

# Social trap

In psychology, a **social trap** is a situation in which a group of people act to obtain short-term individual gains, which in the long run leads to a loss for the group as a whole. Examples of social traps include overfishing, energy "brownout" and "blackout" power outages during periods of extreme temperatures, the overgrazing of cattle on the Sahelian Desert, and the destruction of the rainforest by logging interests and agriculture.

## Contents

---

### Origin of the concept

### First empirical test and the use of superimposed schedules of reinforcement

### Subsequent experimentation

### See also

### Notes

### References

### External links

## Origin of the concept

The term *social trap* was first introduced to the scientific community by John Platt's 1973 paper in *American Psychologist*,<sup>[1]</sup> and in a book developed in an interdisciplinary symposium held at the University of Michigan.<sup>[2]</sup> Building upon the concept of the "tragedy of the commons" in Garrett Hardin's pivotal article in *Science* (1968),<sup>[3]</sup> Platt and others in the seminar applied behavioral psychology concepts to actions of people operating in social traps. By applying the findings of basic research on "schedules of operant reinforcement" (B.F. Skinner 1938, 1948, 1953, 1957; Keller and Schoenfeld, 1950), Platt recognized that individuals operating for short-term positive gain ("reinforcement") had a tendency to over-exploit a resource, which led to a long-term overall loss to society.

The application of behavioral psychology terms to behaviors in the tragedy of the commons led to the realization that the same short-term/long-term cause-effect relationship also applied to other human traps, in addition to the exploitation of commonly held resources. Platt et al. also introduced the terms *social fence* and *individual trap*. *Social fence* refers to a short-term avoidance behavior by individuals that leads to a long-term loss to the entire group.<sup>[1]</sup> An example is the anecdote of a mattress that falls from a vehicle on a two lane highway. Motorists tend to back up in a traffic jam behind the mattress, waiting for a break in the oncoming traffic to pass around the mattress. Each individual motorist avoids the opportunity to exit their stopped car and pull the mattress to the side of the road. The long-term consequence of this avoidance behavior is that all of the motorists (except for perhaps one) arrived at their destinations later than they would have if an individual had removed the mattress barrier.

An individual trap is similar to a social trap except that it involves the behavior of only a single person rather than a group of people. The basic concept is that an individual's behavior for short-term reinforcers leads to a long-term loss for the individual. Examples of individual traps are tobacco smoking leading to lung cancer or alcohol ingestion leading to cirrhosis of the liver.

# **First empirical test and the use of superimposed schedules of reinforcement**

---

The first empirical test of the concept of social traps was by Brechner at Arizona State University,<sup>[4][5]</sup> who operationalized the concepts underlying Platt et al.'s theoretical analysis. By creating a laboratory game, Brechner had groups of college students playing a game where they could accumulate points by pressing buttons for the individual short-term positive rewards of experimental credit in their introductory psychology classes. Players could see a lighted display that indicated the total quantity of points available at any given time in the experiment. Players were told that if they completely drained the pool of points, the game was over and they could not accumulate more points. By responding for points at a moderate rate all the players in the group could accumulate enough points to fulfill their entire semester's experimental requirements. But if one or more players took points for themselves at too fast a rate, the pool would be drained of points and none of the players would achieve the maximum potential experimental credit.

In building the laboratory analogy of social traps, Brechner introduced the concept of "superimposed schedules of reinforcement". Skinner and Ferster (1957)<sup>[6]</sup> had demonstrated that reinforcers could be delivered on schedules (schedule of reinforcement), and further that organisms behaved differently under different schedules. Rather than a reinforcer, such as food or water, being delivered every time as a consequence of some behavior, a reinforcer could be delivered after more than one instance of the behavior. For example, a pigeon may be required to peck a button switch five times before food is made available to the pigeon. This is called a "ratio schedule". Also, a reinforcer could be delivered after an interval of time passed following a target behavior. An example is a rat that is given a food pellet one minute after the rat pressed a lever. This is called an "interval schedule". In addition, ratio schedules can deliver reinforcement following fixed or variable number of behaviors by the individual organism. Likewise, interval schedules can deliver reinforcement following fixed or variable intervals of time following a single response by the organism. Individual behaviors tend to generate response rates that differ based upon how the reinforcement schedule is created. Much subsequent research in many labs examined the effects on behaviors of scheduling reinforcers.

