

## Reply to Weinshall-Margel and Shapard: Extraneous factors in judicial decisions persist

Shapard and Weinshall-Margel (1) elucidate several critiques of our article, “Extraneous factors in judicial decisions” (2), in which we report a greater likelihood of judicial ruling in favor of a prisoner at the beginning of the work day or after a food break than later in a sequence of cases. They argue that two interlinked factors jointly produce our results: (i) all prisoners from one prison are seen before a break is taken, and (ii) all prisoners without representation are seen at the end of each decision session, prior to the breaks.

The data fail to support their assertions. We recoded our data—including representation as an explanatory variable—and reran all of the regression models presented in our original manuscript, but this time also included representation as one of the predictors. The original results replicate in every analysis; case order and the meal break remain robust predictors of the parole decision. The presence of legal counsel was always positively correlated with release likelihood but was not a significant predictor in every single model that we ran. For instance, in the four regression models of table 1 in our original article (2), the number and identity of significant parameters was unaffected, save for months served, which approached significance for models 1–3. Predictably, the addition of representation significantly improved model fit. Because Shapard and Weinshall-Margel’s dataset did not contain case order, they were unable to run this test.

Regarding prison of origin, we have data for 5 d. In all instances prisoners from the same prison appear before and after a break. Note that prison of origin alone cannot explain our effect, because there is nothing about it that predicts a decrease in likelihood of favorable rulings. Additionally, we reinterviewed prison personnel; they validated our original report that attorneys represent clients on a first come, first served basis. This precludes an ordering by prison.

Shapard and Weinshall-Margel also express concern that we lumped rejections and deferrals of parole requests into one category. Although legally these are not the same category, psychologically both outcomes constitute a preference for the status quo, our dependent variable of interest. We reanalyzed our data without deferrals, but with representation. Again, case order and meal break were robust predictors of the parole decision.

Finally, the letter notes in-prison behavior as an important factor in the parole decision. Although this is unquestionably true, because prisoner behavior does not determine case order, it cannot explain our results. Similarly, the fact that a single attorney occasionally represents multiple cases cannot explain our data. We found 39 cases in which an attorney represented two prisoners on the same day (26 in immediate succession) and 4 in which an attorney represented three prisoners on the same day (twice in immediate succession), representing an average of less than one case of shared counsel per day. It is mathematically impossible to observe the spikes in favorable decisions after meal times in a sequence that averages  $\approx 22$  cases. Our value for shared counsel is lower than that reported by Shapard and Weinshall-Margel because we did not include cases settled by previous agreement between the defense and the prosecutor.

In summary, our new analyses continue to indicate that, in addition to legally relevant variables, parole decisions are influenced by legally irrelevant factors. We are grateful for Shapard and Weinshall-Margel’s letter because it prompted us to enrich our analysis and subject our interpretation of its results to an even more stringent empirical test.

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1. Weinshall-Margel K, Shapard J (2011) Overlooked factors in the analysis of parole decisions. *Proc Natl Acad Sci USA* 108:E833.
2. Danziger S, Levav J, Avnaim-Pesso L (2011) Extraneous factors in judicial decisions. *Proc Natl Acad Sci USA* 108:6889–6892.

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The authors declare no conflict of interest.

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