

Unintended consequences

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In the social sciences, **unintended consequences** (sometimes **unanticipated consequences** or **unforeseen consequences**) are outcomes that are not the ones intended by a purposeful action. The term was popularised in the 20th century by American sociologist Robert K. Merton.^[1]

Unintended consequences can be roughly grouped into three types:

- A positive, unexpected benefit (usually referred to as luck, serendipity or a windfall).
- A negative, unexpected detriment occurring in addition to the desired effect of the policy (e.g., while irrigation schemes provide people with water for agriculture, they can increase waterborne diseases that have devastating health effects, such as schistosomiasis).
- A perverse effect contrary to what was originally intended (when an intended solution makes a problem worse)



An erosion gully in Australia caused by rabbits. The release of rabbits in Australia for hunting purposes has had serious unintended ecological consequences.

Contents

- 1 History
- 2 Causes
- 3 Examples
 - 3.1 Unexpected benefits
 - 3.2 Unexpected drawbacks
 - 3.3 Perverse results
- 4 Unintended consequences of environmental intervention
- 5 See also
- 6 Notes
- 7 References

History

The idea of *unintended consequences* dates back at least to Adam Smith, the Scottish Enlightenment, and consequentialism (judging by results).^[2] However, it was the sociologist Robert K. Merton who popularized this concept in the twentieth century.^{[1][3][4][5]}

In his 1936 paper, "The Unanticipated Consequences of Purposive Social Action", Merton tried to apply a systematic analysis to the problem of unintended consequences of deliberate acts intended to cause social change. He emphasized that his term "purposive action... [is exclusively] concerned with 'conduct' as distinct from 'behavior.' That is, with action that involves motives and consequently a choice between various alternatives".^[5] Merton also stated that "no blanket statement categorically affirming or denying the practical feasibility of *all* social planning is warranted."^[6]

More recently, the *law of unintended consequences* has come to be used as an adage or idiomatic warning that an intervention in a complex system tends to create unanticipated and often undesirable outcomes.^{[7][8]}

^{[9][10]} Akin to Murphy's law, it is commonly used as a wry or humorous warning against the hubristic belief that humans can fully control the world around them.

Causes

Possible causes of unintended consequences include the world's inherent complexity (parts of a system responding to changes in the environment), perverse incentives, human stupidity, self-deception, failure to account for human nature or other cognitive or emotional biases. As a sub-component of complexity (in the scientific sense), the chaotic nature of the universe—and especially its quality of having small, apparently insignificant changes with far-reaching effects (e.g., the butterfly effect)—applies.

Robert K. Merton listed five possible causes of unanticipated consequences in 1936:^[11]

1. *Ignorance* (It is impossible to anticipate everything, thereby leading to incomplete analysis)
2. *Error* (Incorrect analysis of the problem or following habits that worked in the past but may not apply to the current situation)
3. *Immediate interest*, which may override long-term interests
4. *Basic values* may require or prohibit certain actions even if the long-term result might be unfavorable (these long-term consequences may eventually cause changes in basic values)
5. *Self-defeating prophecy* (Fear of some consequence drives people to find solutions before the problem occurs, thus the non-occurrence of the problem is not anticipated.)

In this paper, Merton announced that he would write a book on the history and analysis of unintended consequences - but this remained unfinished when he died in 2003.

Examples

Unexpected benefits

- The medieval policy of setting up large hunting reserves for the nobility has preserved green space, often as parks, throughout England and other places in Europe.^[citation needed] Likewise the creation of "no-man's lands" during the Cold War, in places such as the border between Eastern and Western Europe, and the Korean Demilitarized Zone, has led to large natural habitats.^{[12][13][14]}
- The sinking of ships in shallow waters during wartime has created many artificial coral reefs, which can be scientifically valuable and have become an attraction for recreational divers.^{[15][16][17][18][19]}
- In medicine, most drugs have unintended consequences ('side effects') associated with their use. However, some are beneficial. For instance, aspirin, a pain reliever, is also an anticoagulant that can help prevent heart attacks and reduce the severity and damage from thrombotic strokes.^[20] The existence of beneficial side effects also leads to off-label use—prescription or use of a drug for an unlicensed purpose.

Unexpected drawbacks

- In 1990, the Australian state of Victoria made safety helmets mandatory for all bicycle riders. While there was a reduction in the number of head injuries, there was also an unintended reduction in the number of juvenile cyclists—fewer cyclists obviously leads to fewer injuries, assuming all else being equal. The risk of death and serious injury per cyclist seems to have increased, possibly due to risk compensation.^[21] Research by Vulcan et al. found that the reduction in juvenile cyclists was because the youths considered wearing a bicycle helmet unfashionable.^[22] A health benefit model developed at Macquarie University in Sydney suggests that, while helmet use reduces "the risk of head or brain injury by approximately two-thirds or more", the decrease in exercise caused by reduced cycling as a

result of helmets laws is counterproductive in terms of net health.^[23]