When an organism is offered the opportunity to choose between or among two or more simple schedules of reinforcement at the same time, the reinforcement structures are called "concurrent schedules of reinforcement". In creating the laboratory analogy of social traps, Brechner created a situation where simple reinforcement schedules were superimposed upon each other. In other words, a single response or group of responses by an organism led to multiple consequences. Concurrent schedules of reinforcement can be thought of as "or" schedules, and superimposed schedules of reinforcement can be thought of as "and" schedules.

To simulate social traps a short-term positive reward is superimposed upon a long-term negative consequence. In the specific experiment, the short-term positive reinforcer was earning points that applied to class credits. The long-term negative consequence was that each point earned by a player also drained the pool of available points. Responding too rapidly for short-term gains led to the long-term loss of draining the resource pool. What makes the traps social is that any individual can respond in a way that the long-term consequence also comes to bear on the other individuals in the environment.

Superimposed schedules of reinforcement have many real-world applications in addition to generating social traps (Brechner and Linder, 1981; Brechner, 1987; Brechner, 2010). Many different human individual and social situations can be created by superimposing simple reinforcement schedules. For example, a human being could have simultaneous tobacco and alcohol addictions. Even more complex situations can be created or simulated by superimposing two or more concurrent schedules. For example, a high school senior could have a choice between going to Stanford University or UCLA, and at the same time have the choice of going into the Army or the Air Force, and simultaneously the choice of taking a job with an internet company or a job with a software company. That would be a reinforcement structure of three superimposed concurrent schedules of reinforcement. An example of the use of superimposed schedules as a tool in the analysis of the contingencies of rent control can be found online in the website "Economic and Game Theory Forum", (Brechner, 2003).

## **Subsequent experimentation**

---

Subsequent empirical studies by other researchers explored aspects of social traps other than the underlying reinforcement structure. Studies tended to concentrate on manipulating social and cognitive variables. Cass and Edney (1978) created a simpler game using a bowl of nuts to simulate a commonly held resource. The Nuts Game as they called it had some distinct advantages over Brechner's electronically wired laboratory simulation. The Nuts Game could be transported easily to any environment in or out of the laboratory. It was simple and required no electronics. The reinforcers used were primary food rewards rather than the secondary conditioned reinforcers of class credit used in the earlier study.

From Platt's and others' initial concept, social trap research has spread to laboratories all over the world and has expanded into the fields of sociology, economics, institutional design, and the nuclear arms race.<sup>[7]</sup> Summaries of the many other diverse studies of social traps can be found in Messick and McClelland (1983), Costanza (1984), Komorita and Parks (1996), and Rothstein (2005).

Social trap research continues to be an active area. Urlacher (2008) devised an iterated version of the prisoner's dilemma game using groups of people, or "agents", pitted against other groups of agents, in a variation he termed a "two-level social trap".<sup>[8]</sup> He reported that when using a democratic decision rule, larger groups behaved more cooperatively than smaller groups. Chuang, Rivoire, and Liebler (2009) constructed a non-mammalian commons dilemma using colonies of the bacteria Escherichia coli composed of strains of producer and nonproducer microbes that contribute (or do not contribute) to the common resource in an examination of the statistical concept of Simpson's paradox.<sup>[9]</sup>

In 2010, Shaimaa Lazem and Denis Gračanin, in the Department of Computer Science at Virginia Tech, took social traps to a new level: Into cyberspace. They performed a replication of the original social trap experiment, but created the social trap in the internet virtual world known as Second Life (Lazem and Gračanin, 2010). They constructed a virtual experimental laboratory with the subjects responding through avatars. The findings mirrored the original study, by finding that the ability to communicate led to greater replenishment of common resources.

## See also

---

- Braess's paradox
- Externality
- Malthusian trap
- Overexploitation
- Overfishing
- Overgrazing
- Paradox of thrift
- Social dilemma
- Tragedy of the commons
- Trigger strategy
- Tyranny of small decisions
- War of attrition
- Welfare trap
- Zero-sum

## Notes

---

1. Platt, J. (1973). "Social Traps". *American Psychologist*. **28** (8): 641–651. doi:10.1037/h0035723 (<https://doi.org/10.1037%2Fh0035723>).

