

Popularity

A theory of grade school social dynamics

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Abstract

Researchers have discovered two distinct but correlated forms of grade school popularity, perceived and sociometric. Perceived popularity is defined as being socially dominant or central. Its most important correlates are physical attractiveness for girls and athletic aptitude for boys. Sociometric popularity is defined as being well liked. Its most important correlate is prosocial behaviour and highly developed social skills. Currently, no theory adequately explains the relationship between perceived and sociometric popularity and the ultimate causes of grade school social dynamics. The current paper addresses this deficiency and presents a unified theory of grade school popularity. According to the proposed theory, perceived popularity is caused by a range of motivated interpersonal behaviours (input of energy) directed preferentially towards a small percentage of attractive students. Sociometric popularity, in contrast, is caused by prosocial behaviours that lead to interpersonal liking. Perceived and sociometric popularity are distinct but correlated because the ultimate cause of each, attraction and liking respectively, are independent psychological processes that share a temporal link. In conjunction with the theory, a three factor model is developed that can be used to understand how any student comes to occupy their social position. The three factors are: 1) how the individual relates with the group; 2) how the group relates with the individual; and 3), the situation. Applications and implications of the theory are discussed throughout.

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Introduction

Children and adolescents attending grade school want to be popular. Unfortunately, young people seeking answers concerning how to achieve popularity are to be disappointed. No current theory can adequately explain this well known social phenomenon. Lay theories often give superficial advice by suggesting that the key to popularity is simply confidence and kindness (e.g. “Remember, the only thing you need in order to be popular is a good set of people skills”; wikihow, n.d.).” Often conflicting with lay theories is the popular media and its suggestion that strategic acts of aggression are the source of popularity. In the 2004 movie *Mean Girls*, the heroine attains an elevated status after engaging in various acts of sabotage directed at her rival. For young people seeking popularity, the array of contradictory and non-specific advice is wholly inadequate.

For their part, social scientists do not have the answer either. Significant progress has been made in identifying and describing factors that affect popularity but still questions remain:

- **“Several questions that remain open concern the development of relations of wannabes with the popular crowd over time. Specifically, it will be interesting to examine whether wannabes have been members of the popular crowd and have been pushed out or whether they are on their way to ultimately becoming affiliated with the popular peers.” -Dijkstra et al., 2010, p. 954**
- **“Still to be explored are questions about the initial emergence of perceived popular status. If aggression is not the means of status attainment (as we expected), what is?” -Cillessen & Mayeux, 2004, p. 161**
- **“Future research is needed to better understand the relations between facial attractiveness, aggression, and popularity.”-Rosen & Underwood, 2010, p. 309**

The purpose of the current paper is to propose a theory of popularity that has practical utility for researchers studying grade school popularity and young people seeking to achieve it.

1. Defining popularity

The earliest researchers to study grade school popularity defined it as being well liked (e.g., Dunnigton, 1957). Those children who were liked by many and disliked by few were considered popular. In time, it became apparent that a discrepancy existed between the definition of popularity used by researchers and that used by the students they studied. When students are asked to identify who among them is the most popular, they identify a heterogeneous group of individuals who are occasionally liked and / or disliked by their peers. Today, the twin concepts of perceived and sociometric popularity are used to fully describe the social dynamics of grade school (Kosir & Pecjak, 2005).

1.1 Sociometric popularity—being well liked

The current procedure most widely used for measuring sociometric popularity was originally developed by Coie, Dodge & Coppotelli (1982). According to this method, participants are asked to nominate three peers they like most (LM) and three peers they like least (LL). By considering the number of positive and negative nominations received, the extent to which a student is liked or disliked within their peer group can be measured. If the total number of LL scores is subtracted from the total number of LM scores, a measure of social preference is obtained. Students who are liked by many and disliked by few are considered to be sociometrically popular. If a child receives more LL nominations than LM nominations, they are actively disliked by many and considered to be sociometrically unpopular. If the number of LL nominations a student receives is added to their number of LM nominations, a measure of social impact or visibility is obtained. In contrast to social preference, social impact is dependent on being highly prominent but not necessarily well liked. Students who are actively disliked by many can still achieve a high social impact score entirely through LL nominations.

Not all students receive the same number of nominations because participants in sociometric studies are only allowed to nominate a limited number of their peers. Consequently, some students are effectively forgotten. These individuals are rarely nominated as liked most or liked least and have little or no social impact.

Using sociometric data, five distinct categories of student can be distinguished: sociometrically popular, controversial, rejected, neglected and average. Sociometrically popular students are well liked by many. Controversial students are have high social impact but are simultaneously liked and disliked by many. Neglected students have low social impact and receive few, if any, nominations. Rejected students are actively disliked by many. Average students are just that. They fall somewhere in between the latter four categories.

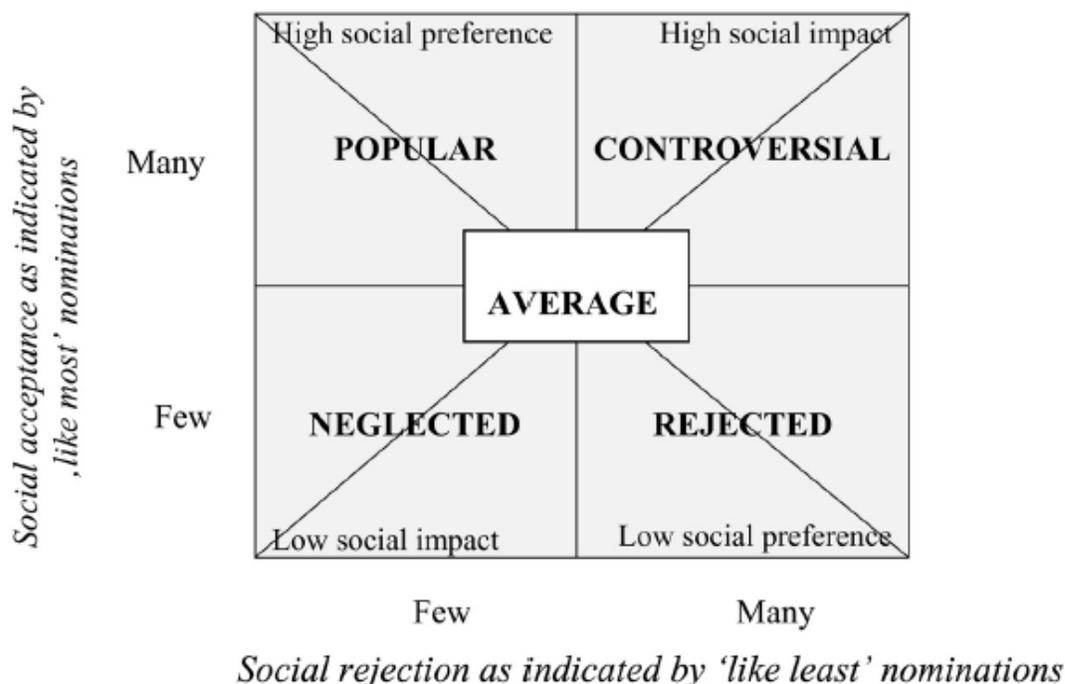


Figure 1: The five sociometric categories. Taken from Kosir & Pecjak, 2005.

1.2 Perceived popularity—being socially dominant

When students are asked directly “Who is the most popular?” and “Who is the least popular?” it becomes apparent that their definition of popularity is different from that of sociometric popularity. Quite simply, perceived popularity is measured by asking students to nominate who they think is most popular and who is least popular. When the total number of ‘least popular’ nominations is subtracted from the total number of ‘most popular’ nominations, a measure of perceived popularity is obtained. Unlike sociometric popularity which results in the bi-dimensional distribution depicted in figure 1, perceived popularity is mono-dimensional. Students do not generally receive contradictory nominations of most and least popular and there is a general consensus within the student body concerning who is and who is not popular.

Consequently, all students can be classified along a single dimension as ‘popular’, ‘unpopular’ or ‘average’.

Perceived popular students are socially dominant and influential. LaFreniere & Charlesworth (1983) define two types of social power, explicit and implicit. Explicit social power depends on threats, abuse and fear to achieve compliance. Implicit social power depends on the recognition of status by peers and willing obedience. Students perceived as popular wield considerable implicit social power and are not dependent on explicit social power (Vaillancourt & Hymel, 2006). Decisions they make and opinions they express are given more weight relative to their less popular peers. Implicit social power has practical implications when deciding what clothing is and is not cool; what is and is not funny; and, perhaps most importantly, who is and is not allowed to associate with a particular clique. The lives of perceived popular children are the objects of intense interest and students direct much attention towards their perceived popular peers. In addition to engaging in exclusive activities that pique the interest of the student body, perceived popular students are often central players in the social dramas that characterize grade school.

Unlike sociometric popularity, perceived popularity is not dependent on being well liked. In fact, children perceived as popular can belong to any of the five sociometric categories. The concepts of perceived and sociometric popularity are not, however, totally independent and a range of correlations between the two concepts has been reported (Vaillancourt & Hymel, 2006).

1.3 The correlates of perceived popularity

Much research has uncovered a range of common characteristics that correlate with perceived popularity.

Being physically attractive

Without question, the most important and robust predictor of perceived popularity is physical attractiveness for both boys and girls (Boyatzis, Baloff & Durieux, 1998; Vaillancourt & Hymel, 2006). The reverse is also true. Being physical unattractive is often associated with being unpopular especially for girls (Vannatta et al., 2009). From an early age being attractive facilitates a range of positive social outcomes. Preschoolers, for example, are more likely to select attractive individuals as their friends (Kleck, Richardson & Ronald, 1974). Judgments of physical attractiveness can be altered through clothing, makeup and personal hygiene. It is not

possible, however, to fully compensate for a fundamentally unattractive physique. Too much makeup, for example, can be a bad thing.

Athletic ability

For boys, athletic ability is nearly as important a predictor of perceived popularity as physical attractiveness. Often, being the best male athlete is synonymous with being the most popular. The reverse correlation is also true and boys with no interest or ability in sports often have little or no social status. Related to athletic ability is physical dominance. Boys' play often incorporates opportunities for competition and displays of physical prowess; for example, informal bouts of shoving or roughhousing. Although unsanctioned acts of physical aggression might be condemned by teachers, parents or individuals of authority, displays of physical dominance often contribute to a male's social status (Adler, Kless & Adler, 1992).

Athletic ability among girls is significantly less important as a predictor of perceived popularity (Vaillancourt & Hymel, 2006; Vannatta et al., 2009): it is, nonetheless, associated. Lindstrom & Lease (2005) suggest that the slight correlation between athletic ability and the perceived popularity of girls might actually be a reflection of co-variation among other important factors. "For example, family background could be related to league access and financial resources for participation fees, physical appearance could be related to physical activity, and social development could be related to the additional social opportunities provided by team sport involvement. Thus, athletic variables might not cause peer status, but they might provide access to the factors that do (p. 239)."

Coolness and toughness (Adler & Adler, 1995b; Adler, Kless and Adler, 1992)

The proverbial but ill defined adjective "cool" is an important correlate of perceived popularity among boys. The 'cooler' a student is the more likely they are to be perceived as popular. Being cool is often associated with the clothes that a person wears, their style of hair, the physical accessories they own (e.g., cell phones) and the various personas they embody (e.g., being a "skater"). The exact definition of what makes someone, or something, "cool" changes over time. Although intra-generationally there may be a widely accepted definition of what is cool, there is little consensus inter-generationally.

For boys, toughness refers to exhibiting an air of indifference to authority and rules; for example, "getting into trouble". It is characterized by a lack of fear getting caught doing 'bad'

things. The opposite of toughness is acting effeminate and acquiescent toward authority. Having unwavering support for rules and an overbearing concern for doing what is 'right'. The female equivalent of toughness can be conceptualized as engaging in activities considered mature or distinguished. Females can gain social points through demonstrations of feminine allure; for example, dating or attracting the attention of a popular boy.

