The Justin Timberlake Effect

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Abstract

We have spotted a big, fat gap in the literature: Nobody knows about the relationship between hotness and popularity in post-00s boy bands. To contribute to the progress of humanity, we decided that it was our responsibility to fill this gap. We rolled up our sleeves and gathered data on $N = 175$ boy band members nested in $K = 50$ boy bands that were active between 1990 and 2018. Using multilevel modeling, we found that the link between hotness and popularity was positive among members of 90s boy bands (e.g., *NSYNC, the Backstreet Boys), whereas this link was null among members of post-00s boy bands (e.g., BTS, The Jonas Brothers). We labeled this phenomenon "The Justin Timberlake Effect." Obviously, this stuff has far-reaching practical and unpractical implications. The fact that HARKing and p-hacking were used is discussed as a very anecdotal and inconsequential limitation.

Key words: Every; little; thing; I; do; Never; seems; enough; for; you.

The Justin Timberlake Effect

"The more you throw tomatoes on Sopranoes, the more they yell"

George Perec, 1980, p. 38

Although the earliest traces of boy bands date back to the mid-1950s, the golden age of boy bands was the 1990s (Underst & Able, 1930). Existing and non-existing studies show that hotness is the most vigorous and robust predictor of the popularity of 90s boy band members (e.g., Tempo, Ropari et al., 2003; Heavym et al., 3054). For instance, Justin Timberlake from *NSYNC, Nick Carter from the Backstreet Boys, and Wanya Morris from Boyz II Men are not only the hottest members of their bands, but also among the most popular existing people on the planet (Timberlake, Carter, & Morris, 2015; but see Bass, Littrell, and Stockman, 2015). However, little is known about the relationship between hotness and popularity in post-00s boy bands (van Dalization, 1999). For instance, Harry Styles from One Direction, Nick Jonas from the Jonas Brothers, and Jungkook from BTS are definitely known to be the hottest members of their bands (Styles, Jonas, & Jungkook, 2015). But are they the most popular? Well, the question is on everyone's lips (Brown, Kashuk, & Lauder, 2020).

In the present research, we formulated three more-or-less justified hypotheses.

The level-1 main effect hypothesis. The higher the hotness, the higher the popularity.

The level-2 main effect hypothesis. Compared to 90s boy bands, members from post-00s boy bands are more popular.

The cross-level interaction hypothesis. For 90s boy bands, the higher the hotness, the

higher the popularity; for post-00s boy bands, this link is attenuated.

Method

Participants. We used Goldenberg et al.'s (2018) Internet Boy Band Database. We used two inclusion criteria. First, we focused on boybands that had at least one song chart on the US version of the Billboard Hot 100 between 1990 and 2018. Second, we retained members with non-missing values on the focal variables. The final sample size was rather fine-tuned, with $N = 175$ boy band members from $K = 50$ boy bands.

Variables.

Popularity score (outcome). We gathered the number of Instagram followers of each of the boy band members of our dataset and developed a popularity score scale ranging from 1 = *not popular* (≤ 100 followers) to 7 = *Beyoncé popular* (≥ 100,000,000 followers).

Hotness (level-1 continuous variable). We operationalized this variable by counting the number of time(s) a given boy band member appeared in ten Internet hotness rankings from such prestigious and well-respected outlets as The Hollywood Gossip or Buzzfeed.

Period of success (level-2 dichotomous variable). We distinguished 90s boy bands (whose greatest year of success fell between 1990 and 2000) from post-00s boy bands (whose greatest year of success came after 2000).

Results

Given the hierarchical structure of the data, we treated boy band members (level-1 units) as nested in boy bands (level-2 units). We used Sommet and Morselli's (2020) three-step procedure.

Step #0. Centering Variables. All of the variables were centered. We cluster-mean

centered our level-1 variable, namely, hotness (subtracting the boy band-specific hotness mean from each observation), to obtain the estimation of the pooled within-boy band effect.

Step #1. Building an Empty Model. As a first step, we built an empty model and calculated the ICC and the DEFF. The ICC was .82, meaning that 82% of the variance in the popularity score was explained by between boy band differences (a large within-cluster homogeneity). The DEFF was above 1.5, meaning that multilevel modeling was warranted.

Step #2. Building Intermediate Models. As a second step, we built an intermediate model using hotness and period of success as predictors, and we performed a likelihood-ratio test to see whether estimating the slope residuals improved the fit. The *p*-value of the LR χ^2 (2) was below .20, meaning that estimating the slope residual variance and the covariance terms was warranted.

Step #3. Building the Final Model. As a third step, we built the final model using hotness (cluster-mean centered), period of success (-0.5 = "90s boy bands" vs. 0.5 = "post-00s boy bands"), and the cross-level interaction as predictors.

Inconsistent with our first hypothesis, we did not observe a significant effect of hotness on popularity score, $B = 0.03$, 95% CI [-0.14, 0.21] (i.e., the 95% confidence interval included zero, meaning that we failed to reject the null hypothesis).

Consistent with our second hypothesis, we observed that the popularity score of members from post-00s boy bands was $B = 1.59$, 95% CI [0.94, 2.24] higher than the popularity score of members from 90s boy bands.

