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Measuring the existence of cool using an extended Social Relations Model

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ABSTRACT

This paper presents a simple method to measure people's perceptions of the coolness of other people in localized social networks. Folk concepts of cool suggest that cool is real and yet elusive. Approaches to measuring cool that are indebted to traditional personality theory are shown to be insufficient because cool is a constantly changing construct. Instead, the tension between the real and elusive sides of cool may be best characterized as a distributed property of a network. This is measured with an extension of the social relations model in order to give an estimate of the actual stability of cool, instead of just vague folk concepts. 47 undergraduates completed a round-robin rating of the personal and group level coolness of others. Preliminary results suggest that about a third of ratings in cool are due to the actual coolness of the targets, showing both the reality and elusiveness of cool itself.

Keywords: *cool, interpersonal perception, social relations model, distributed networks.*

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1. Introduction

Cool is hard to measure. In particular, although we all have notions of cool in our head, we know very little concrete about how these concepts match across people. Does a computer geek's version of cool match a jock's? Is there some higher-level consensus of cool that might exist across social groups? How can we talk about cool unless we know what everyone else is thinking? Even if we personally disagree with what is cool, can we walk into a room of strangers and know what they think is cool? The purpose of this paper is to explore the notion of cool as a distributed property of social networks and to describe a simple model for assessing consensus around cool.

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2. Folk concepts of cool

Popular culture suggests we know the following about cool.

1. The objects and people that are cool change across time (Pountain and Robins, 2000). This is why we spend time trying to work out what is cool. The Rolling Stones may be cool now but they weren't for much of the 1980s and 1990s (Whitelaw, 2005).

2. Cool is locally defined (Schiller, 2012). For example, we've all been at parties where someone from NYC says "Uniqlo is cool" only to hear someone else say "Not in Japan". This implies that if cool has a universal marker, even a latent one, it will be hard to find.

3. There are some traits that are thought to be more central for coolness. For some, aloof disdain and self-confidence mark out coolness (Pountain and Robins, 2000; Schiller, 2012). However, because definitions of cool are local, folk concepts of cool may not always require aloof disdain.

4. Cool exists despite the difficulty in measuring it. "What is cool changes; that there is such a thing as cool is immutable" (Shriver, 2003).

5. Cool matters. It is generally advantageous to be considered cool. Cool is associated with popularity and attractiveness, and these, in turn, are associated with a wide range of benefits, including better salaries, better-looking partners, and health benefits (Hamermesh, 2011; Zebrowitz and Rhodes, 2004).

6. We spend a lot of time talking about coolness. For example, university students spend significant time with new acquaintances talking about music, a classic marker of coolness (Rentfrow and Gosling, 2006).

7. Cool is, to a limited extent, an individual difference. Pop culture suggests that there are cool people, and there are un-cool people, with many shades in between. As such, coolness, in humans, might be considered a personality construct.

These folk concepts of cool must be taken into account in any model that attempts to measure cool. Unfortunately, these concepts also suggest that cool will be hard to measure because cool runs foul of some major requirements of psychological measurement. For example, if cool changes across time, measures of cool won't be consistent across time (i.e. test-retest reliability will be low). Again, if cool is locally defined, it will be hard to provide an operational definition.

A central difficulty that arises in folk concepts of cool is the tension between the desire for a fixed position on cool (as seen in the insistence of its existence, in the central aloof disdain, and in its status as an individual difference) and the changing nature of what signifies cool (as seen in changes across time and in local definitions). The

reason for this tension is that the question “What is cool?” can have many answers. First, this question might presume that some things are cool or not (i.e. Which objects or people are cool?). A second meaning is to ask the ontological status of cool (What is the nature of cool? Where does it exist?) These questions are hierarchical; to answer which objects are cool, we must first understand the nature of cool. Folk concepts of cool are ambivalent about the nature of cool; they are unclear about cool’s ontological status. There are four basic statuses that cool might have. First, coolness might be a physical trait (e.g. mass can be defined and measured). The folk concepts listed above suggest cool is not physically measurable because the markers of cool change. Second, coolness might be a personality trait just like extraversion is. Third, coolness might be a distributed property of a network, such that it can only be measured by knowing something about all the members of a network. Last, coolness may not actually exist at all, it may just be a word without a true correlate, a word that is idiosyncratically defined by each individual using it.