Parenting style correlates with perceived popularity likely because permissive parents allow their children to engage in activities that confer perceptions of 'toughness'. Lack of parental control allows children to try exciting or appealing activities that otherwise wouldn't be permitted such as rowdy co-ed parties.

Savoir faire

Adler & Adler (1995b) have coined the term "savoir-faire" (lit. knowing what to do) to describe the intangible social skills of perceived popular children. According to them, children perceived as popular are more mature and able to interact competently with others. They possess an interpersonal sophistication and acute awareness of their social world. A lack of savoir faire manifests itself as socially awkward and detrimental behaviour. For example, a child wanting to participate in a group activity may attempt to force their inclusion through physical intimidation. This type of social *faux pas* is poorly received and results in active dislike (Dodge, et al., 1983). The increased social skill of perceived popular students helps them make friends with peers and adults in and out of the school setting. Increased social awareness and maturity can be used for prosocial ends such as conflict resolution but can also take the form of effective relational aggression. In fact, perceived popular students have a well earned reputation in the popular media as skilful manipulators (Adler & Adler, 1995a; Caplan, 2010).

Academic Performance

Boys at either end of the academic curve can suffer socially. Boys who are very smart may be stigmatized as 'brainy' or 'nerdy' and some boys downplay their academic achievement or fail to fully exert themselves as a result. Boys who consistently fall significantly behind the class are also likely to be stigmatized with titles such as 'dumb' or 'slow'. As a predictor of perceived popularity, academic performance is not particularly important because boys at either end of the academic spectrum can generally maintain their status so long as they possess other peer valued characteristics such as athletic ability. Still, academic achievement is better than

failure (Boyatzis, Baloff & Durieux, 1998). In contrast to boys, it is often possible for girls to gain status through academic achievement; although, it is not a prerequisite. Regardless of whether they underachieve or overachieve, girls generally don't suffer the same stigma as boys so long as they are physically attractive.

Cross-Gender relations

Cross gender relations are common during preschool, decline during early grade school and then begin reappearing in junior high and high school as friendships and romances. Not surprisingly, the increased interest coincides with pubertal changes. At first, cross gender relations often occur within the safety of large social groups. Acts of innocent flirting such as passing notes are common. Perceived popular boys and girls are most often the first to initiate cross gender relations and this reinforces their social prominence (Dijkstra et al., 2010). Initiating and maintaining cross gender relations is interpreted as a sign of maturity and sexual activity carries significant interest. Successful sexual forays promote status especially among boys.

Socioeconomic status

Adler, Kless & Adler (1992) cite socioeconomic status as an important predictor of a girl's perceived popularity and Vaillancourt & Hymel (2006) reported a correlation of 0.43 between the two. Because socioeconomic status correlates with a range of other important factors (e.g., stylish clothing), it is difficult to ascertain its importance independent of other confounding variables. Socioeconomic status, like athletic ability, might predict perceived popularity but not cause it directly.

The combined effect of all peer valued characteristics

The correlation between all peer valued characteristics and perceived popularity is robust. Vaillancourt & Hymel (2006) found it to be .79. Corroborating quantitative correlations is a substantial amount of qualitative research (Adler & Adler, 1995b). Clearly, peer valued characteristics are associated with perceived popularity. The exact causal link, however, has yet to be uncovered and questions remain. Consider, for example, academic achievement among boys: both high and low achievements are correlated with lowered peer status unless the individual possesses other peer valued characteristics. Why? What interpersonal processes are modulating the reported correlations?

The correlation between peer valued characteristics and perceived popularity is so robust and apparent that it is reflected in popular media. For example, the 2005 film *Mean Girls*, depicts a character intended to represent the epitome of perceived popularity. Not surprisingly, she is physically attractive, affluent, and the daughter of a permissive parents. In addition she is socially central and universally accepted as the ‘most popular’ girl by the entire student body.

1.4 Behavioural correlates of the five sociometric categories

What leads to being well liked or sociometrically popular? Intuitively, being well liked should require a broad range of prosocial behaviours: helping, sharing, kindness, respect, etc. Several studies have proven this intuition correct. In contrast to the correlates of perceived popularity, the correlates of sociometric popularity are generally behavioural. In short, sociometric popularity is positively correlated “with friendship, peer affiliation, social inclusion, prosocial behaviour, and leadership, and uniquely and negatively correlated with overt aggression, relational aggression, and victimization (Sandstrom & Cillessen, 2006, p. 308).”

The results of Sandstrom & Cillessen are not unique. Numerous studies demonstrate that students in all five sociometric categories can be differentiated according three broad categories of behaviour: sociability, withdrawal and aggression (Howe, 2010). Sociability is characterized as propensity for social interaction; ability to communicate; solve interpersonal problems; and, displays of helpfulness and empathy. Withdrawal is characterized by a propensity for loneliness, depression, social anxiety and avoidance. Like sociability and withdrawal, a range of behaviour is classified as aggressive. Shaffer et al. (2010, p. 548-552) provide meaningful definitions:

- Hostile aggression: aggressive acts for which the perpetrator's major goal is to harm or injure the victim.
- Instrumental aggression: aggressive acts for which the perpetrator's major goal is to gain access to objects, space, or privileges.
- Retaliatory aggression: aggressive acts elicited by real or imagined provocations.
- Relational aggression: acts such as snubbing, exclusion, withdrawing acceptance, or spreading rumours that are aimed at damaging an adversary's self esteem, friendships, or social status.

- Proactive aggressors: Highly aggressive children who find aggressive acts easy to perform and who rely heavily on aggression as a means of solving social problems or achieving other personal objectives.
- Reactive aggressors: Children who display high levels of hostile, retaliatory aggression because they over-attribute hostile intent to others and can't control their anger long enough to seek non-aggressive solutions to social problems.

In a seminal paper, Newcomb, Bukowski & Pattee (1993) conducted a meta-analysis in order to summarize the behavioural correlates associated with each of the five sociometric categories.

The following is a summary of what they found:

Sociometrically popular students are demonstrably more prosocial relative to their peers and are rated as such by teachers, peers and researchers. They are better able to solve social problems; engage in positive social actions; and, show a greater number of friendship relations. In short, sociometrically popular children's "low levels of disruptive aggressive behaviour coupled with their high levels of positive traits, actions, problem-solving skills, and friendship skills make them ideal candidates for status as a preferred peer (Newcomb, Bukowski & Pattee, 1993, p. 119)." With respect to aggression, sociometrically popular students are equally aggressive as sociometrically 'average' children. However, because of their social skills they are able to assert themselves and still ensure positive social outcomes.

At young ages, children maintain simple friendships so long as they prove 'fun' and 'engaging.' Sociometrically popular students have the social skills necessary to make nearly all social interactions mutually enjoyable. As sociometrically popular students age, their social abilities enhance and sustain friendships because trustworthiness and loyalty are important components of friendship across the lifespan (Sherman, deVries & Lansford, 2000). "Although there is a set of distinctions between popularity (i.e., being liked or accepted by peers) and friendship (i.e., the experience of a close, mutual, dyadic relationship), [sociometrically] popular children appeared to have a behavioural repertoire that would promote success in either domain (Newcomb, Bukowski & Pattee, 1993, p. 118)."

The behavioural repertoire of **rejected students** is opposite to that of sociometrically popular students. Regardless of who rates them, rejected students are perceived as more aggressive, less socially adept and more withdrawn than their peers. These students are often

disruptive and likely to engage in aggressive acts. A common pattern is for them to hover around the edge of a social activity before making a forceful and inappropriate bid for inclusion.

Rejected students are generally withdrawn and display social anxiety and depression likely as a result of their frequent social failures. Rejected students are not, however, necessarily without friends (Brendgen & Little, 2000).

Forgotten students are termed **neglected** and their behavioural profile intuitively matches their title. Relative to average students, neglected students are not aggressive; however, they have fewer positive social traits and engage in few positive social interactions. They have little impact or visibility within the student body. Because they lack aggressive tendencies, neglected students are not actively disliked in the way rejected students are. Although the majority of students are relatively indifferent to them, neglected students usually have one or two close friends and do not suffer from elevated levels of depression or social anxiety.

Controversial students are an eclectic mix of behavioural attributes. Relative to rejected students they are nearly as aggressive; yet, they still maintain many of the positive social qualities that distinguish sociometrically popular students. An interesting characteristic of controversial students is that adult observers do not rate them as particularly aggressive whereas their peers do. Because aggression is such a broad category of behaviour, it is possible that controversial students are committing aggressive acts that are distinct from those of rejected students. It is also possible that they are able to hide their aggressive behaviour from outside observers.

Howe (2010) conducted a qualitative review of the literature and summarized the behavioural distinctions between sociometric categories as follows (p122):

	Popular	Controversial	Rejected	Neglected	Average
Sociability	High	High	Low	Low	Moderate
Aggression	Low	High	High	Low	Moderate
Withdrawal	Low	Low	High	Moderate	Low

Table 1: The behavioural correlates of sociometrically popular, controversial, rejected, neglected and average students.

2. Input of energy, the result of attraction

The most important correlate of perceived popularity is physical attractiveness. This fact provides the first clue to the popularity puzzle. There is no doubt that attractive people have a

certain magnetic pull. In fact, the word itself, 'attractive', implies the process of getting close. Several decades of research is now available to show that attraction primes interpersonal approach goals and the desire to differentially maintain pre-existing bonds with attractive people (Lemay, Clark & Greenberg, 2010). Seeking proximity is actually only one of myriad conscious and unconscious behaviours that result from interpersonal attraction. The term 'input of energy' refers to this constellation of behavioural and cognitive changes.

2.1 Input of energy takes many forms

Attitudinal changes

Attractive people are evaluated more positively than unattractive people across a wide variety of dimensions including intelligence, factual knowledge, morality, emotional adjustment and so forth. This evaluative bias can have serious ramifications. For example, unattractive defendants in a trial are judged more harshly in terms of the punishment they should receive (Byrne & Griffitt, 1973). People rate their interactions with physically attractive others as more satisfying (Garcia, et al., 1991). Physically attractive males engaged in a debate are rated as having more favourable personality traits (Mims, Hartnett, & Nay, 1975). And, in contrast to unattractive children, attractive children do not suffer a decrease in teacher rated popularity after acts of aggression (Rosen & Underwood, 2010). Other examples of biased evaluative judgements are readily available.

Subtle changes in body language

Attraction affects non-verbal communication in numerous ways. When a conversation partner is attractive, the participants adopt a more open and inviting posture (Moore, 2010). Changes in non-verbal behaviour are so robust that visual contact, physical proximity, bodily postures, relaxation, and arm position have all been considered as dependent measures of interpersonal attraction (Byrne & Griffitt, 1973).

Attempts at proximity

Attraction motivates proximity and individuals will move physically, verbally and symbolically closer towards those people they find attractive. Physically, people maintain closer seated and standing distance between themselves and attractive targets. Verbally, people make more attempts at verbal communication between themselves and attractive targets. Symbolically,

people will place representations of themselves (i.e., a doll or picture) closer to attractive individuals that are also represented in a scene (Byrne & Griffitt, 1973). In short, people seek and intensify interactions with physically attractive people (Garcia et al., 1991).

Cognitive intrusion

Irrepressible attraction, sometimes referred to as infatuation, can result in obsessive or obtrusive thoughts. The love-possessed tend to focus their attention on specific events or objects that involve the target (Fisher, 2000). Visual behaviour likely enables intrusive thinking because attractive targets are looked at more, seen as larger and are more easily recognized (Byrne & Griffitt, 1973).

Emotional reactions

Using facial electromyography, Principe & Langlois (2011) found that attractive and unattractive faces evoke different facial correlates of emotion. The fact that attraction can invoke an emotional response is not surprising. Attraction is well known for its ability to cause “a host of labile psycho physiological responses including exhilaration, euphoria, increased energy, sleeplessness, loss of appetite, trembling, a pounding heart, and accelerated breathing. Many also report feeling anxiety, panic, and or fear in the presence of the beloved. The love-possessed are subject to abrupt mood swings, too. If the relationship suffers a setback, the attracted individual may fall into listlessness, brooding and feelings of despair (Fisher, 2000, p. 99).”