Consistent with our third hypothesis, we observed a significant cross-level interaction between hotness and period of success, $B = -0.39$, 95% CI [-0.73, -0.04]. A simple slope analysis

revealed that the pooled within-boy band effect of hotness was positive for 90s boy bands, $B = 0.23$, 95% CI [0.05, 0.41], whereas the effect was null for post-00s boy bands, $B = -0.16$, 95% [-0.45, 0.14]. We called this phenomenon "The Justin Timberlake Effect". Figure 1 presents a graphical representation of the phenomenon.

General Discussion

Two out the three hypotheses were confirmed, which, quite frankly, is not that bad. The coolest effect we found is the "Justin Timberlake Effect": Only the hottest members from the 90s boy bands are still popular today; the less sexy members have somehow been forgotten. This has important social, societal, cultural, ethical, political, emotional, developmental, environmental, psychological, and epistemological implications for a lot of people (Shoulder, Arm, & Toes, 2005). As such, this work opens vast and great avenues for future research or—at the very least—one teeny tiny little dark alley for a follow-up study (Poly & Rous, 2040).

Two limitations should be acknowledged. First, our sample was composed of men only. Hence, the findings need to be replicated using girl bands (see Lochhims, Bunton, Bworn, Lawelhill, & Hambeck, 1994) Second, to produce the right estimates for the tutorial that go along with the present paper, the authors somewhat used HARKing and p-hacking (Stapel, Wansink LaCour, & Ruggiero, 2015). Hence, if I were you, I wouldn't trust the findings too much.

Despite these insignificant limitations, we think that this work is really, really nice; actually, it's so nice that we plan to self-cite this paper in the near future.
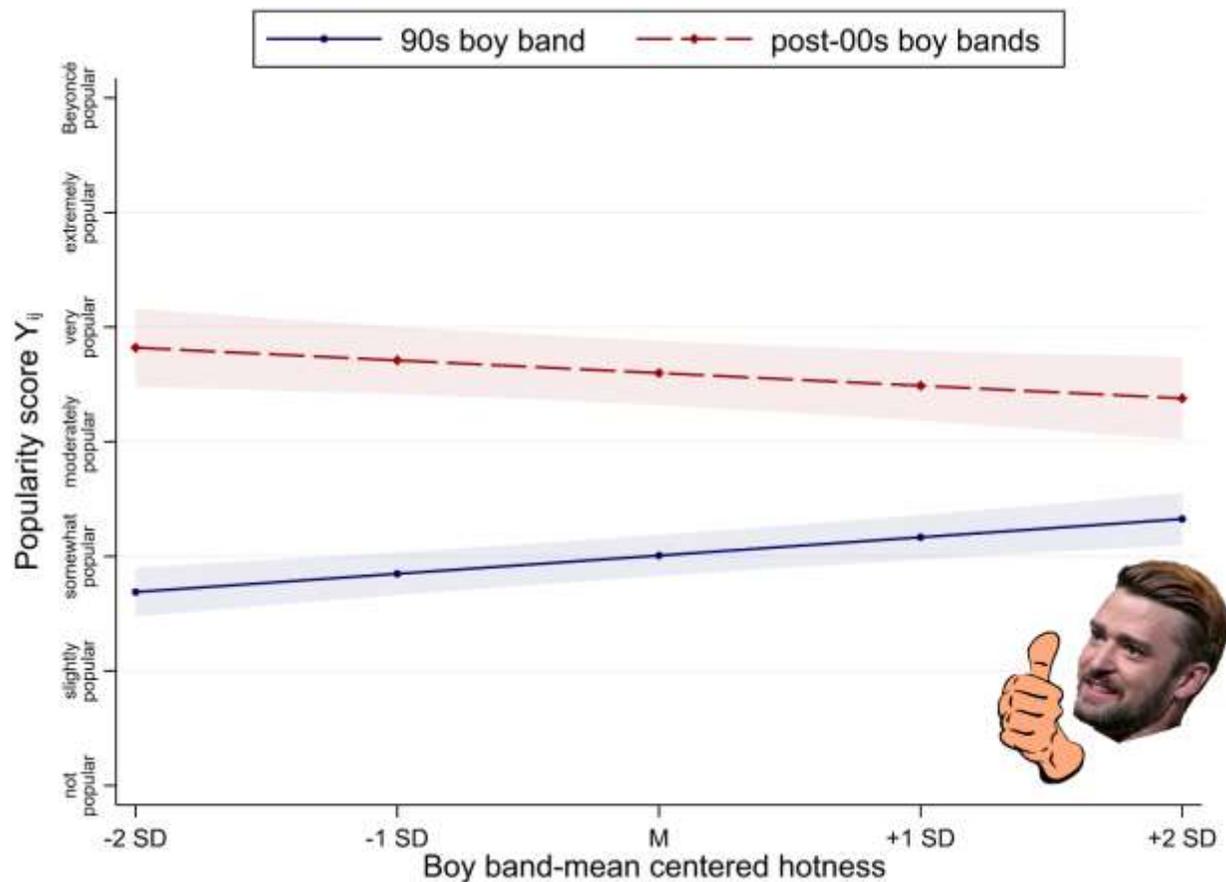
Figure 1 – The Justin Timberlake Effect. All members of post-00s boy bands are popular, whereas only the hottest members of 90s boy bands are popular. *Note*: Error bar are 95% CIs.

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