

# Does littering beget more littering?

*Analysis from field experiments from a household garbage disposal study*

Since time immemorial it has been debated and discussed how lack of enforcement on littering rules in public spaces affect peoples' psyche and creates indiscipline, leading to further erosion of cleanliness in our societies. Many cities therefore adopt aggressive cleanliness measures for minimizing litter thus inherently discouraging people to litter less. Inspired by this, Robert Dur and Ben Vollaard conducted [a field experiment study](#) in Rotterdam, the second largest city of The Netherlands, from December 2010 to February 2011 to answer this age-old question of whether littering begets more littering; and to study continuation of treatment effects long after the experiment ended.

A field experiment to test residents' littering response to publicly provided cleaning services was run in Rotterdam - whereby in a randomly assigned part of a residential area of the city, public cleaning services were drastically reduced during a period of three months. Using high-frequency data on litter at treated and control locations before, during, and after the experiment, the study aimed to examine whether residents littered more when the environment was less often cleaned, how the behavior developed over time, and whether it continued to exist after the treatment was over.

This study found evidence that some residents started to clean up after themselves when public cleaning services were diminished. However the tendency to litter also went up by some 75 percent - thereby showing that both forces were at play. The study also concluded that there were reasons to believe in evidence for continuation of the treatment effects. Apparently, people

littered more (even with cleaning services having returned to normal); as well as continued to find avenues (and appointments) with local authorities to discard household items that would have otherwise been taken care of by the municipal clearing services. In other words, people did not immediately litter less if the environment was cleaner.

The study generalized and assumed some patterns, mostly focused around human behavior, for conclusions. The authors believed that the continuation effects could be because of the length of the study (perhaps exposing people for a period of three months to a more littered environment altered their habits). Additionally, the study being conducted in residential areas, it was assumed that learning effects might be stronger in residential areas than in non-residential areas. There were some other hidden assumptions as well - such as behaviour of residents from smaller neighborhoods acting as proxies for human tendencies. Finally the study assumed “behavioral spillover effects” giving rise to purported negative feedback loops, thereby, transforming clean and orderly neighborhoods into dirty and messy places.

The authors could implement controls to make the study more robust. For example, the study lacked data spanning multiple cities or regions. Banerjee and Duflo discuss precisely this in [Poor Economics](#), to highlight how most researchers in order to answer big philosophical questions prefer multi-country comparisons to enforce non-interference, thus ensuring internal validity in field experiments. Additionally, the study could benefit from a double-blinded experiment - by ensuring that none of the residents as well as the cleaning staff knew they were subjects of a field experiment. For all intent and purpose, while the study blinded the residents, it doesn't mention if the municipal cleaning staff was also blinded to avoid any bias and breakdown in internal consistencies.