8	9
Not at all				**Mildly**				**Very much**

3. How much do you support The Perth firm?

1	2	3	4	5	6	7	8	9
Not at all				**Mildly**				**Very much**

4. Do you think that Grand Heaven Inc. is the disadvantaged side?

No *I don't know* *Yes*

5. Would you consider Grand Heaven Inc. the underdog?

No *I don't know* *Yes*

Appendix C: Study 3 Materials

Welcome to the Experiment on Reading Comprehension & Spatial ability.

You are about to be presented with two short paragraphs.

Read them thoroughly as you will be asked questions about them later.

Once you are done reading, let the research assistant know.

To begin reading the paragraph hit the space bar.

In NCAA women's softball national champions are crowned through a tournament among the sixteen top-ranked teams in the country.
Since the present seeding system began, No. 16 seeds have never beaten No. 1 seeds in 88 games. However, there is an obvious difference this year. The 16th ranked ladies of American State University, who barely made it to the National tournament, believe they can beat the almighty Lady Hurricanes of Montana Southern who are ranked No. 1. Bill Dulles, the head coach for the lowest ranked American State team said before the game: "We struggled mightily to be were we are now at but we can surprise any team even last year's reigning champions, Montana Southern. Surprise wins are the essence of the tournament!"
In recent years, the national softball tournament has become big business with annual revenues reaching the 10 million mark, all games being broadcasted on TV and teams vying for big-time exposure.

In NCAA women's softball national champions are crowned through a tournament among the sixteen top-ranked teams in the country.
Since the present seeding system began, No. 16 seeds have never beaten number 1 seeds in 88 games.
However, there was an obvious difference this year. Bill Dulles, the head coach for the lowest ranked American State team said before the game: "We struggled mightily to be were we are now at but we can surprise any team even last year's reigning champions, Montana Southern. Surprise wins are the essence of the tournament!" The 16th ranked ladies of American State University, who barely made it to the National tournament, did beat eventually the almighty Lady Hurricanes of Montana Southern who were ranked No. 1.
In recent years, the national softball tournament has become big business with annual revenues reaching the 10 million mark, all games being broadcasted on TV and teams vying for big-time exposure.

In NCAA women's softball national champions are crowned through a tournament among the sixteen top-ranked teams in the country.
Since the present seeding system began, No. 16 seeds have never beaten number 1 seeds in 88 games. This year was no different. The 16th ranked, ladies of American State University, who barely made it to the National tournament, believed that they could beat the almighty Lady Hurricanes of Montana Southern ranked No. 1. Bill Dulles, the head coach for the lowest ranked American State team said before the game: "We struggled mightily to be were we are now at but we can surprise any team even last year's reigning champions, Montana Southern. Surprise wins are the essence of the tournament!" However, his team ultimately lost the game.
In recent years, the national softball tournament has become big business with annual revenues reaching the 10 million mark, all games being broadcasted on TV and teams vying for big-time exposure.

A sweltering heat wave gripped most of the nation today, with high temperatures in the 90's expected in nearly every state, and 100-degree heat predicted in many places in the Northeast and southern Plains states.

Excessive-heat warnings were issued by the National Weather Service for eastern Pennsylvania, most of New Jersey and the St. Louis area. Because of high humidity, the weather there will feel much hotter than the thermometer reading, the Weather Service said. For example, 60 percent humidity makes 90-degree weather feel like 100 degrees.

The agency advised people to stay indoors as much as possible and drink nonalcoholic fluids to avoid dehydration.

Heat is the single largest natural killer of Americans in the continental United States, causing the death of 175 people in an average year, the agency said — more than lightning, hurricanes, tornadoes, floods or earthquakes.

The Weather Service warned in particular against keeping children or pets in cars, even for a short time.

“Temperatures in a car with windows up can reach over 150 degrees, quickly resulting in heat stroke and death,” the service said.

On the next screen, you will be shown graphic symbols. Learn them carefully.

After you study the symbols, you will be asked to recognize if the symbols appeared or not on the previous screen.

Hit the 'L' key if you think the symbol did show up.

Hit the 'A' key if you think the symbol did not show up.