Quality / content of conversation

In conversation with attractive men, women will set an exclusive tone by making fewer referents to third party individuals. Men will respond to an attractive female by making more attempts to “adopt their partner's cognitive perspective, presumably with the goal of maximizing the success of these overtures (Garcia et al., 1991, p. 45).” Regardless of gender, the more attractive a target is the more likely an individual is to make personal disclosures—an activity that is positively related to the development of personal bonds (Brundage, Derlega & Cash, 1977). Tone of voice changes as a function of attraction and participants are more responsive when speaking over the phone with someone they believe to be attractive (Andersen & Bem, 1981). Attractiveness also enhances the accuracy of the communication (Byrne & Griffitt, 1973).

Helping behaviour

Wilson (1978) found that an attractive target is better able to elicit help from heterosexual targets. In two short spontaneous situations, unattractive confederates were helped less when they asked for either directions or assistance mailing a letter.

Social influence

Physically attractive people have more social influence. For example, Mims, Hartnett, & Nay (1975) found that physically attractive females are more successful when attracting volunteers to a hypothetical experiment. “High attraction to models has been found to facilitate the imitation of preferences in buying paint, going deep-sea diving, choosing nonsense syllables, and selecting games (Byrne, Griffitt, 1973, p. 326).”

Impression management

Self-presentation is an integral part of human interaction. Numerous researchers have shown that verbal and nonverbal behaviours are affected by self-presentational motivation (Levine & Feldman, 1997). Depending on who is being interacted with, self-representational goals change. At times, the overarching goal may be to appear competent. At other times, the overarching goal may be to appear likeable or friendly. “[W]hen one’s expressive behaviours are relevant to others, then those behaviours are regulated in socially appropriate ways in the presence of the relevant target persons (Depaulo, 1992, p. 2)”.

The use of impression management is not unique to adults or older adolescents. There are only four cognitive abilities needed to engage in self-presentation: (1) awareness that others evaluate you; (2) awareness that this evaluation can be controlled; (3) knowledge of how to control evaluations; and (4), motivation. Banerjee (2002) has shown that children as young as six can engage in motivated self presentation. Four common self presentational goals are ingratiation, self-promotion, supplication and intimidation and each of these can be relevant to students interacting with peers depending on the circumstance.

2.2 Why we input energy and why we can't stop it

The number of different ways input of energy manifests itself begs the question of why it is such a robust phenomenon. Fisher (2000) hypothesizes that the human desire to seek out and bond with attractive people is likely evolutionary in origin. Attraction, she argues, exists to maximize the use of mating energy by forcing individuals to focus their attention on the best

available partners. Her evolutionary hypothesis is intuitively pleasing for several reasons. First, it is easy to make a conceptual link between evolution and those characteristics that make us attractive. Physical attractiveness, for example, is associated with high quality genetics resistant to such things as disease and parasites. By preferentially seeking physically attractive mates, people increase their chances of producing genetically healthy offspring. Second, input of energy is often aimed at catalyzing the relationships that ultimately lead to procreation. Finally, the cognitive circuitry that underlies input of energy is thoroughly embedded in our physiology (Fisher et al., 2002).

Several studies have determined that viewing physically attractive people causes the release of dopamine in the limbic system—a brain system consistently implicated in heightened attention, motivation, and goal-directed behaviours. Cloutier et al. (2008), used fMRI to demonstrate that attractive faces activate multiple parts of the brain's reward circuitry, the nucleus accumbens and the anterior cingulate cortex. The nucleus accumbens has long been known to function during appetitive behaviour and the anterior cingulate cortex is thought to be involved in emotional processing. Activity in the medial pre-frontal cortex, an area associated with daydreaming, also increases and Cloutier et al. hypothesized that this is because participants prefer to mentalize more about attractive faces. Finally, Cloutier et al. found that attractive faces activated the orbital frontal cortex in the brains of men only. Why is not yet known but this brain region has been previously implicated in the evaluation of reward based behaviours and also in emotion based decision making. Corroborating the results of Cloutier et al., Principe & Langlois (2010) discovered that the attractiveness of target faces affects the emotional responses of both children and adults: less attractive faces “evoke greater disgust and negative affect than more attractive faces (p. 1).”

The physiological basis of attraction is so thoroughly rooted in our brains that input of energy likely represents an innate set of behavioural responses. It is not surprising therefore, that both children and adults manifest it. Although some conscious control can likely be exerted over it, input of energy, like breathing, will eventually find its expression.

3. The hierarchy of attraction

Not everyone is equally attractive. Life is unjust and input of energy is preferentially bestowed on a small proportion of lucky individuals according to the hierarchy depicted in figure 2. As cold and depressing as it is, the hierarchy is one of the essential components driving grade school popularity.

3.1 The facts of life

The hierarchy of attraction is a visual representation of the following: 1) A tiny proportion of people are attractive to many; 2) the vast majority of people are attractive to some and unattractive to others; and 3) a tiny proportion of people are unattractive to many. The hierarchy of attraction is, in fact, a standard bell curve depicting attractiveness in terms of a percentile. Its existence can be deduced from the following 4 facts of life:

Fact #1: Innumerable characteristics define each individual

The list of characteristics that define an individual is lengthy. It includes everything from physical appearance to socio-economic status to pious behaviour. In brief, it would be impossible to compose a comprehensive list because all characteristics can be reduced to other contributing characteristics. Consider, for example, physical appearance: it incorporates height, weight, symmetry, skin colour, proportion, etc. In turn, each of the characteristics that comprise physical attractiveness can be reduced even further. Symmetry, for example, is dependent on the eyes, ears, limbs, etc.

Fact #2: Human characteristics vary independently or semi-independently

The extent to which an individual expresses one characteristic will have a limited or no correlation with the extent to which they express another characteristic. For example, height is

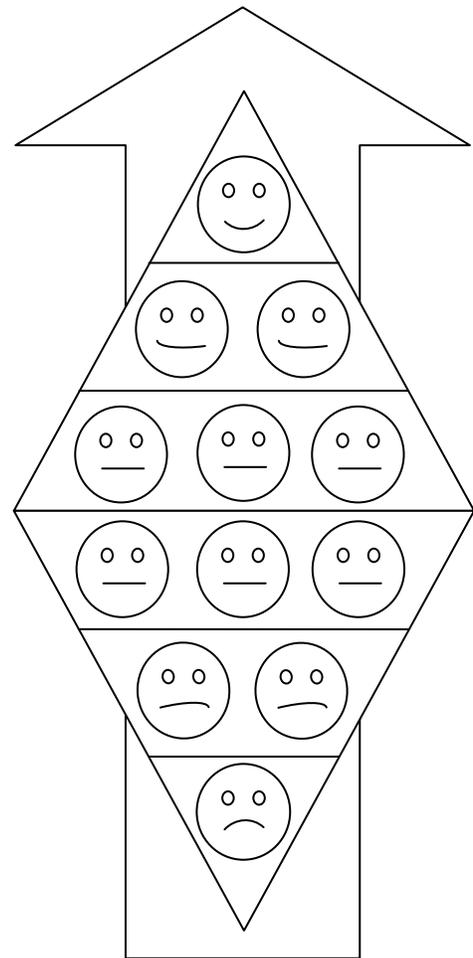


Figure 2: The hierarchy of attraction. Input of energy is directed up the hierarchy.

not related to honesty. Likewise, honesty is not related to musicality. Thus, people with any combination of the latter three characteristics are imaginable. An individual can be tall, honest and musical; tall, honest and unmusical; tall, dishonest and musical; tall, dishonest and unmusical; and so on and so forth...

Unlike height and honesty, there are many characteristics that do correlate; for example, height and weight. The reason why height and weight co-vary is simple, taller people require proportionally larger physiologies to support their extra height. Different characteristics correlate for less obvious reasons; for example, the reason why women are generally better at verbal reasoning. No two characteristics, however, are perfectly correlated. Even with respect to height and weight, a range of proportions are apparent in the human population.

As the number of independent characteristics considered increases, the number of possible combinations increases exponentially. According to fact #1, the number of characteristics that define an individual is limitless; thus, so too is the number of possible combinations. This logical conclusion is reflected in the well known adage that “No two people are exactly alike.”

Fact #3: Facts #1 and #2 result in a normal distribution of people who have a combination of positive and negative characteristics

An immeasurable number of independent sources of variation contribute to the variation present in the human population. All individuals are subject to the ‘lottery of life’ and no one is given the opportunity to choose their genetics, pre-natal and post-natal environments or the exact combination of experiences that will shape their lives. By chance alone, some lucky people will receive numerous positive characteristics and opportunities. Likewise, an equal number of unlucky individuals will receive almost no positive characteristics or opportunities. And, as is the case with all normal distributions, the majority of people will receive some combination of positive and negative characteristics and opportunities.

It is possible to label the ends of the hierarchy positive and negative because individual characteristics do not exist as absolutes. Each derives meaning only when contrasted to a polar opposite. The concept of beauty, for example, depends on its twin concept of ugly in order to have meaning. Likewise are the twin concepts of talented / untalented, tall / short, intelligent / unintelligent and so on. The very act of labelling one individual as talented, tall or intelligent necessarily implies that another individual must be untalented, short or unintelligent by

comparison. The fact that characteristics are relative and not absolute gives the hierarchy directionality and places it on an axis bounded by the general adjectives of positive and negative.

Fact #4: Interpersonal attraction

Interpersonal attraction is a universal human experience (Fisher, 2000). Attraction is not limited to physical attraction because all people find various qualities attractive and unattractive. In addition to physical attractiveness, one of the most pervasive antecedents of attraction is similarity between the target and the observer. The similarity-attraction relationship has been shown to vary almost linearly with the number of attitudes and opinions shared between the target and the observer. This relationship is applicable across cultures and ages and includes children as young as nine years (Byrne & Griffitt, 1973). In addition to attitudes, similarity with respect to ethnicity, socioeconomic status, task performance, emotional state, and perceived social desirability are also important (for a review, see Byrne & Griffitt, 1973).

Beyond physical attractiveness and similarity, the following also make us attractive to some and unattractive to others:

- The violation of rules and other risk taking behaviour (LaFontana & Cillesen, 2010).
- The degree to which people feel that they are liked by the target, the amount of detail known about the target and how positive the anticipated contact will be (Byrne & Griffitt, 1973).
- Social success and affluence. The number of friends someone has and the status of those friends (Dijkstra et al., 2010).
- Socioeconomic status or other displays of wealth (Dunn & Searle, 2010).
- Successful achievement of traditional human needs such as self-acceptance, achievement, affiliation, self-esteem, approval, love and power (Shaw & Skolnick, 1973).

This list is by no means exhaustive. Numerous characteristic can make people attractive to some and unattractive to others. A good rule of thumb for determining what is and is not likely to be attractive is given by McCall (1974). He suggests that what leads to interpersonal attraction is the desire for “various social rewards coupled with [the individual’s] perceived opportunity structure for obtaining those rewards (p. 228).” The utility of McCall’s assertion is that it captures elements beyond physical attractiveness. For example, among a conference of business men, the

most attractive characteristic is likely to be personal wealth and affluence. The reason is because others will perceive affluent peers as representing excellent opportunities for personal rewards: e.g., investment and networking opportunities.

3.2 The hierarchy of attraction

The hierarchy of attraction is the result of facts #3 and #4. As soon as an observer becomes privy to information concerning a target individual, judgements of attraction are made. Some individuals will possess all of the qualities deemed attractive to an observer and some will possess none of the qualities. Because the characteristics that make people attractive and unattractive (fact #4) are normally distributed throughout the population (fact #3), some people will be very attractive to a large percentage of people. An approximately equal number of people will be very unattractive to a large number of people. And, the majority, as always with normal distributions, will be attractive to some and unattractive to others.