2. Cross, J. G. & Guyer, M. J. (1980). *Social Traps*. Ann Arbor: University of Michigan Press. [ISBN 0-472-06315-4](#).
3. Hardin, G. (1968). "The Tragedy of the Commons". *Science*. **162** (3859): 1243–1248. [doi:10.1126/science.162.3859.1243](#) (<https://doi.org/10.1126%2Fscience.162.3859.1243>). [PMID 5699198](#) (<https://www.ncbi.nlm.nih.gov/pubmed/5699198>).
4. Brechner, K. C. (1974). "An experimental analysis of social traps: A laboratory analog". Ph.D. Dissertation. Arizona State University.
5. Brechner, K. C. (1977). "An experimental analysis of social traps". *Journal of Experimental Social Psychology*. **13** (6): 552–564. [doi:10.1016/0022-1031\(77\)90054-3](#) (<https://doi.org/10.1016%2F0022-1031%2877%2990054-3>).
6. Skinner, B. F.; Ferster, C. B. (1957). *Schedules of Reinforcement*. [ISBN 0-13-792309-0](#).
7. Costanza, R. (1984). "Review Essay: The nuclear arms race and the theory of social traps". *Journal of Peace Research*. **21** (1): 79–86. [doi:10.1177/002234338402100106](#) (<https://doi.org/10.1177%2F002234338402100106>).
8. Urlacher, B. L. (2008). "Walking out of two-level social traps (with a little help from my friends)". *Simulation & Gaming*. **39** (4): 453–464. [doi:10.1177/1046878107311379](#) (<https://doi.org/10.1177%2F1046878107311379>).
9. Chuang, J. S.; Rivoire, O. & Leibler, S. (2009). "Simpson's paradox in a synthetic microbial system". *Science*. **323** (5911): 272–275. [doi:10.1126/science.1166739](#) (<https://doi.org/10.1126%2Fscience.1166739>). [PMID 19131632](#) (<https://www.ncbi.nlm.nih.gov/pubmed/19131632>).

## References

---

- Brechner, K. C. (1974). "An experimental analysis of social traps: A laboratory analog". Ph.D. Dissertation. Arizona State University.
- —— (1977). "An experimental analysis of social traps". *Journal of Experimental Social Psychology*. **13** (6): 552–564. [doi:10.1016/0022-1031\(77\)90054-3](#) (<https://doi.org/10.1016%2F0022-1031%2877%2990054-3>).
- —— (1987). "Social Traps, Individual Traps, and Theory in Social Psychology". Pasadena, CA: Time River Laboratory, Bulletin No. 870001.
- —— (2003). ["Superimposed schedules of reinforcement applied to rent control"](http://www.dklevine.com/bin/workshops-php/discuss/discuss.php3?showID=3964670000000285) (<http://www.dklevine.com/bin/workshops-php/discuss/discuss.php3?showID=3964670000000285>). Economic and Game Theory Forum, 2003-02-18.
- —— (2010). "A social trap analysis of the Los Angeles storm drain system: A rationale for interventions". Paper presented at the 118th convention of the American Psychological Association, San Diego.
- —— & Linder, D. E. (1981). "A social trap analysis of energy distribution systems". In Baum, A. & Singer, J. E. (eds.). *Advances in Environmental Psychology*. **3**. Hillsdale, NJ: Lawrence Erlbaum & Associates.
- Cass, R. & Edney, J. J. (1978). "The commons dilemma: A simulation testing the effects of resource visibility and territorial division". *Human Ecology*. **6** (4): 371–386. [doi:10.1007/BF00889415](#) (<https://doi.org/10.1007%2FBF00889415>).
- Costanza, R. (1984). "Review Essay: The nuclear arms race and the theory of social traps". *Journal of Peace Research*. **21** (1): 79–86. [doi:10.1177/002234338402100106](#) (<https://doi.org/10.1177%2F002234338402100106>).
- Cross, J. G. & Guyer, M. J. (1980). *Social Traps*. Ann Arbor: University of Michigan Press. [ISBN 0-472-06315-4](#).
- Edney, J. J. & Harper, C. S. (1978). "The effects of information in a resource management problem: A social trap analog". *Human Ecology*. **6** (4): 387–395. [doi:10.1007/BF00889416](#) (<https://doi.org/10.1007%2FBF00889416>).
- Hardin, G. (1968). "The Tragedy of the Commons". *Science*. **162** (3859): 1243–1248. [doi:10.1126/science.162.3859.1243](#) (<https://doi.org/10.1126%2Fscience.162.3859.1243>). [PMID 5699198](#) (<https://www.ncbi.nlm.nih.gov/pubmed/5699198>).
- Keller, F. S. & Schoenfeld, W. N. (1950). *Principles of Psychology*. New York: Appleton-Century-Crofts.
- Lazem, S. & Gračanin, D. (2010). ["Social Traps in Second Life"](http://www.computer.org/portal/web/csdl/doi/10.1109/VS-GAMES.2010.29) (<http://www.computer.org/portal/web/csdl/doi/10.1109/VS-GAMES.2010.29>). Paper Presented at the Second International Conference on Games and Virtual Worlds for Serious Applications. Institute of Electrical and Electronic Engineers. [doi:10.1109/VS-GAMES.2010.29](#) (<https://doi.org/10.1109%2FVS-GAMES.2010.29>). [ISBN 978-0-7695-3986-7](#).