Place your 'pointer' fingers on the keys.

A Brief '+' sign will show up before each symbol.

Try to be as accurate and fast as possible.

When you are ready, hit the space bar.

Now recall the "NCAA Championship" paragraph that you read to begin the experiment. Next, you will be shown words on the screen. Some words appeared in the paragraph and some did not.

Hit the 'L' key if you think the word did show up.

Hit the 'A' key if you think the word did not show up.

Place your 'pointer' fingers on the keys.

A Brief '+' sign will show up before each symbol.

Try to be as accurate and fast as possible.

Hit the space bar when ready.

tournament

basketball

underdog

softball

expectations

beat

almighty

strong

emotional

hope

Please state how sure were you in regards to the word: underdog

1- Not sure at all
2- Somewhat confident
3- Confident
4- Very confident

Who won the game eventually?

1-the 16th ranked team
2-the 1st ranked team
3-the game was not played yet
4-do not remember

Appendix D: Study 4 Materials

You are about to watch two of the best basketball teams in Europe fighting on the last remaining spot in the prestigious European cup semi-finals.

Tau from Spain has always dominated Panathinaikos from Greece and the two teams experience strong animosity towards each other. Betting on the final score show that 90% of the money is placed on Tau to win the game handily.

Tau has been the most successful club in Europe winning the cup 3 times consecutively and is enjoying an overwhelming $107 million payroll, which is almost 5 times more than the average of $21 million and easily qualifies it as the richest club in the continent. In contrast, Panathinakos, the underdog, has a mere $22 million payroll.

We would like to test your 'basketball' analysis and predictions skills to guess the final score based on the data provided here and a short clip of the final stages of the game itself. Are there any questions before we begin?

You are about to watch two of the best basketball teams in Europe fighting on the last remaining spot in the prestigious European cup semi-finals.

Panathinaikos from Greece has always dominated Tau from Spain and the two teams experience strong animosity towards each other. Betting on the final score show that 90% of the money is placed on Panathinaikos to win the game handily.

Panathinaikos has been the most successful club in Europe winning the cup 3 times consecutively and is enjoying an overwhelming $107 million payroll, which is 5 times more than the average of $21 million and easily qualifies it as the richest club in the continent. In contrast, Tau, the underdog, has a mere $22 million payroll.

We would like to test your 'basketball' analysis and predictions skills to guess the final score based on the data provided here and a short clip of the final stages of the game itself. Are there any questions before we begin?

You are about to watch two of the best basketball teams in Europe fighting on the last remaining spot in the prestigious European cup semi-finals.

Panathinaikos from Greece has always dominated Tau from Spain and the two teams experience strong animosity towards each other. Betting on the final score show that 90% of the money is placed on Panathinaikos to win the game handily.

Tau, the underdog, has failed repeatedly to make the semi-finals in recent years and has a meager $5 million payroll in comparison to an average payroll of $21 million of teams taking part in the cup. This budget qualifies it as the poorest club in Europe. Panathinaikos, in contrast, has a payroll of $22 million.

We would like to test your ‘basketball’ analysis and predictions skills to guess the final score based on the data provided here and a short clip of the final stages of the game itself. Are there any questions before we begin?

You are about to watch two of the best basketball teams in Europe fighting on the last remaining spot in the prestigious European cup semi-finals.

Tau from Spain has always dominated Panathinaikos from Greece and the two teams experience strong animosity towards each other. Betting on the final score show that 90% of the money is placed on Panathinaikos to win the game handily.

Panathinaikos, the underdog, has failed repeatedly to make the semi-finals in recent years and has a meager $5 million payroll in comparison to an average payroll of $21 million of teams taking part in the cup. This budget qualifies it as the poorest club in Europe. Tau, in contrast, has a payroll of $22 million.

We would like to test your 'basketball' analysis and predictions skills to guess the final score based on the data provided here and a short clip of the final stages of the game itself. Are there any questions before we begin?

Memory Questionnaire

Did you recognize any of the players from past games? If so, who?

_____

Who is the underdog team (please circle)?

Panathinaikos Tau Neither

Which country does Tau represent?

_____

Which country does Panathinaikos represent?