This essay will now put the features of cool in the context of personality research and suggest that coolness’ ontological status is not best conceptualized as a personal attribute. The status of cool as a distributed network property will then be explored, emphasizing the need to measure consensus amongst the people we are talking about cool with. Finally, Malloy and Kenny’s (1996) social relations model will be extended to show a better way to measure coolness, along with data from an initial study.

3. Coolness is not a personality trait

Positioning cool as a personality construct allows us to imagine how a psychometrician might measure cool. If psychometric methods are unable to capture cool then cool is not a personality trait.

The first method to measure psychological traits is via self-ratings, where the subject judges their own level of an attribute (e.g. How much self-esteem do I have?). Self-ratings are poor psychological measures when people are motivated and able to present themselves in an unrealistic light (Arendasy, Sommer, and Schutzhofer 2011). For example, self-ratings of honesty rarely work because most people exaggerate their honesty. Similarly, because coolness is valued, people will likely present inflated views of their own coolness. This, in turn, raises the broader issue of the potentially low correlation between self-ratings of cool and other measures of cool; others may have a different belief about your coolness than you do.

Observer ratings require that the subject be judged by someone else (e.g. How much self-esteem does Jason think Jenny has?). For example, a clinician might judge whether people are depressed or not, or parents might rate the behavior of their children. Often, as in clinical judgments, experts in the trait are more reliable judges. Experts have also been used in the case of cool. Observers, the merchants of cool, go out and observe what is cool (Gladwell, 1997). Observer ratings are indirect but this doesn't necessarily make them highly reliable (Hoyt and Kerns, 1999). Furthermore, observer ratings beg the measurement question by assuming there is an identifiable trait (coolness) out there to be measured without the merchant being required to give a definition. In the case of cool, the reliability of cool merchants is untested. Observer ratings may be the most sensible measure of cool if cool's signifiers change but observer ratings also provide a longed-for and perhaps illusory sense of security over cool's existence as a stable trait.

Behavioral ratings attempt to measure psychological traits by observing a clearly defined set of behavioral consequences. Behavioral ratings work if you can, firstly, define clear behaviors or features and, secondly, link them reliably to the psychological construct of interest. For aggression, it might mean measuring how many times someone swears and correlating this with aggression. Unfortunately, individual behaviors do not always correlate highly with the trait in question, particularly when you correlate the behavior with observer or self-report measures (Mischel, 1968). In the case of cool, the changing nature of what signifies cool makes us unable to establish the clear descriptions necessary for behavioral measurement.

The traditional approaches to psychological measurement do not work in the case of cool because people fake their coolness level, because it can be hard to verify the reports of cool merchants, and because coolness is always shifting, making behavioral measures impossible. The insufficiency of individual differences approaches to coolness can be seen in the following question: would we know cool existed using the traditional psychometric approaches? For example, if people rate their own coolness, would we know coolness exists? Probably not, because we have brushed the issue of consensus under the carpet. Would we know cool existed if observers rate it? No, because once again the issue of the nature of cool has been ignored. Would we know cool existed in a behavioral or predictive study? No, because cool changes too quickly.

Most approaches to measuring cool position it as a personality trait. Observer ratings of cool pre-suppose that objects or people are cooler than others and that this is some property of the object or individual. Individual ratings or ratings of objects similarly

configure coolness as an individual difference (Danesi, 1994), despite the problems with such conceptualizations.

If cool is not a personality trait, where does cool exist? It is not a fixed feature of the physical world, nor a judgment of individual experts, nor a self-rating. The next place to see if cool exists is as a distributed network property. Perhaps a network will provide a way of measuring something that changes across time and is shared across networks.

4. Cool is a distributed property of a network

Coolness does not exist in an object but coolness may be a characteristic of a network. We see this when we say "You may think they're cool, but if you put them in a big pond they wouldn't be". We see the distributed nature of cool in the way it changes across time, and in location, and that folk concepts suggest cool *can* be locally defined.

