

Tit-for-Tat voting by contestants in the TV quiz-show ‘The Weakest Link’

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Abstract

Background It has not escaped the notice of researchers that TV quiz-shows like ‘The Weakest Link’ (WL) make ideal observational field experiments because they comprise the key ingredients of game theory: a finite group of players must select from a fixed set of actions to play for well defined payoffs. For example, WL has been used to assess the optimal banking strategy in economic decision making (Haan, Los & Riyanto, 2011), the trade-off between risk and return strategies in game playing (Février & Linnemer, 2006; Barmish & Boston, 2009), as a test of gender and race discrimination in voting (Levitt, 2004; Antonovics, Arcidiacono & Walsh, 2005; Goddard, 2012) and to demonstrate ‘neighbour’ effects in voting practice (Goddard, Ashley & Hunter, 2011). **Research Questions**:- We tested for three kinds of voting bias by players of WL. i.) *spatial*, ii.) *gender* and iii.) ‘Tit-for-Tat’ (TFT).

Methodology-i.) Rules of WL:- A group of players (n=9) accumulated a pot of money by fielding a first round of questions. Next, each player identified one of their fellows as the ‘weakest’ in that round. The player accruing the majority of votes was summarily eliminated from the show. A second accumulation round of questions preceded another elimination vote, and so on, until the group was whittled down to the final pair, who then played out a tie-breaker to determine an outright winner. **Methodology- ii.) Analysis**:- The *observed frequencies* of votes cast in the first and second rounds of 72 episodes of WL were recorded. Simple probability theory was then used to calculate the corresponding *expected frequencies* due to chance. Significant departures from these *expected* patterns, identified by χ^2 tests, indicated voting bias.

Findings:- TFT voting occurred when recipients of round 1 votes responded in kind by voting for the perpetrator in round 2. TFT votes occurred significantly more often than expected, and, significantly more often than those made by the equivalent controls who had not received a vote in round 1. *Spatial* and *gender* biases were found: players avoided voting for direct neighbours and females received significantly more votes than males.

Interpretation:-We suggest that TFT was played as a deliberate, explicit strategy, but, *spatial/gender* voting anomalies emerged implicitly. To elaborate, we suggest that a player’s voting decision was informed by two sources of information: *situational*, the game-specific, public performance of the other players, and, *dispositional*, their individual, internal, subjective-dependent attributions. In rounds where *situational* information was unequivocal, so the weakest player was easily identified by the other players (hi-consensus), there was no voting bias. However, significant biases emerged as uncertainty increased (consensus decreased) about the identity of the weakest player. In the absence of clear-cut *situational* information, because all players performed equally well (or badly!), players resorted to their private, bias-prone *dispositional* information source.

Conclusion:- The format of WL quiz-shows provided an ideal context to analyse forced-choice decision making and the implicit biases and explicit strategies therein.

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