_____

What color of uniform did Tau wear?

_____

What color of uniform did Panathinaikos wear?

_____

What is Tau's payroll?

_____

What is Panathinaikos' payroll?

_____

What is the average budget in Europe?

_____

In the clip you have just watched (if you don't recall exactly, give us your best estimation):

1. When the clip ended, how many points did Tau have?

   _____

2. How many points did **Tau** score <u>during</u> the clip you just watched?

   _____

3. How many 3 points shots did **Tau** make?

0 1 2 3 4 5 or more

4. What was **Tau**'s shooting percentage from the foul line?

50% or less 60% 70% 80% 90% and up

5. How many times did **Tau** dunk the ball?

0 1 2 3 or more

6. How many fouls did **Tau** commit?

0 1 2 3 4 5 or more

In the clip you have just watched (if you don't recall exactly, give us your best estimation):

1. When the clip ended, how many points did **Panathinkaikos** have?

   _____

2. How many points did **Panathinkaikos** score during the clip you just watched?

   _____

3. How many 3 points shots did **Panathinkaikos** make?

0 1 2 3 4 5 or more

4. What was **Panathinkaikos** shooting percentage from the foul line?

50% or less 60% 70% 80% 90% and up

5. How many times did **Panathinkaikos** dunk the ball?

0 1 2 3 or more

6. How many fouls did **Panathinkaikos** commit?

0 1 2 3 4 5 or more

Please answer the following questions:

1. **How much would you like Tau to win the game?**

1	2	3	4	5	6	7	8	9
Not at all				**Mildly**				**Very much**

2. **How much would you like Panathinaikus to win the game?**

1	2	3	4	5	6	7	8	9
Not at all				**Mildly**				**Very much**

3. **How much can you identify with Tau?**

1	2	3	4	5	6	7	8	9
Not at all				**Mildly**				**Very much**

4. **How much can you identify with Panathinaikus?**

1	2	3	4	5	6	7	8	9
Not at all				**Mildly**				**Very much**

5. **How much do you see yourself in team Tau?**

1	2	3	4	5	6	7	8	9
Not at all				**Mildly**				**Very much**

6. **How much do you see yourself in team Panathinaikus?**

1	2	3	4	5	6	7	8	9
Not at all				**Mildly**				**Very much**

7. How similar do you feel to team Tau?

1	2	3	4	5	6	7	8	9
Not at all				**Mildly**				**Very much**

8. How similar do you feel to team Panathinaikus?

1	2	3	4	5	6	7	8	9
Not at all				**Mildly**				**Very much**

9. As a first impression, which team do you like better (circle one)?

Tau ***Panathinaikus***

10. Not knowing anything else about the teams, which team would you probably root for (circle one)?

Tau ***Panathinaikus***

11. Which team, if any, is the "underdog"? Why?

_____
_____
_____

12. Based on the clip you just watched, which team do you think won the game?

Tau ***Panathinaikus***

Current Thoughts

INSTRUCTIONS:

This is a questionnaire designed to measure what you are thinking at this moment. There is, of course, no right answer for any statement. The best answer is what you feel is true of yourself at this moment. Be sure to answer all of the items, even if you are not certain of the best answer. Again, answer these questions as they are true for you **RIGHT NOW**.

1	2	3	4	5
Not at all	A little bit	Somewhat	Very much	Extremely

1. I feel confident about my abilities. _____
2. I am worried about whether I am regarded as a success or failure. _____
3. I feel satisfied with the way my body looks right now. _____
4. I feel frustrated or rattled about my performance. _____
5. I feel that I am having trouble understanding things that I read. _____
6. I feel that others respect and admire me. _____
7. I am dissatisfied with my weight. _____
8. I feel self-conscious. _____
9. I feel as smart as others. _____
10. I feel displeased with myself. _____
11. I feel good about myself. _____
12. I am please with my appearance right now. _____
13. I am worried about what other people think about me. _____
14. I feel confident that I understand things. _____
15. I feel inferior to others at this moment. _____