Characteristics that are distributed features of a network should show context-dependent behavioral and language adjustment. For example, we easily self-monitor our extraversion and language to match the situation we are in, talking politely to our grandparents and more expressively to our peers (Snyder, 1974).

Cool shares these properties of behavioral adjustment and language adjustment. We adjust our behavior to appear cooler in the situation we are in. Examples abound in pop culture, from the awkward teen becoming cool, to kids wetting their pants in Happy Gilmore after Adam Sandler says 'it's cool'. We also adjust our language to negotiate coolness. Not only so, but coolness is uniquely transmitted via language. We negotiate our social spaces to define cool. We talk about what is and isn't cool, what is becoming cool, and what is becoming less cool. But because we do this in different ways across different networks, despite the best attempts of some companies to dictate what is cool, there may or may not be agreement in our language about what is cool. Of the two types of adjustment, language is more important. Language is a means of negotiation (Varonis and Gass, 1985), and it appears that language defines the negotiation of cool.

The key measurement issue with distributed properties of networks is that of consensus. In what way is the feature distributed across a network? Do all nodes of the network have access to the feature in question? Is there consensus across the network? In the current context, this means assessing whether the network knows what it means by cool.

Consensus is very different to idiosyncratic notion of cool. Although individuals may hold unique views of what cool is, for coolness to exist across a network, people must

be aware of what those around them mean by cool. The extent to which people can understand what other people in the network find cool is the extent to which any talk about cool has meaning. If people do not share a common meaning for cool with someone else, they have to renegotiate or unpack the meaning of cool before it can be used validly. For example, a new hardcore fan might see someone drinking at a straightedge concert and think that's cool, but they need to have a conversation with those around them to understand that the word has been misapplied in this instance. An understanding of what constituted coolness for those around them is necessary in order to speak about cool in that situation. Cool has efficient, practical meaning only as a distributed property.

This view of coolness is consistent with some parts of the literature on coolness. O'Donnell and Wardlow (2000) classify coolness as a distributed semiotic problem. In the case of smoking, coolness is negotiated between teens and then spread across groups. However, a measurement model for these types of problems is conspicuously lacking. In the next section of this paper, a measurement model is specified, first at a general level, and then an extended version to cover coolness.

5. An overview of the social relations model

The Social Relations Model (Kenny, 1994) is a model of interpersonal perception stemming from the separate work of R. D. Laing (Laing, Phillipson, and Lee 1966) and Lee Cronbach (1955). This model has been used to examine many aspects of interpersonal perception, including whether lonely people perceive how others see them (Christensen and Kashy, 1998) and whether boys and girls differ in how perceptions of social status are affected by aggression (Card, Hodges, Little and Hawley, 2005).

Laing noted that interpersonal perception deals with a perceiver (A) judging a target (B). In his notation, we denote Addison's (perceiver) rating of Bill (the target) as A(B). Bill's rating of Addison is B(A). Cronbach noted that any rating involving a perceiver and target can be divided into three main parts (see Figure 1):

$$A(B) = A + B + A \times B$$

or

A(B) = A's perceiver effect + B's target effect + relationship effect of A & B

Figure 1. Standard Social Relations Model decomposition of individual ratings.

The perceiver effect is Addison's general feeling toward all people. Addison may be a true hipster; she may think that everyone is very un-cool. Or, Addison may judge people very leniently; she may in general rate most people as cool. The target effect is how others perceive Bill. Others may generally perceive Bill as cool or very un-cool. The relationship effect is that Addison and Bill may have a special rating that doesn't reflect how Addison generally perceives people or how Bill is generally perceived. For example, because Addison saw Bill picking his teeth, Addison may rate Bill as very un-cool even though Bill is usually rated as cool and Addison generally rates people as cool.

The data for a social relations analysis come from a group of perceivers rating a set of targets. These targets can be the current group, another group of people, or a set of objects (the latter neatly fulfilling any need to rate the coolness of objects). The only requirement is that each perceiver rates the same set of targets. The variance in these ratings is then partialled out in an ANOVA-like decomposition to provide estimates of the variance for each effect (see Kenny, 1994 for details).