The hierarchy of attraction is neither rigid nor prescriptive for a number of reasons: First, it is dependent on context. Amongst a cohort of retirees, an old man may find himself atop the hierarchy. Amongst a group of university students, however, the same man is likely to find himself at the bottom. Second, the hierarchy of attraction is not static over time and people cannot be classified into permanent rungs or percentiles. If a person loses a noticeable amount of excess weight, the number of people who find them attractive will increase. Third, someone in the 75th percentile is not necessarily going to find someone in the 80th percentile attractive nor are they necessarily going to find someone in the 70th percentile unattractive. The hierarchy only depicts what is likely to occur based on broad generalizations.

Although the hierarchy depicted in figure 2 is the result of several levels of abstraction, its existence can be deduced from four facts of life: (1) all of us possess a unique combination of characteristics; (2) the characteristics that define an individual vary independently or semi-independently; (3) combinations of positive and negative characteristics are distributed normally throughout the population; and (4), different characteristics make us attractive and / or unattractive to different people.

3.3 The hierarchy of attraction is ever present at all levels of relatedness

Levinger (1974) summarizes the different ways in which humans can relate. According to his analysis, all interpersonal relationships fall into one of four categories: (1) zero awareness;

(2) unilateral or bilateral awareness; (3) surface contact; and (4), mutuality. Of the vast number humans inhabiting the earth, people are aware of only the tiniest fraction. This complete lack of knowledge is the fundamental characteristic of category one, zero awareness, and it is the default category where all relationships begin. Even in the most extreme case of a mother and child, the relationship begins with zero awareness because the child exists from the time of conception but the mother remains ignorant until she learns otherwise.

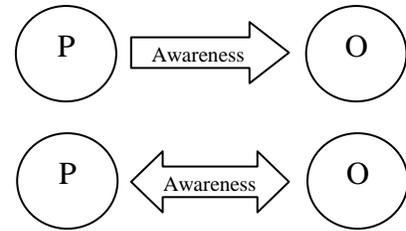


Figure 3: Category two of human relatedness, unilateral and bilateral awareness.

As soon as an individual becomes aware of another's existence, the relationship immediately passes into category two, unilateral or bilateral awareness. Unilateral awareness exists when one individual (P) is aware of another's (O's) existence but the awareness is not mutual. This type of relationship is typified by celebrities and the rest of society. Although P (a member of the public) might form attitudes, beliefs and opinions about O (the celebrity), the awareness is unilateral. Bilateral awareness, in contrast, arises when awareness is mutual: for example, two celebrities who have never met. The fleeting relationships that exist between strangers who are mutually aware but never interact also fit this category.

The fundamental distinction between category two and category three (surface contact) is the lack of interaction. As soon as an interaction takes place, be it verbal or non-verbal, the relationship enters the third category of human relatedness, surface contact. Relationships that fit this category are characterized by superficial interactions and guided by pre-determined roles such as greeting a taxi driver, paying a teller, holding the door for a stranger, ordering food, etc. Each of the preceding interactions is determined mostly by an external protocol.

Categories one and two of relatedness have a clear and distinct boundary, the absence or presence of awareness. Likewise, categories two and three have a clear and distinct boundary, the presence or absence of interaction. In contrast, the distinction between category three and four (mutuality) isn't clearly defined. Technically, the distinction between the two categories is substantial interaction beyond what is guided by an external protocol. What exactly constitutes the distinction between substantial and superficial interaction is, however, debatable. For the purposes of this paper, the important point is that some relationships move beyond superficial contact and towards a more personal and intimate relationship.

Numerous types of relationship fall within the fourth category of mutuality. Examples include everything from short friendships to long term romantic relationships. As depicted in figure 4, the depth of the relationship can vary from minor to major. As implied by the overlap, “the P-O relationship is mutual to the extent that the partners possess shared knowledge of each other, assume responsibility for furthering each other’s outcomes and share private norms for regulating their association (Levinger, 1974, p. 105).” Three processes distinguish relationships in category four: interpersonal discovery, interpersonal disclosure, and joint investment in a common bond. Unlike strangers who tend to maintain a superficial level of communication, relationships that have progressed to category four involve the joint processes of interpersonal disclosure and discovery. Close friends and romantic partners routinely share their innermost thoughts and feelings. In fact, interpersonal disclosure and discovery is one of the characteristics of close friendships (Newcomb & Bagwell, 2009). The bonding effect of interpersonal discovery and disclosure is known implicitly by most people and this is why an increased rate of personal disclosure is one form of input of energy (Brundage, Derlega & Cash, 1977). Joint investment in a common bond, refers to behavioural coordination and emotional investment. Going on social outings (i.e., behavioural coordination) with another person creates opportunities for shared experience and emotional bonding.

The fact that all relationships begin in category one does not mean that all relationships will progress linearly through the remaining categories. Some relationships will skip category two and three such as in cases of ‘love at first sight’. Other relationships will regress from higher to lower categories such as in cases of divorce. The rate of progress or regress is dependent on the specific relationship.

The process of person perception is a research topic in and of itself. For the purposes of the current paper, the important point is that people make interpersonal judgements instantaneously and continuously as a relationship progresses. Consequently, the hierarchy of attraction exists at all levels of human relatedness beyond category one, zero awareness. In category two (unilateral or bilateral awareness), the hierarchy is based on superficial characteristics and / or indirect knowledge of intangible characteristics such as personality.

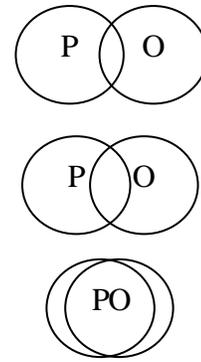


Figure 4: Mutuality ranges from friendships to spousal relations.

Judgments of interpersonal attraction, in fact, can be made on any combination of interpersonal information including visual, auditory, gustatory or written. Consider, for example, the two pictures depicted in figure 5.

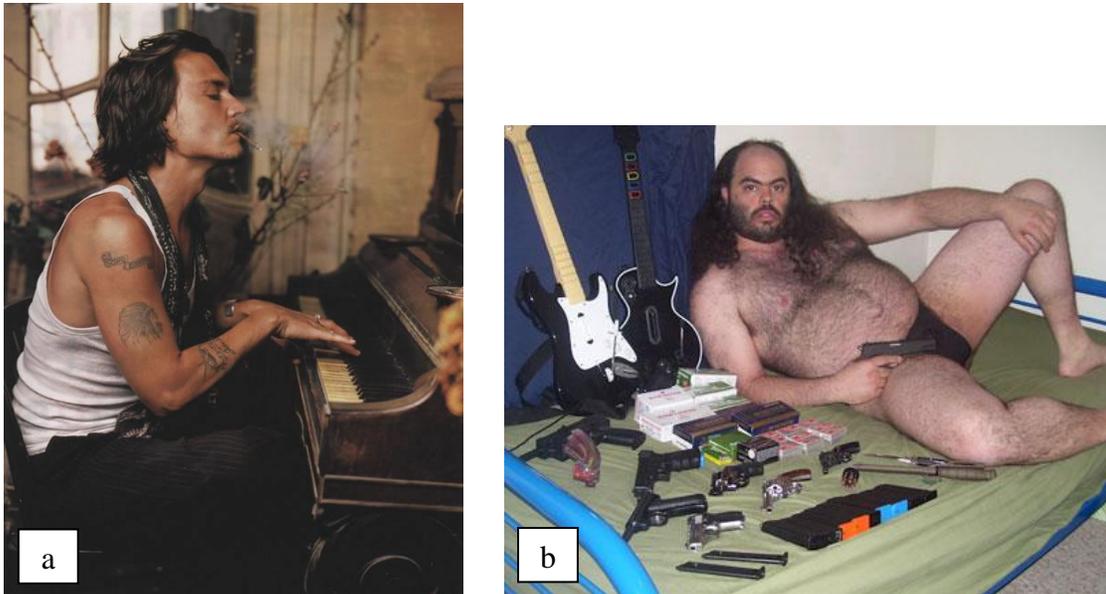


Figure 5: Two individuals who clearly occupy different levels in the hierarchy of attraction.
a) Johnny Depp playing piano. b) Hairy man with guns and fake guitars.

Although no interaction can occur between you and the picture, knowledge of the individuals can be inferred. The man depicted in figure 5.a is clearly Caucasian and well proportioned. From the context of the photo it can be inferred that he is both musical and rebellious. In contrast, the man depicted in figure 5.b is overweight and rather hairy. From the context of the photo it can be inferred that he likes guns and tight binding underwear. Just by looking, it is apparent which of the two individuals will be attractive to a larger percentage of people. If the number of distinct photographs used in the latter example increased, a normal distribution representing attractiveness would result. In fact, when researchers ask judges to rate the physical attractiveness of target photographs, this is exactly what happens (Dunn & Searle, 2010).

As interpersonal relations progress through categories three and four of relatedness, the hierarchy of attraction does not disappear. Rather, the number and complexity of the characteristics whereon judgements of attraction can be made simply increases. Instead of indirect and superficial information, rich multi-modal communication conveys the subtleties of personality and other intangible attributes. Repeated interaction creates opportunities for the

breadth and depth of interpersonal knowledge to increase. For example, after some months of friendship, a boy may discover that a girl he knows has an irrepressible love for Chinese opera. Depending on the boy's idiosyncratic likes and dislikes, this tidbit of knowledge could increase, or decrease, the similarity between him and the girl. As already mentioned, similarity is one of the most important antecedents of attraction (Byrne & Griffit, 1973).

3.4 The special importance of being physically attractive

For the record, let it be stated bluntly: it matters what you look like. Across the lifespan, being physically attractive has been shown to positively affect job related outcomes (Hosoda, Stone-Romero & Coats, 2003; Kunin & Rodin, 1982; Quereshi & Kay, 1986), interpersonal relationships (Rall, Greenspan & Neidich, 1984; Rotem, 1995; Sangrador & Yela, 2000), perceptions of guilt (Abel & Watters, 2005; Wuensch & Moore, 2004), personal identity (Dollinger, 2002; Wiederman & Hurst, 1997) and accessibility to alcohol (McCall, 1997). The benefits of being beautiful are extensive and well documented. Clearly, being physically attractive has its advantages.

Being physically attractive is so important that it affects the hierarchy at all levels of relatedness. There are two reasons why. First, what a person looks like is immediately and constantly apparent. Except in rare circumstances, a person's physical appearance is the first characteristics that people notice. Second, physical attractiveness is an indicator of good genetics and according to evolutionary theory people should preferentially seek and maintain their relations with physically attractive partners. Physical attractiveness is, without question, the single most important variable in determining someone's position in the hierarchy. Therefore, it is also the single most important variable in determining who receives input of energy.

3.5 Differentiating attraction, liking and attachment

Life is unfair and the proposed theory makes no effort to change this fact. The saving grace for less attractive people is that attraction is only one of several psychological processes underlying interpersonal relations. Two other processes relevant to the current paper are liking and attachment.

Liking is the subjective response to hedonistic impact whereas wanting (i.e., attraction), is the desire to achieve hedonistic impact through approach and / or consumption. Because people are often attracted to the things they like, it is easy to mistakenly equate the two.

Attraction and liking are not, however, different manifestations of the same thing. These two processes are distinct and clever researchers have shown that each is regulated by a separate neural mechanism. When DAMGO (an opioid agonist) is injected into very specific parts of the brain it can increase the subjective experience of liking for a stimulus with no effect on attraction. If injected into another part of the brain, DAMGO increases the subjective experience of attraction toward a stimulus with no effect on liking (Berridge et al, 2009).

