Applications

By Breck Frauenholtz

***Resolved: In the context of innovation, the proactionary principle ought to be valued above the precautionary principle.***

The context of innovation is an incredibly broad topic area that will include innumerable examples of massive success and terrible failure. This resolutional breadth means two things, both of which are true for all resolutions, but are especially true of this one: first, you will have a wonderful selection of examples to choose from, second, examples alone cannot prove either side of the resolution true. For every example of a wildly successful innovation, there is an example of a horribly harmful innovation, and vice versa. However, applications are useful tools in LD debate, and the sheer volume of examples relevant to this resolution gives you a plethora of ways illustrate your points, sway judges’ hearts, and argue persuasively.

Because of the number of potentially relevant applications this year, this article is designed to systematically guide you through some common application types. It’s not designed to introduce you to a whole bunch of resolutional examples, but rather to help you recognize, categorize, and utilize applications as you encounter them throughout the year. For each category of application type, we’ll discuss some specific examples within that category, but the focus will be more on the overall kind of application and less on the specific illustrative examples.

For each of the resolution’s two principles, we’ll cover the pros and cons of each. So, we’ll start by putting ourselves in Affirmative’s shoes and examining positive examples of the proactionary principle, then switch perspectives and discuss the cons of proaction from the Negative viewpoint. For the precautionary principle, we’ll do the same thing, starting with Negative examples of the precautionary principle’s merits and ending with the Affirmative’s perspective on the downsides of precaution.

## Proactionary Pros — Everyday Benefits

 One of the strange things about life in the 21st century is that our everyday experiences are so different from the everyday experiences of every generation before us. The phones in our pockets have more computing power than NASA used to put a man on the moon. We have access to more information through our television than existed in the Library of Alexandria. We can hop on a plane and fly halfway across the world in a matter of hours, have a freshly cooked meal delivered to our doorstep without ever leaving the couch, and let our robot vacuum cleaners pick up any crumbs we might drop on the floor. Just a few generations ago, electric lighting and indoor plumbing were things to be marveled at, not basic amenities.

 To be sure, those phones in our pockets are highly addictive and we mostly use them to fight with each other, the sheer volume of the information at our disposal can get overwhelming, the ease of transportation helped facilitate the spread of a pandemic, and we’re pretty sure our robot vacuums are teaming up with our Amazon smart speakers to spy on us even more effectively. Our situation isn’t free of problems. But proactionary innovation has made huge inroads into the problems that used to be just a part of life, and future innovations will eventually eliminate the problems that we consider to be just a part of life.

 This category of application is very easy to overlook, because seemingly simple examples of positive progress are all around us, literally right under our noses. But as simple as these examples are, they represent profound progress happening at a rate never before seen in all of human history.

## Proactionary Cons — Going Too Fast

One of the most important classes of applications you may use against the affirmative is examples of science going too far. Proaction doesn’t mandate restrictions, which means that deontological ethics can be mistakenly—or even intentionally—disregarded. Proactionary principles conceivably allow an innovator to chart his own path, as long as that path is generally progressing forward. For instance, the gene editing technique called CRISPR has the potential to revolutionize medicine and create spectacular outcomes, but it can also be used in dangerous and unethical ways.

Lulu and Nana are twins, from China, and are the first children born after their genomes were edited. They represent an incredible innovative breakthrough, and their birth made international headlines for weeks.

TIME Magazine, November 2018.  *“‘They Will Be Studied for the Rest of Their Lives.’ How China’s Gene-Edited Twins Could Be Forever Changed By Controversial CRISPR Work”; by Alice Park, Time staff writer. https://time.com/5466967/crispr-twins-lives/*

“He Jiankui, a professor at the Southern University of Science and Technology, stunned the world when he claimed, both in a video posted by his lab and in an interview with a journalist, that he used CRISPR to disable a gene involved in helping HIV to enter healthy cells. By doing so, he gave the resulting edited embryos, including the twin girls, resistance to the virus. Doing so means He violated current guidelines prohibiting using CRISPR on human embryos for pregnancy.”