The three effects (minus measurement error) sum to the total variability in the ratings, and hence the presence of one strong effect will necessarily make the others weaker. For example, if ratings of women are driven by misogynistic attitudes, there will be a large perceiver effect and no target or relationship effects.

Consensus, or the agreement raters have about targets, is seen in a relatively high proportion of variance being accounted for by target effects. If there is relatively little perceiver variance, but people are consistent judging the targets the same way, this shows as high target variance and consensus. However, conceiving of consensus in variance terms means there is no threshold at which we say consensus has been achieved. Instead, we look at the amount of variance that is related to consensus.

Consensus around target effects in the standard social relations model does not cover cool as a distributed process. Based on dyadic ratings, A(B) or C(B) or D(B), consensus asks whether each rater's idiosyncratic notion of cool matches the other raters' notions of cool. Folk concepts of cool suggest this type of consensus would be low. What is needed is a way to measure the perceptions actors have of the audience they are communicating with.

6. Extending the social relations model to cover coolness

The social relations model can be extended to cover distributed, communicative processes because of the flexibility of Laing notation. The simplest interpersonal

ratings are binary ratings, A(A) or A(B). However, Laing notation can be extended to higher levels. For example, A(B(A)) is Alan's view of how Bobby views Alan. For distributed networks, the foremost question is whether there is consensus in how we think others view the situation. This unexplored question could be put in Laing notation as A(G(B)), what Alan thinks the group (G) thinks about Bobby. This question is an interesting one, particularly if Bobby is a new girlfriend that Alan is introducing to an old group of friends.

The difference of the binary rating of A(B) from the group rating A(G(B)) is the difference between our idiosyncratic notions (in binary relationships) and our ability to read others. In terms of the concrete question asked in a study, it is the difference between "How sad do you find Derek?" (binary) and "How sad does the group find Derek?" (group).

Group ratings would be decomposed as seen in Figure 2:

A(G(B)) = A + G(B) + A x G(B), or

A(G(B)) = A's perceiver effect + Group's consensus on B + relationship effect of A and the group perception of B

Figure 2. Social Relations Model decomposition of group ratings.

In this case, the three effects still partition the variance. The perceiver effect is somewhat similar to the binary case; it represents Alan's general perception of how groups view people. The target effect changes vastly when we move to group ratings. In the binary case, the target effect (B) is the level at which Bobby is judged, is he cool or un-cool? At the group level, the target effect, G(B), is the extent to which there is consensus around Bobby (i.e. Can we accurately assess what the group thinks about people?). Averaged across individuals, as per the SRM, this target effect gives us a measure of the shared consensus in a group. This target effect, G(B), answers the question of whether we can know how other people in a situation are judging coolness. The relationship effect, A x G(B), reflects the special factors between Alan and Bobby that make Alan think the group judges Bobby uniquely.

As a distributed property of a network, cool, if it exists, is a target effect on A(G(B)) ratings.

The next section reports an initial study using the model outlined above. As cool is ever-shifting and its meaning distributed across different subcultures, we predict that consensus (i.e. target effects) on group ratings should not be high. There are likely to

be large relationship and perceiver effects. However, a significant target effect should still exist.

7. Method

Participants. 47 undergraduates participated in this study in return for course credit. These participants were split into four groups (n = 10, 12, 12 and 13). Participants came from the same residential undergraduate college but from a range of different classes and disciplines. As such, participants ranged from having minimal acquaintance to knowing each other reasonably well. Each group was run separately and consent was obtained as per APA standards.

Procedure. Participants were seated in a circle and a pseudonym was placed in front of them to preserve anonymity. Participants were first asked to categorize the other students on two different bases. First, participants rated how cool they personally felt each participant was (personal cool). Second, participants rated how cool the group found each participant (group cool). These two ratings reflect A(B), personal cool, and A(G(B)), group cool. Each rating was done on a single five-point scale, anchored from "Extremely uncool" to "Extremely cool". Each point had a box in which to place as many pseudonyms as the participant desired. These ratings were collected in order to calculate the perceiver, target and relationship effects for each group.