Attraction and attachment aren't equivalent either. Feelings of attraction and attachment evolved to accomplish two distinct tasks: the identification of high quality mates and the subsequent commitment that facilitates child rearing. Attraction is the intense emotional experience that characterizes first meetings and early relationships. It often involves obsessive thoughts about the target and heightened arousal when they are near. In contrast, attachment can be conceptualized as the desire to maintain a satisfactory emotional union. It is characterized by feelings of calm and security when in the presence of the attachment object. In short, attraction catalyzes relationships and attachment maintains them (Fisher, 2000).

The distinction between attraction, attachment and liking is likely the basis for much irrational behavior. For example, in the case of drug addiction, people are attracted to their drug of choice despite an active dislike for the effects it causes. Likewise, people can remain attached to significant others despite the dissipation of passionate attraction and even abuse (Fisher, 1993, p. 166).

Attraction, liking and attachment are never fully independent of each other. As interpersonal interactions occur and relationships evolve, judgments of attraction, liking and attachment are biased in many ways. Unattractive people should take comfort knowing that judgements of attraction, liking and attachment influence each other making the hierarchy of attraction somewhat plastic. Gross and Crofton (1977) found that people who have positive personalities are also judged as more physically attractive. Horton (2003) found that similarity between an observer's self-perceived attractiveness and a target's attractiveness affects liking. Erwin (1981) found that perceived probability of social acceptance affects judgments of a target's physical attractiveness. Immediately relevant to the current paper is the fact that perceived popularity confers halo effects: LaFontana and Cillessen (2002) found that students rated their perceived popular peers as more physically attractive, socially connected, athletic, and intelligent.

4. Causality of perceived and sociometric popularity.

Together, input of energy, the hierarchy of attraction and the distinction between attraction, liking, and attachment can be used to explain the emergence of perceived and sociometric popularity within a student body.

4.1 Two semi-independent processes

When a student body comes together for the first time, a vast amount of interpersonal information is exchanged. Information is then rapidly processed into an integrated perception (Flora, 2004). General knowledge structures and implicit personality theories round out the initial perception (Bierhoff, 1989, p. 22). The result, almost immediately, is a fluid hierarchy of attraction that shifts and alters as interactions continue and initial perceptions are refined.

Even before any interaction takes place, however, interpersonal attraction on the part of students begins to manifest itself as input of energy. Because of the hierarchy of attraction, input of energy is not directed equally towards all students. Rather, it is preferentially directed towards those at the top. Sustained and directed inputs of energy confer exactly the type of implicit social influence referred to by LaFreniere & Charlesworth (1983). When the lengthy list of behaviours associated with input of energy is considered, it is not surprising that those students atop the hierarchy are immediately recognized as the most prominent, visible and influential within their peer groups (Closson, 2008). Thus, the cause of perceived popularity is not a complicated mystery. In fact, when input of energy is directed preferentially towards a small proportion of students its emergence is the intuitive result. A quick example illustrates the point: Grippled by the throes of puberty, Jay writes a secret note to his best friend Gordon that confesses his love for Daisy. Little to Gordon's knowledge, Daisy sits atop the hierarchy and thus is the object of affection for many boys. In short time, as rumours spread, notes are passed and similar events continue, the entire class will develop an intuitive understanding that Daisy is the most prominent and popular girl.

If perceived popularity is caused by the interplay of input of energy and the hierarchy of attraction, what causes the five sociometric categories? Recall that sociometric popularity is measured by totalling the number of "liked most" and "liked least" nominations received by a student. It has been known for some time that sociometrically popular students are prosocial with highly developed social skills and that this is what leads to being well liked—why is not difficult

to understand. Newcomb, Bukowski & Pattee (1993) summarize the point: “low levels of disruptive aggressive behaviour coupled with their high levels of positive traits, actions, problem-solving skills, and friendship skills make them ideal candidates for status as a preferred peer (p119).”

Sociometric popularity is not, however, synonymous with perceived popularity. There are sociometrically popular students who are not necessarily perceived as popular and vice versa. In fact, controversial children are actively disliked by many and yet are often perceived as popular. Why and what accounts for this discrepancy? The answer is the distinction between the attraction and liking. Perceived and sociometric popularity are caused by two different psychological processes. Attractiveness causes perceived popularity via input of energy. In contrast, personality and social skill causes sociometric popularity via liking. The correlation between sociometric and perceived popularity results because attraction and liking are distinct but temporally linked—attraction comes before liking. Input of energy is designed to catalyze relationships; therefore, students atop the hierarchy are going to receive more opportunities for friendship than their less attractive peers. This preferential treatment leads to increased opportunities for the development of social skills and gives attractive students more chances to be well liked. Attractive students who also possess prosocial personalities are in the best position to achieve sociometric popularity. In contrast, unattractive but equally prosocial students are less likely to be sociometrically popular because fewer of their peers spontaneously attempt relationships with them.

The fact that being attractive creates opportunities for sociometric popularity does not mean that all attractive students are going to be well liked. Attractive students who are nice to some people and cruel to others are likely to become controversial as opposed to sociometrically popular. Take, for example, an imaginary student named Sophia. She possesses all of the correlates of perceived popularity but has strong aggressive tendencies. When she first enters a novel classroom, the response of the student body will be to input of energy by virtue of how attractive she is. Sophia, herself directed by the hierarchy of attraction, will prioritize and seek out those select students towards whom she is attracted. Not surprisingly, Sophia will target the popular clique because they too possess all of the qualities that make people attractive. Because input of energy includes acts of prosocial behaviour, mutual inputs between the popular clique and Sophia will result in a select number of friendships between her and them. But what effect

will Sophia's aggressive tendencies have? Sophia is free to be a total bitch to everyone else among the student population because she enjoys and reciprocates the input of energy of a select few (the popular clique). The result is a sociometrically controversial student who is nonetheless perceived as popular. She is liked by those she treats well (the popular clique) and disliked by those she treats poorly (everyone else).

The situation is vastly more complicated than the previous analysis might suggest because judgements of liking, attachment and attraction are always biased by each other. The fact that judgments of attractiveness and liking are not objective has very practical implications for slightly less attractive students seeking perceived popularity. By virtue of their prosocial behaviour, a less attractive student may be judged as more attractive at the end of the school year as opposed to the beginning. The reverse is also true. An objectively attractive student may come to be perceived as unattractive because of uncontrollable aggression. It should be noted, however, that biases due to liking are never going to fully reverse objective facts. This is why fat girls and short skinny boys are never perceived as most popular. It does not matter how many smiles they give, they will never overtake their naturally attractive peers in the hierarchy.

4.2 A three factor model of grade school social dynamics

How an individual comes to occupy a particular social position within their peer group can be understood by considering three semi-independent factors: 1) how the individual relates with the group; 2) how the group relates with the individual; and 3), the situation.

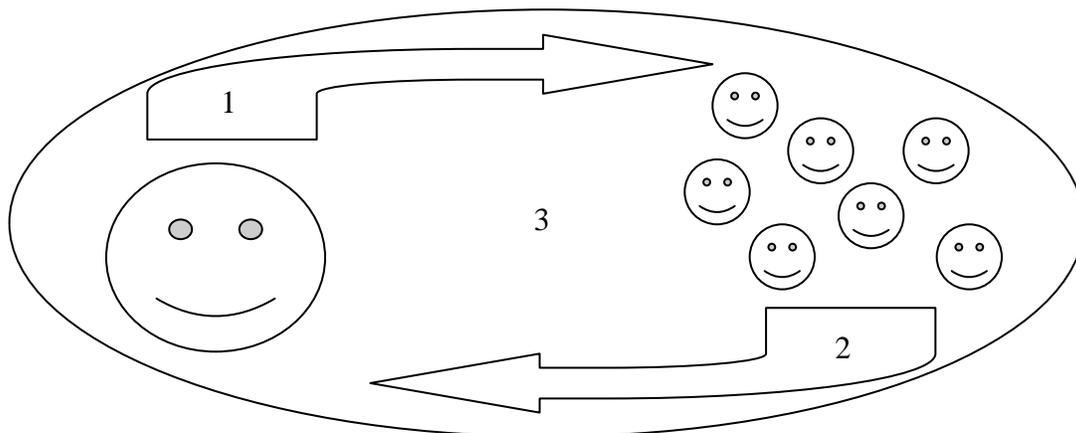


Figure 6: A three factor model of grade school dynamics depicting the individual, the group and the situation.

Factor 1, how the individual interacts with the group, is determined by such things as personality: i.e., is he or she bossy, prosocial, aggressive, withdrawn, etc. Factor 2, how the group interacts with the individual, is determined by external perceptions of such things as social status, physical attractiveness, wealth, etc. And, factor 3, the situation, refers to the context and the opportunities for interaction it creates. Each factor contributes to the eventual position a student obtains within their peer group.

Factors 1, 2 & 3 are semi-independent because each affects the other. Consider the following three examples: liking is the result of prosocial behaviour and being well liked affects perceptions of attractiveness (factor 1 affecting factor 2). Sometimes situations are assigned which forces an interaction between the individual and the group (factors 3 affecting factors 1 & 2). In contrast, input of energy resulting from perceptions of attraction can catalyze opportunities for interaction such as a date (factor 2 affecting factor 3). Currently, no theory can adequately explain why some children are and are not popular because they focus exclusively on factor 1, how the individual relates to the group. For example, the *wikihow* article cited in the introduction of the current paper suggests that “all you need to be popular is a good set of people skills.” This advice does not address factors 2 and 3 which are also important.

Unfortunately, accurately predicting exact social outcomes using the three factor model remains difficult for three reasons. First, attractiveness and personality cannot be reduced to absolutes because people are not unequivocally attractive or unattractive and neither are they unequivocally aggressive or unaggressive. Second, judgments of liking and attraction aren't objective, meaning that both change overtime. Finally, it is impossible to predict the chance opportunities for interaction that result from the social context. For example, being assigned to a classroom with the most popular students creates opportunities for friendship that are unavailable to students in other classes.

5. The explanatory utility of the current theory

The best evidence for the validity of the three factor theory is its explanatory utility. Although it cannot be used to predict all social outcomes perfectly, it can be used to explain numerous observations and lay theories concerning popularity.

5.1 Aggression

Intuitively, both physical and relational aggression should lead to peer rejection. However, researchers have discovered that some students are equally as aggressive as rejected students and yet maintain social status within their group. Controversial students are an excellent example; although equally as aggressive as rejected students, they are still “liked” by many. In research (Adler & Adler, 1995a) and the media, perceived popular students are often described and depicted as cruel and manipulative. In fact, the association between perceived popularity and relation aggression is so strong that some researchers have suggested that relational aggression may be used as a means of achieving or maintaining perceived popularity: “[Our] findings highlight the role of aggressive and antisocial behaviour in obtaining social centrality (Cillesen & Mayeux, 2004, p. 159).” The fact that perceived popular students can retain their social prominence despite their aggressive tendencies is counter intuitive because aggression is repeatedly associated with rejection and dislike. The three factor model explains why the same student can be aggressive and popular: perceived popularity results when input of energy is directed toward highly attractive individuals (factor 2). Depending on their personalities (factor 1), such students may or may not be aggressive. For highly attractive individuals, aggressive tendencies do not lead to rejection for two reasons: First, because attractive students are sought out instinctively by a majority of their peers, they can make friends and enemies so long as they direct their aggressive tendencies selectively. Recall the earlier example of Sophia (see section 4.1). She possesses attractive peer valued characteristics and aggressive tendencies. As an astute social manipulator with *savoir-faire*, she will intuitively realize that she cannot treat all of their friends aggressively lest she be disliked by everyone. Because a majority of peers are bidding for her attention, she can pick and choose who she would like to befriend.