- Prohibition in the 1920s United States, originally enacted to suppress the alcohol trade, drove many small-time alcohol suppliers out of business and consolidated the hold of large-scale organized crime over the illegal alcohol industry. Since alcohol was still popular, criminal organizations producing alcohol were well-funded and hence also increased their other activities. Similarly, the War on Drugs, intended to suppress the illegal drug trade, instead consolidates the profitability of drug cartels.^{[24][25][26][27]}
- Most modern technologies have negative consequences that are both unavoidable and unpredictable. For example, almost all environmental problems, from chemical pollution to global warming, are the unexpected consequences of the application of modern technologies. Traffic congestion, deaths and injuries from car accidents, air pollution, and even global warming are unintended consequences of the invention and large scale adoption of the automobile. Hospital infections are the unexpected side-effect of antibiotic resistance, and even human overpopulation is the side-effect of various technological (i.e., agricultural and industrial) revolutions.^[28]
- In CIA jargon, "blowback" describes the unintended, undesirable consequences of covert operations, for example: covert funding of the Afghan Mujahideen, which contributed to the rise of Al-Qaeda.^{[29][30][31]}
- The introduction of exotic animals and plants for food, for decorative purposes, or to control unwanted species often leads to more harm than good done by the introduced species.
 - The introduction of rabbits in Australia and New Zealand for food was followed by an explosive growth in the rabbit population; rabbits have become a major feral pest in these countries.^{[32][33]}
 - Cane toads, introduced into Australia to control canefield pests, were unsuccessful and have become a major pest in their own right.
 - Kudzu, introduced as an ornamental plant and later used to prevent erosion in earthworks, has become a major problem in the Southeastern United States. Kudzu has displaced native plants, and has effectively taken over significant portions of land.^{[34][35]}
 - Africanized bee: In 1957, while searching for an increase in honey production, Warwick E. Kerr accidentally released Africanized bees in Brazil. The "especially defensive" Africanized bee species expanded into the north and south Americas.^[citation needed]

Perverse results

- The term Streisand Effect is applied to the internet phenomenon that occurs when an attempt to censor or remove a certain piece of information (such as a photograph, document, etc.) instead causes the information to become widely known and distributed.^[36] The fact that a piece of information is being restricted assigns to it a previously nonexistent value in the eyes of the public.
- Theobald Mathew's temperance campaign in 19th-century Ireland (in which thousands of people vowed never to drink alcohol again) led to the consumption of diethyl ether, an intoxicant much more dangerous due to its high flammability, by those seeking to become intoxicated without breaking the letter of their pledge.^[37]
- It was thought that adding south-facing conservatories to British houses would reduce energy consumption by providing extra insulation and warmth from the sun. However, people tended to use the conservatories as living areas, installing heating and ultimately increasing overall energy consumption.^[38]
- A reward for ghost nets found along the Normandy coast, offered by the French government between 1980 and 1981, resulted in people vandalizing nets to collect the reward.^[39]

Unintended consequences of environmental intervention

Because of the complexity of ecosystems, deliberate changes to an ecosystem or other environmental

interventions can have unintended consequences. Sometimes, these effects cause permanent irreversible changes. Examples include:

- The introduction of rabbits to Australia by Europeans, which became economically and environmentally damaging, as the rabbits had no natural predators.
- The draining of American wetlands since colonial times, resulting in flash-flooding and seasonal droughts.
- The installation of smokestacks to decrease pollution in local areas, resulting in spread of pollution at a higher altitude, and acid rain on an international scale.^{[40][41]}
- After about 1900, public demand led the federal government to fight forest fires in the American West, and set aside land as national forests and parks to protect them from fires. This policy led to fewer fires, but led to growth conditions that made what fires did occur much larger and more damaging. Modern research suggests that this policy was misguided, and that a certain level of wildfires is a natural and important part of forest ecology.^[42]

See also

- Boomerang effect (psychology)
- Cobra effect
- Collateral damage
- Relevance paradox
- Side effect
- The road to hell is paved with good intentions

Notes

1. ^{a b} Robert K. Merton, Versatile Sociologist and Father of the Focus Group, Dies at 92 (<http://www.nytimes.com/2003/02/24/nyregion/robert-k-merton-versatile-sociologist-and-father-of-the-focus-group-dies-at-92.html>), Michael T. Kaufman, *The New York Times*
2. ^a Adam Smith *The Theory of Moral Sentiments* (<http://metalibri.wikidot.com/title:theory-of-moral-sentiments:smith-a>) p. 93.
3. ^a Renowned Columbia Sociologist and National Medal of Science Winner Robert K. Merton Dies at 92 (<http://www.columbia.edu/cu/news/03/02/robertKMerton.html>) Columbia News
4. ^a Robert K. Merton Remembered (<http://www.asanet.org/footnotes/mar03/indextwo.html>) Footnotes, American Sociological Association
5. ^{a b} Merton, Robert K. "The Unanticipated Consequences of Purposive Social Action" (<http://www.d.umn.edu/cia/faculty/jhamlin/4111/2111-home/CD/TheoryClass/Readings/MertonSocialAction.pdf>). *American Sociological Review* 1 (6): 895. Retrieved 2008-05-30.
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