8. Results

Analyses were conducted using SOREMO, a computer program (Kenny, 1998). This program decomposed the personal cool and group cool ratings into perceiver, target and relationship effects. The perceiver, target and relationship effects are presented in Table 1. The first row represents the normal social relations model decomposition of interpersonal ratings (as per Figure 1), while the second row gives the decomposition of ratings of what the group might think is cool (as per Figure 2). These numbers are proportions of variance and each row sums to 100%. The second column, the target effect, gives the level of consensus surrounding personal cool and group cool.

Type of rating	**Perceiver effect**	**Target effect**	**Relationship effect**
Personal cool	**.20**	**.13**	**.69**
Group cool	**.22**	**.31**	**.47**

Table 1. Variance effects for personal and group-level cool.
Note: The relationship effect also includes all the measurement error.

9. Discussion

The ratings show all the characteristics expected if cool is a distributed construct. First of all, the target effect is stronger for group ratings (31%) than for personal ratings (13%). There is more stability for consensus surrounding cool by looking at group ratings than personal ratings. In other words, we are more likely to agree about what we think the group thinks than about what we each individually think. Second, when considering personal assessments of cool, the perceiver effect accounts for a larger proportion of the variance (20%) than the target effect (13%); idiosyncratic notions of cool are associated with the perceiver, not the object of interest. These results are consistent with the view that cool does have unique personal meanings. Third, when considering assessments of how cool the group would consider each member, target effects are larger (31% of the variance) than perceiver effects (22%). In other words, ratings of what the group might think is cool are driven more by shared perceptions of the targets than by an individual's own rating style. Lastly, the relationship (and error) variance decreases on group ratings (47%) compared with personal ratings of cool (69%). In summary, individual ratings largely reflect ourselves, group ratings reflect the targets, and error decreases when we move to group estimates.

Beyond this, we have an initial estimate of how much consensus there is surrounding cool. The actual targets determine about a third (31%) of ratings of what the group thinks. How real is cool when we talk about it? If we consider this from the perspective of speaking to an audience, the answer is approximately one third.

The major limitation of this study is that the relationship effect contains the measurement error. To remove the error variance it is necessary to use a repeated measures design. This would necessarily decrease the relationship variance and increase the relative proportion of variance due to target effects. The extent of this correction is not known.

Overall, results from this preliminary study suggest that cool shares the properties of a distributed network construct, and also a way to measure the stability (or consensus) around using the word cool.

10. Conclusions

The use of group ratings, A(G(B)), instead of the traditional binary ratings, A(B), is unique to this study and revealed a pattern of results consistent with a distributed property. Target consensus is higher for group ratings than for personal ratings. Target effects account for more of the variance in group ratings than perceiver effects do.

The switch from a categorical approach to a variance approach opened up the question of just how stable cool is as a piece of language. Consensus in group ratings of cool accounts for about a third of the variance in the ratings. That is, about a third of the explanation for variation in rating how cool a group of people find each other is due to a shared consensus about how cool these people actually are. Language surrounding cool is about a third stable. A switch to a variance view allows us to avoid categorical statements (e.g. Cool is stable, cool is unstable) and instead assess the extent to which cool is stable.

Still, there is a large amount of slipperiness in cool. Folk concepts suggest that cool is an elusive construct. Perhaps the reason cool appears to crumble when we try to examine it closely is because it is a distributed network property with only moderate shared consensus, a view supported by the current results. Thus, trying to define coolness tightly may only make it disappear, like water through a clenched fist. Instead, applying group ratings to the social relations model allows an assessment of the extent to which cool is distributed across networks in ways that prevent an easily accessible definition but still allows for real communication.

If we want to find coolness, it may be necessary to search for it not in objects but in the perceptions of others. Not in the speaker, but in our view of the receivers of the message. This is where cool has most stability, and it is where language might ordinarily be said to exist. We speak, knowing that we have our own personal views of cool, and that we know our audience imperfectly, but also knowing the audience well enough to talk about cool and it mean something real.

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