- Komorita, S. S. & Parks, C. D. (1996). *Social dilemmas*. See Chapter 4 on Social Traps. Boulder, CO: Westview Press. p. 80. [ISBN 0-8133-3003-3](#).
- Messick, D. M. & McClelland, C. L. (1983). "Social Traps and Temporal Traps". *Personality and Social Psychology Bulletin*. 9 (1): 105–110. doi:[10.1177/0146167283091015](https://doi.org/10.1177%2F0146167283091015) (<https://doi.org/10.1177%2F0146167283091015>).
- Platt, J. (1973). "Social Traps". *American Psychologist*. 28 (8): 641–651. doi:[10.1037/h0035723](https://doi.org/10.1037/h0035723) (<https://doi.org/10.1037%2Fh0035723>).
- Rothstein, B. (2005). *Social Traps and the Problem of Trust*. Cambridge: Cambridge University Press. [ISBN 0-521-61282-9](#).
- Skinner, B. F. (1938). *The Behavior of Organisms: An Experimental Analysis*. [ISBN 1-58390-007-1](#).
- ——— (1948). *Walden Two*. [ISBN 0-02-411510-X](#).
- ——— (1953). *Science and Human Behavior*. [ISBN 0-02-929040-6](#).
- ——— (1957). *Verbal Behavior*. [ISBN 1-58390-021-7](#).
- ———; Ferster, C. B. (1957). *Schedules of Reinforcement*. [ISBN 0-13-792309-0](#).

## External links

---

- [http://www.jiskha.com/social\\_studies/psychology/social\\_traps.html](http://www.jiskha.com/social_studies/psychology/social_traps.html)
  - [http://faculty.babson.edu/krollag/org\\_site/soc\\_psych/platt\\_soc\\_trap.html](http://faculty.babson.edu/krollag/org_site/soc_psych/platt_soc_trap.html)
  - [https://web.archive.org/web/20090211010041/http://npg.org/forum\\_series/balancing\\_biosphere.htm](https://web.archive.org/web/20090211010041/http://npg.org/forum_series/balancing_biosphere.htm)
- 

Retrieved from "[https://en.wikipedia.org/w/index.php?title=Social\\_trap&oldid=916092020](https://en.wikipedia.org/w/index.php?title=Social_trap&oldid=916092020)"

This page was last edited on 16 September 2019, at 23:43 (UTC).

Text is available under the [Creative Commons Attribution-ShareAlike License](#); additional terms may apply. By using this site, you agree to the [Terms of Use](#) and [Privacy Policy](#). Wikipedia® is a registered trademark of the [Wikimedia Foundation, Inc.](#), a non-profit organization.