The second reason why aggressive students can attain perceived popularity is because evolutionarily inherited tendencies compel people to accept them. As a result, attractive students will always invoke input of energy independent of how well they are liked. Consider, for example, what would happen if the entire student body tried to reject Sophia. Such a situation cannot be sustained because all of the boys will realize that Sophia’s moment of emotional distress represents their best opportunity to catalyze a relationship with her. The sequence of events that will follow is predictable: boys will input energy; inter-male rivalries will occur; other girls will take note of Sophia’s implicit social power; and finally, she will ultimately regain

her social status despite the fact she is a total bitch. The student body may unanimously dislike Sophia, but they will not be able to quell their simultaneous attraction towards her because attraction and liking are distinct psychological processes. In contrast to Sophia, a student who is unattractive cannot afford to be aggressive because he or she does not experience spontaneous opportunities for friendship. Unattractive students have two options. Either they can curb their aggressive tendencies and take advantage of those friendship opportunities that do present themselves. Or, they can retain their aggressive tendencies and ultimately end up rejected.

Unlike any current theory, the three factor model explains why aggressive students with peer valued characteristics are not disliked while aggressive students with no peer valued characteristics are generally disliked (Vaillancourt & Hymel, 2006). The three factor model also explains why perceived popularity has been found to precede both relational and physical aggression (Cillessen & Mayeux, 2004). Until the student body implicitly acknowledges the status of perceived popular students, it is risky for people like Sophia to show their aggressive tendencies. Once their prominence is established and they become aware of this fact, however, perceived popular children are free to selectively direct their aggression.

5.2 Wannabes and the definition of cool

Adler & Adler (1996) describe a group of children they term 'wannabes'. This group surrounds the popular clique and strives for acceptance. Wannabes have a tendency to assume the opinions of perceived popular students and mimic their behaviour. They are quick to do their popular peers favours even if it involves deviant behaviour. Wannabes are often the focus of disparaging remarks and only occasionally are they incorporated into the popular cliques activities. Despite their best efforts, wannabes are never fully integrated into the popular clique. How does the three factor model explain the emergence of wannabes and their persistent failures at acceptance?

When a group of students comes into contact for the first time, relationships are tentative. Despite being based on superficial characteristics, the hierarchy of attraction is present and advantages some students over others. At the same time early acquaintances are forming, new information, such as who is the best athlete, is changing and refining the hierarchy of attraction. In time, it becomes apparent to the student body who among them receives the most inputs of energy. In time, members of this group self select each other as preferred friends and exclude or

ignore those who wield less social power. Consider the following example taken from Adler & Adler (1995b):

“Yeah, Denise liked me best for awhile, and she and I were real close. So, even though she was the leader, I was up there too. But then the boys started liking Kristy because she was a blond. And my boyfriend dumped me and went off with Kristy. And then Denise was best friends with Kristy and was just a bitch to me. I went way down (p. 78).”

In the above example, after it becomes apparent that Kristy wields more social power than the speaker, Denise intuitively seeks Kristy out as a new best friend. Self selection among the most attractive students is ultimately what leads to the popular clique. Those students who do not attract input of energy are excluded or actively ignored such as occurred to the speaker.

The early recognition of popularity makes already attractive students even more attractive. Not only do students recognize social stratification, they also explicitly and implicitly seek and desire status. Often, they are willing to forgo academics, athletics, friendship, romance, rule obedience and empathy in order to achieve or maintain perceived popularity (LaFontana & Cillesen, 2009). In general, the desire for status follows an inverted parabola between the ages of 6 and 22 peaking around the ages of 17 and 18 (grades 11 and 12). Once it becomes apparent who is the most popular, some students begin seeking the reflected glory of their more prominent peers as a means to attain perceived popularity themselves (Dijkstra et al., 2010). These are the wannabes: students who attract few inputs of energy but seek only friendship with the popular clique.

One of the most apparent forms of input of energy that wannabes engage in is impression management. This is why they have a tendency to assume the opinions of popular students and mimic their behaviour. Unfortunately a wannabe’s attempts at self presentation are easily recognized by peers. Bennett & Yeeles (1990) presented children with stories containing examples of either self-promotion or ingratiation. They found that by the age of eight, children have an emerging understanding of how interpersonal goals are reflected in actions; for example, laughing at misunderstood jokes in order not to appear stupid. By the time children are eleven, most can explain self-promotion or ingratiation tactics in terms of interpersonal motives. Research by Watling & Banerjee (2007) corroborates these findings.

Because of their mimicry and constant attempts at inclusion, wannabes often possess the same physical accessories as the popular students and engage in the same activities. Yet, the wannabe's never quite attain the adjective 'cool'. The reason why is because 'cool' is not a reflection of anything objective. There is little inherent in an object or action that makes it 'cool' hence why its definition is so fluid across generations. Consider what happens when an innovative hairstyle is portrayed in a popular television show. When a perceived popular student mimics it, input of energy compels their peers to perceive it as 'cool': recall that one form of input of energy is attitudinal change. In contrast, less attractive students who mimic the same hairstyle are likely to be perceived as wannabes who are trying to be 'cool.' It is the same hairstyle and yet it invokes two different appraisals! Why? Because of factor 2, how the group relates to the individual. In general, whether or not something is perceived as 'cool' is dependent on the individual's current social status and not the object or action itself. This is why wannabes and rejects, no matter how hard they try, will never be considered 'cool' nor are they likely to set trends.

5.3 Sociometric success and friendship without perceived popularity

Across the lifespan, friendship is an important type of relationship. As children age, the definition of friendship expands beyond 'someone who benefits me' to a more reciprocal orientation (Shaffer et al., 2010, p. 498). For preschoolers, any pleasant interaction between themselves and another is often enough to constitute a friendship. For children aged 6 to 8 years, the necessary features are common or shared interests and reciprocation of action. Without proper reciprocation, a friend can quickly turn into a non-friend. As the cognitive capacity of children increases during later childhood (8 to 10 years), the requirements of friendship expand to incorporate mutual exchanges of trust, kindness and affection. As adolescence begins, behaviour alone is no longer enough to sustain friendship. Rather, there must be a mutual sharing of interests, perspectives, feelings and intimate thoughts. Adolescent friends share intimate reciprocal emotional commitments, acknowledge strengths and accept weaknesses.

Having friends is an important predictor of social adjustment across the lifespan because friendship offers important psychological support against negative states such as depression and anxiety. Engaging in close relationships also helps children develop important social skills in addition to providing intellectual stimulation and companionship. Especially in adolescence, friends are an important source of social support and influence buffering adolescents against

emotional upheaval. During adolescence, adolescents spend more time with friends than any other age group (Shaffer et al., 2010, p. 695; Sherman, deVries & Lansford, 2000)

The best differentiating factor between friends and non-friends is the amount of time they spend in each other's company engaging in various activities. The time spent together is also more intense because friends are more likely to cooperate, share, help, and engage in positive affective exchanges. Frequent talking, touching and smiling are all markers of friendship. Other positive relationships share these attributes but the intensity and frequency is greater in friendship dyads. Although close intense social interaction occasionally results in conflict, friends are more likely than non-friends to engage in effective conflict resolution (Sherman, deVries & Lansford, 2000). In contrast to children's relationships with parents and teachers, peer relationships are horizontal in nature. In other words, neither friend tends to exert dominance over the other nor is there intense competition to do so. Friends are often markedly similar and mutual liking, closeness and loyalty are excellent indices of relationship intimacy (Newcomb & Bagwell, 2009).

Being sociometrically popular does not necessarily translate into having many friends. Although linked, friendship and sociometric popularity are not equivalent. Bukowski et al. (1996) explain:

“A central conclusion that we draw from the previous discussion is that liking is the main thread linking [sociometric] popularity and friendship. Indeed, liking is one of the two fundamental dimensions of [sociometric] popularity, and reciprocated liking is a basic condition or feature of friendship. Accordingly, being liked by at least one peer is a minimal condition for both friendship and [sociometric] popularity. In so far as a child has to be liked by at least one other peer in order to have a friend, then [sociometric] popularity and friendship are necessarily linked. This condition, however, is hardly a guarantee that a child will have a friend; it is only a necessary condition for friendship. At the other end of the liking dimension, children who are liked by many peers have many opportunities for friendships.

In this regard we see [sociometric] popularity, via the dimension of acceptance or liking, as an *affordance* of friendship. By this we mean that liking or acceptance increases the likelihood that a child will have a friend because: a) at a minimal level it is a necessity of friendship (i.e. a child needs to be liked by at least one other peer

to have a friend), and (b) at higher levels of liking, children have more opportunities for friendship than do children at lower levels of liking. It is also conceivable that friendship may promote popularity by bringing a child, via her / his friend, into a new network of individuals, thus giving the child opportunities to be liked by a larger number of peers.”

Perceived popularity (being socially dominant), sociometric popularity (being well liked) and friendship (possessing an intimate relation) are three distinct concepts and students possessing any combination of these three conditions are possible. For example, it is well known that perceived popular students are often disliked by many, rejected students often find friends, and sociometric popularity doesn't guarantee social dominance. Despite being distinct, all three concepts are routinely correlated (Bukowski et al., 1996; Vaillancourt & Hymel, 2006). What then explains the correlation and temporal relationship between them?

According to proposed theory, all three concepts are independent because each is driven or sustained by a separate psychological process: perceived popularity is largely dependent on attraction; sociometric popularity is largely dependent on liking; and, friendship is often maintained by an attachment. Consequently, each can be achieved independently or in tandem with the others. Consider, for example, the case of friendship dyads between rejected children. According to the three factor model, despite the complete lack of a catalyzing attraction, their shared situation (e.g., being chosen last for group work) forces rejected students into repeated contact. By virtue of their poor social skills, conflict and dislike are likely. However, repeated interaction and mutual similarity will eventually lead to attachment and likely a friendship.

Although perceived popularity, sociometric popularity and friendship can be achieved independently or in tandem, they are routinely correlated because the underlying psychological processes, attraction, liking and attachment, are temporally linked. Consider: when a group of students first meets, the hierarchy of attraction directs inputs of energy and catalyzes interactions. Consequently, the most attractive students have the most opportunities to interact and be liked. In contrast, attention is rarely directed towards students at the bottom of the hierarchy because energy is limited and children cannot divide their attention equally among all their peers. Very prosocial children who are also incredibly unattractive are rarely going to get the opportunity to be well liked because their peers do not instinctively bid for their attention. In

addition to the temporal relationship, perceived popularity, sociometric popularity and friendship are related because judgements of attraction, liking and attachment are all biased by each other.

It is interesting to note that around the age of 11, the correlation between sociometric popularity and perceived popularity begins to decrease and the two concepts slowly become unrelated (Kosir & Pecjak, 2005). The reason is because by the time students reach approximately grade six, the social hierarchy has become firmly established. Average students who have not been chosen as preferred among the popular clique realize that their inputs of energy are being unreciprocated. That is to say, they come to appreciate that the most popular student is not necessarily their friend. Hence, out of necessity and circumstance, average students begin forming attachments among themselves and this is reflected in their sociometric nominations. Although the popular clique is still perceived as such, the average student is now able to implicitly differentiate between feelings of attraction and liking.

5.4 One more example: Barrie

In order to illustrate how the three factor model can be used to understand how any student comes to occupy a social position, another example is developed here. Barrie is the top female athlete who, together with her friends, makes up the popular clique. Unfortunately for her, she is not physically attractive relative to her friends who also play sports. Because she is well liked and well received by the popular clique, she is not considered a wannabe. The majority of the student body perceives her as popular even though she considers herself otherwise and reports feeling largely ignored. Despite the fact she is invited to all of the most prominent social events and is a very pleasant person, the student body remains relatively indifferent to her. How?

The above scenario contains two counterintuitive facts: 1) Barrie isn't particularly physically attractive and yet she is perceived as popular and not a wannabe; 2) the majority of the student body is indifferent to her despite the fact that she is a pleasant person and a member of the popular clique. Although the above scenario is counterintuitive, it is not unreasonable. Because Barrie is the top female athlete, her athletic peers are going to find her attractive as a team mate during extracurricular sports. During these interactions, they will learn to like her because she is a pleasant person. Eventually, repeated pleasant interactions will lead to friendships between Barrie and the other female athletes. Unfortunately for Barrie, the fact that she is less physically attractive relative to her friends will cause the boys to overlook her when

they input their energy. Sustained inputs of energy will make her friends the most popular and Barrie will be perceived as popular by virtue of their ‘reflected glory’. Outside the context of extracurricular sports, the student body will remain relatively indifferent to her because they make few sustained attempts to like her. Although she may be a very pleasant person, she will not be the target of focused affection. This is why there is a disjunction between the opinion of the student body and Barrie herself. Although they perceive her as popular by virtue of her clique association, she feels unpopular because she never seems to get the same attention as her friends.