16. I feel unattractive. _____

17. I feel concerned about the impression I am making. _____

18. I feel that I have less scholastic ability right now than others. _____

19. I feel like I’m not doing well. _____

20. I am worried about not looking foolish. ____

Please indicate the degree to which you agree or disagree with each of the statements below using the following scale:

1	2	3	4	5	6
Very strongly agree	*Agree*	*Agree somewhat*	*Disagree somewhat*	*Disagree*	*Very strongly disagree*

___1. Most people spend too much time in unprofitable amusements.

___2. Our society would have fewer problems if people had less leisure time.

___3. Money acquired easily is usually spent unwisely.

___4. Most people who don't succeed in life are just plain lazy.

___5. Anyone who is willing and able to work hard has a good chance of succeeding.

___6. People who fail at a job have usually not tried hard enough.

___7. Life would have very little meaning if we never had to suffer.

___8. The person who can approach an unpleasant task with enthusiasm is the person who gets ahead.

___9. If people work hard enough they are likely to make a good life for themselves.

___10. I feel uneasy when there is little work for me to do.

___11. A distaste for hard work usually reflects a weakness of character.

___12. Getting ahead is a matter of working hard and relying only on yourself.

___13. People are responsible for their own situation in life.

___14. People should not count on others to solve their problems for them.

___15. A person who blames others for his or her problems is a cop-out.

___16. If you want to be successful, all you have to do is work hard and improve yourself.

Please indicate the degree to which you agree or disagree with each of the statements below:

1. Though some phenomena can be changed, it is unlikely that the core dispositions of the world can be altered.

1	2	3	4	5	6
Very strongly agree	*Agree*	*Agree somewhat*	*Disagree somewhat*	*Disagree*	*Very strongly disagree*

2. A person's moral character is something very basic about them and it can't be changed much.

1	2	3	4	5	6
Very strongly agree	*Agree*	*Agree somewhat*	*Disagree somewhat*	*Disagree*	*Very strongly disagree*

3. You have a certain amount of intelligence and you can't do very much to change it.

1	2	3	4	5	6
Very strongly agree	*Agree*	*Agree somewhat*	*Disagree somewhat*	*Disagree*	*Very strongly disagree*

4. Our world has its basic and ingrained dispositions, and you really can't do much to change it.

1	2	3	4	5	6
Very strongly agree	*Agree*	*Agree somewhat*	*Disagree somewhat*	*Disagree*	*Very strongly disagree*

5. Whether a person is responsible and sincere or not is deeply ingrained in their personality. It cannot be changed very much.

1	2	3	4	5	6
Very strongly agree	*Agree*	*Agree somewhat*	*Disagree somewhat*	*Disagree*	*Very strongly disagree*

6. Your intelligence is something about you that you can't change much.

1	2	3	4	5	6
Very strongly agree	*Agree*	*Agree somewhat*	*Disagree somewhat*	*Disagree*	*Very strongly disagree*

7. Some societal trends may dominate for a while, but the fundamental nature of our world is something that cannot be changed much.

1	2	3	4	5	6
Very strongly agree	*Agree*	*Agree somewhat*	*Disagree somewhat*	*Disagree*	*Very strongly disagree*

8. There is not much that can be done to change a person's moral traits (e.g. conscientiousness, uprightness, honesty).

1	2	3	4	5	6
Very strongly agree	*Agree*	*Agree somewhat*	*Disagree somewhat*	*Disagree*	*Very strongly disagree*

9. You can learn new things, but you can't really change your basic intelligence.

1	2	3	4	5	6
Very strongly agree	*Agree*	*Agree somewhat*	*Disagree somewhat*	*Disagree*	*Very strongly disagree*

About the Author

Nadav Goldschmied received a Bachelor's Degree, with a major in Psychology and a minor in History, from Bar-Ilan University in Israel in 1997. He received a Master's Degree in Sport Management from Canisius College at Buffalo, New York in 2001. In 2003, Mr. Goldschmied entered the Ph.D. program in Cognition, Neuroscience, and Social Psychology at the University of South Florida. His area of specialty within this program was Social Psychology. While completing his Ph.D., Mr. Goldschmied initiated and developed his programmatic research on the underdog construct, under the guidance of his mentor and advisor, Dr. Joseph Vandello.