7. The phenomenon of grade school popularity

According to the current theory, grade school popularity is the product of attraction, liking and attachment—three fundamentally human processes that are ubiquitous throughout life (Fisher, 2000). It would seem, therefore, that popularity should exist across the lifespan and not be limited to the grade school context. The reason popularity is associated with grade school is not because human psychology changes after graduation. Rather, it is because popularity is a by-product of the grade school context. It is a social phenomenon that only reaches full fruition because of a particular set of circumstances.

7.1 The grade school context

A limited pool of potential relations

A challenge facing the modern education system is getting millions of students educated in both an effective and efficient manner. Efficiency necessitates that the curriculum be standardized into grades so that children can transfer between institutions and receive a comparable education anywhere in the country. For its part, efficacy necessitates that children be schooled in reasonably sized classes of approximately 15 to 30 students. Not surprisingly, the net result in most modern school systems is a relatively stable group of students that moves together through a progression of subsequent grades. Ultimately, students spend their entire grade school careers interacting with the nearly the same group of peers on a regular basis year after year.

Repeated yearly interaction has important implications for students. Under such circumstances, relationships carry momentum and reputations follow students year after year. For popular children, this is a benefit. At the outset of each year, they need not re-establish their social dominance. For others, such as rejected children, the implication is a perpetual stigma.

After their name becomes synonymous with rejection, it becomes incredibly difficult, if not impossible, for them to break free from a cycle of social failure. Unlike many situations in adult life, students cannot easily escape their social context. By virtue of how the school system is designed, students are perpetually stuck with the same people—people who are not likely to spontaneously change their interpersonal opinions at the outset of each year.

The high interpersonal need for esteem

In his seminal book, *Motivation and personality*, Maslow (1987) explicitly describes the intrinsic human need for esteem as:

“the desire for reputation or prestige (defining it as respect or esteem from other people), status, fame, glory, dominance, recognition, attention, importance, dignity , or appreciation. [...] Satisfaction of the self-esteem need leads to feelings of self-confidence, worth, strength, capability, and adequacy from being useful and necessary in the world. But thwarting of these needs produces feelings of inferiority of weakness and helplessness (p. 21).”

Numerous researchers have confirmed that a failure to form positive peer relations and achieve esteem during grade school leads to the negative social and emotional outcomes alluded to by Maslow (Shaffer et al., 2010, p. 667). Students, adolescents especially, spend exorbitant amounts of time with their peers and so it is not surprising that they are willing to sacrifice other goals in order to maintain or achieve social acceptance (LaFontana & Cillesen, 2009). Without question, peers play an important role in the formation of adolescents’ general self-concept and emotional stability (Hay & Ashman, 2003). The similarity between the definitions of perceived popularity and esteem together with the prominence of peers in the life of students helps explain their preoccupation with popularity.

The influence of hormones and sexual desire

Puberty, the monumental step in human sexual development, further complicates the drama of grade school popularity. The release of various hormones primes sexual interests and creates the physiological need for sexual expression. This fact intensifies the subjective experience of attraction and the subsequent expression of input of energy. Humans, like all mammals, preferentially pursue certain individuals (Fisher, 2000) and this solidifies the social

dominance of sexually attractive students. Without doubt, this is one reason why physical attractiveness correlates so strongly with perceived popularity.

The limited perspective and maturity of young children / adolescents

From a purely biological perspective, students have brains that are not yet fully developed. Furthermore, they lack world experience and wisdom. Unlike most adults, students do not fully appreciate the impermanence of time and the extent to which their current friends will move in different and varied directions after high school. Nor can they appreciate the sheer number of interpersonal opportunities that exist beyond graduation. It should not be surprising, therefore, that their social context becomes a defining feature of their lives. For the majority of students, it is all they have ever known year after year and they lack the foresight to see the bigger picture.

7.2 The re-emergence of popularity after graduation: medical school

The above list of circumstances is not definitive. There are likely other factors that contribute to the social phenomenon that is grade school popularity. The aforementioned factors do, however, partially explain why popularity is specifically associated with grade school despite the fact that attraction, liking and attachment exist throughout the lifespan. If the current analysis is correct, wherever the grade school context is approximated, the phenomenon that is popularity should re-appear. An excellent example is medical school.

Most medical curriculums are four years in length and coincide with the standard academic year. The majority of first year medical students in Canada are in their early 20's when interest in sexuality is still peaking (Barr, Bryan & Kenrick, 2002). Although little scientific data is available, informal blogs confirm that popularity re-emerges as a key concern in the life of medical students.

“In medical school you can find the nerds, the jocks, the popular kids, and the bullies. They’re just called by different names. For example, bullies have graduated to being called gunners. The really mean ones have an even cooler name: snipers. [...] Even the class elections, where interesting promises and platforms can be found aplenty, seem like popularity contests. It’s just tough to grow up.”—W. J. (2009)

**“Hi all—I am going to be a [first year medical student] for 2010 - 2011 school year. A main concern I have is establishing good relationships with my classmates / getting to know them well enough that they remember my name and can at least have a good conversation if I meet them on the streets. [...] So I am worried about the following: How important is integrating yourself into your class? I don't want to be the loner on the weekend who doesn't go to bars with his med school peers, (only been to one once in college). Or is everyone too busy studying to do this?”—
Anonymous (2010)**

In addition to medical school, the current theory of popularity and the three factor model is likely applicable to numerous social situations including other professional schools, dormitories, summer camps, and office politics.

8. Future directions

Although the proposed theory explains current data, it remains untested. Three simple experiments that could be used for this purpose are developed here.

Experiment 1

Currently, “relatively little is known about popularity among youth in non-Western societies. [...] It has often been questioned whether popularity, along with its stereotypical associations, is primarily a North American phenomenon or limited to Western societies (Cillessen, 2011, p. 295).” With respect to the latter question, the current theory is unequivocal in its prediction that grade school popularity is a universal phenomenon. Because it is governed by attraction, liking and attachment—three processes ubiquitous throughout human populations—the phenomenon of grade school popularity should be equally prevalent across cultures wherever the North American grade school context is approximated. Simple replication of seminal North American studies in different countries would satisfy the current question (e.g, Coie, Dodge & Coppotelli, 1982). Regardless of where the research is carried out, the proposed theory predicts that the concepts of sociometric and perceived popularity will be applicable. Furthermore, the already well defined correlates of each will remain the same; for example, physical attractiveness should correlate with perceived popularity and prosocial behaviour with sociometric popularity.

Experiment 2

An important prediction made by the proposed theory was alluded to earlier in the current paper. Recall the example of the attractive student Sophia who, although aggressive and disliked by many, retains perceived popularity. According to the current theory, such a situation is possible because feelings of attraction will always compel others to input energy regardless of feelings of liking or attachment. The important prediction that stems from this analysis is that students who are attractive should rarely find themselves rejected or neglected regardless of how they generally behave towards others. The reason is because consistent inputs of energy ensure two things. First, that highly attractive students consistently draw attention and therefore cannot be forgotten: i.e., neglected. And second, that highly attractive students have repeated opportunities to interact with peers and therefore learn important social skills. Unless they are incredibly dense, almost never will a highly attractive student be so consistently unfriendly and aggressive towards everyone that they become disliked throughout their grade school career: i.e., rejected. Most will eventually learn how to treat at least a select few of their peers in ways conducive to friendship. To date, many studies (Vaillancourt & Hymel, 2006) only correlate attractiveness with sociometric popularity. In the future, researchers should correlate attractiveness and other peer valued characteristics specifically with each of the five sociometric categories. The proposed theory predicts that attractiveness will correlate negatively with the being neglected or rejected and positively with being popular or controversial.

Experiment 3

If perceived popularity is caused by inputs of energy directed according to the hierarchy of attraction, then a distribution of perceived popularity should approximate the shape of the hierarchy: i.e., a bell curve. In other words, in any given student body there should be a very select few who are consistently labelled as “the most popular” and a slightly larger group of students who are labelled as “popular”. Likewise, there should be a roughly equal number of students who are labelled “the most unpopular” and “unpopular”. The majority of students should be considered neither popular nor unpopular but somewhere in between. A simple experiment could confirm this hypothesis. Students in a classroom would be asked to explicitly group all of their peers into different categories of perceived popularity (i.e., most popular, popular, average, unpopular, most unpopular). If the current theory is correct, the resulting distribution of perceived popularity should approximate a bell curve. A simple next step to this

experiment would be to assess each student according to their peer valued characteristics such as attractiveness, athletic ability and so on. The resulting distribution of peer valued characteristics should correlate very strongly with the distribution of perceived popularity. Furthermore, a student's position in the hierarchy should correlate only poorly with how well they are liked.

Conclusion

Let there be no doubt, concern with popularity dominates the minds of grade school students. The original essay (appendix 1) whereon the current research is based was itself motivated by a desire for popularity. Unfortunately for students, no currently available theory other than that developed here presents a clear explanation. The three factor model addresses this deficiency and offers a coherent conceptual framework wherein popularity can be understood and studied. According to it, any student's social position can be understood by looking at three factors: 1) how the individual relates to the group; 2) how the group relates to the individual; and 3) the situation. The major shortcoming of current theories is that they focus on factor 1, how the individual relates to the group. Such theories inevitably prove unsatisfactory because they cannot explain the distinct emergence of sociometric and perceived popularity or the correlation that links them.

According to the current theory, sociometric popularity is driven by how the individual relates to the group (factor 1) and is dependent on prosocial behaviour and interpersonal skills. In contrast, perceived popularity is driven by how the group relates to the individual (factor 2) and is dependent on external perceptions of the student. Sociometric and perceived popularity are independent because the psychological process underlying each, liking and attraction respectively, are distinct. Nonetheless, the two concepts are correlated because of a temporal association whereby attraction catalyzes interactions and gives some students more opportunities to be well liked. In turn, liking facilitates the eventual goal of mutual attachment but is not a necessary prerequisite. Consequently, chance occurrences in the situation can lead to pair bonds and attachments independently of liking and attraction. Furthermore, attachment can maintain a pair bond after feelings of liking and attraction have faded such as in cases of spousal abuse (Fisher, 1993, p. 166).

The strength of proposed theory is that each of its component elements has been well researched and thoroughly described. The hierarchy of attraction, on final analysis, is a glorified

bell curve that depicts how attractive someone is in terms of a percentile. Its existence can be deduced from four facts of life. Although the various forms that input of energy takes have only been fully uncovered in the last century, its existence has been implicitly acknowledged at least since the evolution of the English language. It is so obvious that certain people have a magnetic draw that the adjective itself, “attractive”, implies attempts at proximity. Getting close to those people who are attractive, after all, is inherently necessary if a relationship is going to be catalyzed. With respect to the importance of prosocial behaviour, in his seminal book, *How to Win Friends and Influence People*, Dale Carnegie (1937) outlines in great detail the fundamentals. Particularly relevant here are his six prescriptions for getting people to like you:

1. Be genuinely interested in other people.
2. Smile.
3. Remember that a person's name is to them the sweetest and most important sound in any language.
4. Be a good listener and encourage others to talk about them self.
5. Talk in terms of the other person's interests.
6. Make the other person feel important and do so sincerely.

The only element of the current theory that has been only recently described is the distinction between attraction, liking and attachment. Although this distinction has been most thoroughly studied in the context of drug addiction (Berridge & Robinson, 1998) it is equally applicable to interpersonal relations (Fisher, 2000; Fisher et al., 2002). Thus, the proposed theory is unique only in that it represents an original combination of ideas. No further research is needed to demonstrate or describe its basic elements.

There are two important limitations to the current theory and the three factor model. First, it is more postdictive than it is predictive. In other words, once the social context of a classroom has been established, the model can easily explain why certain students assume a particular social role. Prior to the establishment of a social context, however, the model cannot perfectly predict future social outcomes. So many aspects of social interaction are idiosyncratic that current methods cannot assess, for example, which students share the most number of significant similarities with the rest of their class. The second important limitation is that the model does little to clarify the extent to which judgements of attraction, liking and attachment bias each other under different circumstances. Future studies should address this limitation.

For students seeking popularity, the current paper can be distilled into two pieces of advice:

1. In all aspects of life, make every effort to be an engaged, competent and well-regarded participant. In general those qualities that make people attractive are often synonymous with those that require time and effort to obtain. Talent, physical prowess, socioeconomic status and so on.
2. Foster a kindly and radiant personality towards everyone. Being sociometrically popular is not the cause of perceived popularity and is not a detriment to it either.

Without doubt, sustained effort can move a student up the hierarchy of attraction. Perceived popularity is not, however, a guarantee because the two most important factors, physical attractiveness and athletic ability, are not always attainable by everyone. In contrast, treating others with respect is rarely as difficult as changing your physique. Because of the hierarchy, perceived popularity will always be an exclusive club but sociometric popularity will never. Mutual and meaningful relationships are available to all students and not just the popular clique. This is the most important conclusion of the current paper.

Appendix 1: The original essay

The current paper was inspired by an essay I wrote in grade twelve shortly after I graduated. Like most grade school students, I was concerned with popularity and how it was achieved. For four years, grades 9 through 12, I secretly studied my friends and peers intent on uncovering the secret. Of all my peers, the most influential was a girl who had simultaneously attained both sociometric and perceived popularity. The following essay is based on her example and other anecdotal evidence I collected over the years.

The Hierarchy of Attraction, Input of energy, Respect, and Friendship

What makes someone popular? What is it about some people that consistently draws us to them, makes us confide in them, and serve them? What makes these rare, but amazing people? Imagine the possibilities if you had this information and could consciously apply it to your life. In any social situation you would have the ability to attract others, and to keep them attracted. You could become a central, important, well informed, sought after figure—but how?

Defined simply, what is popularity other than having a large percentage of people attracted to you? Attraction is something we all feel, contribute to, and participate in. Some people are more attractive than others, and this is where popularity begins: being attractive.

The Hierarchy of Attraction

Commonly used, the word attraction connotes sex appeal. However attraction, by definition, is any desire to be around someone for any reason including, but not limited to, physical appearance. Attraction can be the result of personality, sexuality, spirituality, wealth, intelligence, appearance, humor, talent, etc. Anything that makes us want to be near someone constitutes attraction.

All people can be placed in a "hierarchy of attraction". Those who are at the top are the most attractive, and those towards the bottom, least attractive. Hierarchies will always exist because true equality is a utopian fantasy. Relativity proves this. If you have ever liked someone, that action proves that there is someone you dislike. Likewise if there were no ugly people there would be no beautiful people, if there were no talented people there could be no untalented

people and so on. Hence, the fact that we are attracted to some and un-attracted to others proves that a hierarchy exists.

Because attraction is natural, everyone has their own personal hierarchies in which they classify those they meet and because all hierarchies are the product of opinion, no two people will share the exact same hierarchy. Still, popularity is dependant on being attractive to a large percentage of persons; and thus, to be popular you must occupy a high rung in the “general hierarchy”. The general hierarchy works like such: there are infinite degrees of attractiveness and in reality no set levels or rungs. A small percentage of people are near the top, the average is near the middle, and a small percentage is near the bottom. People are attracted to those above them, and therefore attraction flows up. Those at the top are attractive to a high percentage of people and those at the bottom are attractive to a low percentage. Here is an example: a supermodel would not marry a fat slob, whereas fat slob, white collared workers, athletes, and millionaire reality television personalities, would all love to marry a supermodel.

It should be noted that a person’s position in the general hierarchy, or any individual hierarchies, isn’t stagnant because attraction is not based on something unchangeable like body type. Through effort or lethargy you can either ascend or descend any hierarchy. For example; if you learn to play guitar you could ascend someone's hierarchy where as if you possessed no musical talent you would descend.

However, learning to play guitar is by no means the only way to climb a hierarchy. There are numerous ways in which you can ascend. For example; being the quarter back of the football team, the lead in a play, dressing nicely, walking confidently, driving a nice car, learning to sing or act, being wealthy, kind, strong, funny... these are a few examples of what makes us more attractive—and only a few.

Unfortunately, trying to climb people’s hierarchies, for the most part, isn't easy and takes consistent effort; however, it is a natural conscious and subconscious occurrence. Why else would you do your hair, or put on cologne before a date? This brings the discussion to:

Input of energy

The concept of input of energy is very simple and can be summed up in a single rule; if you are attracted to someone, you input energy into that relationship. Input of energy is a conscious and subconscious occurrence. It is anything from thinking to fantasizing about

someone, making an effort to be near them to laughing at unfunny jokes they tell. The concept of input of energy isn't a metaphor or a symbol. It only has one meaning: whatever you do in a relationship that takes energy is 'input of energy'.

Input of energy is a linear concept. The amount of energy you input into a relationship is directly proportional to how attracted you are to someone. Consider Valentines Day, those who are unattractive receive nothing, whereas those who are very attractive have people actively searching them out at lunch, knowingly embarrassing themselves in front of friends; just to deliver that box of chocolates, that lame trinket, or perhaps a Teddy Bear...

Evidence of input of energy can be found everywhere because it is a natural occurrence. For example: Romeo climbs the balcony to be with Juliet. The man gives his jacket to his date so that she is not cold. Your girlfriend gives you a massage because you have had a bad day. In every case, one of the individuals is consciously inputting energy into the relationship to an attraction. However, compared to its conscious form, subconscious input of energy is subtler and therefore the best examples of it can be found in our own lives. When you have the choice of sitting alone or beside a friend who is across the room, what do you normally choose? Barring unusual circumstances, you choose your friend because you are attracted to them—you want to be near them.

It should be noted however, that attraction is not the only reason people input energy into a relationship. Individuals may input energy in anticipation of receiving something in return, due to various circumstances, are being forced to input energy, or are genuinely kind people. Because of this, 'input of energy' is not a definitive test, only a potential indicator, of attraction. However, understanding the concept of input of energy is fundamental to understanding popularity.

The crucial element: Respect

When people input energy into a relationship, the 'attractor' can respond to the 'attracted' in different ways. If there is mutual attraction the input of energy will be responded to with enthusiasm, happiness, excitement, and other favorable signs. However, if the attraction isn't mutual, then the outcome will be different and it is here that popular people differentiate themselves. Generic people tend to respond to 'unwanted' input of energy with disdain or callousness. If you have ever been rejected by someone you have approached then you will understand what this denial is like. Popular people don't do this; they respond to unwanted input

of energy with respect. This does not mean that they have an attraction to the attracted, or that they will be overly friendly, it simply means that they won't give clear and glaring signs that the input of energy is unwanted. This leaves the attracted with a positive feeling making the attractor even more alluring. Consider the next two scenarios:

Gordon is an average boy who, much to his dismay, is only 145 pounds and not especially good-looking. Although well motivated, Gordon enjoys studying and writing essays and thus, isn't very high in the hierarchy of attraction. In contrast, Daisy is a beautiful young brunette who is athletic, intelligent, and has leads in school plays—Daisy is high in the hierarchy of attraction. As we would expect, Gordon is attracted to Daisy but unfortunately for him, this attraction is not mutual. Still, due to his attraction, Gordon inputs energy into his relationship with Daisy by striking up a conversation with her in the next time they make eye contact. Unfortunately for Gordon though, Daisy is a bitch and his friendly “Hi!” is met with the cold shoulder. Consequently, Gordon will leave this encounter feeling insecure and disappointed due to Daisy's reaction. Gordon won't re-approach Daisy because he knows the outcome will be unpleasant. In fact, he will avoid Daisy knowing the misery of feeling unwanted. Unless Gordon's attraction to Daisy is extreme, he will not be able to work up the courage (large input of energy) to try again. Either way, Gordon's attraction to Daisy will have decreased.

Alternately, what if Daisy wasn't a bitch? What if Gordon's friendly “Hi!” is met with another friendly Hi! What if Daisy humored Gordon by kindly answering his questions and responding to his conversation until it naturally came to an end? Would Gordon not leave the encounter feeling good knowing that his feelings were respected? More importantly what if Daisy consistently respected Gordon, would he not begin to associate the feeling of security with being near Daisy? When you respect someone it makes them feel good because they feel secure: a feeling which comes with knowing that every aspect of you is being respected; your appearance, feelings, privacy, belief, etc. The result of this outcome will be that Gordon's self-esteem and sense of acceptance will increase, and he will naturally return to Daisy much in the same way that he would return to a gold mine were he to find one.

Now imagine if Daisy were to respond unconditionally and consistently to all people, including those she found unattractive, with unconditional respect. Eventually a high percentage of people would begin to associate the feeling of security with being near Daisy and would develop a prolonged attraction to her. Daisy could then be termed ‘popular’.

At this point it is necessary to broaden the definition of 'respect'. As used in this essay, respect is a title given to a union of several qualities such as kindness, consideration and empathy. I have chosen the word 'respect' simply because so many other attributes can be defined in terms of it. E.g., kindness is respect for someone's feelings; consideration is respect for someone's belongings; etc. And so, showing 'respect' covers more than a single attribute and can be very loosely defined as—in an un-patronizing way and without kissing ass—doing and saying what is necessary to increase a person's sense of well being.

Unfortunately there is no rule which can be used to define what would constitute showing 'respect' in every situation: the number of relationships, as well as the vast number of variables that define each individual relationship, is simply too large. A theory of popularity can now be formulated and stated as a rule: those who are high in the general hierarchy, and who respond to input of energy with varying degrees of respect become "popular".

It should be noted that nobody is either popular or unpopular. Popularity is not an absolute and is instead measured in degrees. The higher you are in the hierarchy and the more unconditional respect you show the more popular you will become. At a certain point however, some people transcend popularity and become something else. Those who consistently demonstrate a sincere respect for everyone are those who create an everlasting sovereignty. These are the people whose time we actively bid for because we know the wonderful feeling of being around them. Because they have the ability to make everyone feel good and accepted, these are truly amazing people.

Friendship

Unfortunately, amazing people are extremely rare. Learning to play guitar and doing copious amounts of sit-ups is easy. Showing unconditional respect is the difficulty. Because I am not one of these people I can only speculate on what enables amazing people to be who they are. Whether the "unconditional respect" character strength is due to nature or nurture I don't know. What I assume is that these people are so confident and secure with who they are, that they are not concerned about who they associate with. They do not require the ego trip that comes with putting others down, and they are kind for what seems to be no other reason than that. We are all attracted to these people because, although our attraction may not be mutual, they let us believe that it is. An amazing person might loath your personality, your appearance and demeanor, they may hate the sight of you, but they will never let you know this. Amazing people seem to be

friends with everyone, and to you they are your friend because to you they show respect.

This realization implies a very important conclusion. If we are all friends with amazing people due to a mutual, or a perceived mutual attraction, then what is friendship other than a mutual, or a perceived mutual attraction? If attraction is based on respect, isn't friendship? Consider, how many jerks do you actively seek out? How many assholes do you voluntarily return to be around? Not everyone has the capacity to be an 'amazing person' or even to be considered popular. However, everyone has the capacity to be mutually attracted and attractive to some—though be it a small number—and in other words: to make and keep friends. Hence, the secret of popularity is good, but the secret of friendship is better. So if there was one piece of advice I could give someone, one sentence that summed up the most important conclusion of this essay, or communicated the best theory that I have ever had, it would be that "friendship is based on respect." This is the best lesson I have ever learned.

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