So far, that doesn’t sound so bad, except for the part about violating current guidelines for the use of CRISPR. Resistance to HIV certainly seems like a good thing, right? Not entirely. The TIME article continues:

TIME Magazine, November 2018.  *“‘They Will Be Studied for the Rest of Their Lives.’ How China’s Gene-Edited Twins Could Be Forever Changed By Controversial CRISPR Work”; by Alice Park, Time staff writer. https://time.com/5466967/crispr-twins-lives/*“According to experts who reviewed some of the data He presented at a conference days after his stunning announcement, they say there is evidence that both girls born with the CRISPR edits showed such signs of mosaicism when they were embryos, meaning they are now likely to have the same mishmash of CRISPR’d and unCRISPR’d cells in their bodies. That means that they may not even benefit from the resistance to HIV that He’s grand experiment was meant to provide. There’s also evidence that compromising the HIV gene may have other consequences — for example, making people more susceptible to West Nile Virus and possibly the flu.”

Not only are there perceived risks with this new technology, but the scientist also used these children as a means to an end. He didn’t value their humanity but used them without their consent.

## Precautionary Pros — General Protection

Just like we often take proactionary innovations for granted, we also tend to take regulations for granted. We eat meat and vegetable products that are regulated by the government, if you live in the United States you have the Food and Drug Administration, products that undergo inspection to ensure that no harm will come to the consumer. When we buy food from the store, we don’t second guess the safety in eating it – we trust the store to sell untainted product – but part of our trust stems from the fact that we have federal regulations on cleanliness, toxic waste, and safe materials. Regulations create a zone of safety that allow us to consume with security. Precaution creates a zone of safety that allows us to consume with safety. It would likely be detrimental if every time a new business popped up we had to wait until it was proven beyond a reasonable doubt that their product WASN’T going to harm people; no, we take the precautionary measures, we place in regulations that you have to abide by at the door. And if you don’t. If you don’t prove through regulations that your product won’t harm the consumer, we shut you down.

Our society inherently respects precaution by having institutions that require companies to prove their product won’t harm people. Regulation assumes that change adds risk. It assumes that before there is even proven research that a drug will harm a people it is possible that it will, so let’s run it through rigorous testing to see if it won’t. If you argue that the precautionary restriction is a reaction to an unconfirmed harm, you can feel free to use regulatory agencies that prevent various harms like the FDA.

## Precaution Cons — Missed Opportunities

 Precaution attempts to bar an innovation from harming people, but it can be argued that it doesn’t consider whether barring an innovation will cause more harm. A great example of barring innovation creating more harm is bans on GMOs, genetically modified food.

Technological Policy Analysts Daniel Castro and Michael McLaughlin, February 2019. *(Castro is vice president of the Information Technology and Innovation Foundation and director of the ITIF’s Center for Data Innovation. At the time of publication, McLaughlin was a research analyst at the ITIF specializing in information technology and internet policy.) “Ten Ways the Precautionary Principle Undermines Progress in Artificial Intelligence,”; Information Technology and Innovation Foundation.* [*https://itif.org/publications/2019/02/04/ten-ways-precautionary-principle-undermines-progress-artificial-intelligence*](https://itif.org/publications/2019/02/04/ten-ways-precautionary-principle-undermines-progress-artificial-intelligence)“Policies based on the precautionary principle are not cost-free propositions, however. In seeking to eliminate potential risks, they can reduce potential benefits and create new problems and unintended consequences. For example, some countries have implemented bans on importing or cultivating genetically modified organisms (GMOs)—plants or animals that have altered genetic code—over fears about their safety. This is despite a virtually unanimous scientific consensus that GMOs are perfectly safe. Bans on GMOs can not only cause higher food prices but also increased greenhouse gas emissions as more forests become farmland to compensate for the lower yields of non-GMO crops. Moreover, research suggests GMOs could have saved thousands of lives that perished from malnourishment in African nations that delayed the approval of GMOs. Lastly, the ban on GMOs by many European nations has severely limited incomes for many small-scale African farmers.”

In a similar manner, but in a different arena, concerns about the dangers of AI, may lead to various Safety Boards and policies that will slow the processes of AI innovation. But curbing innovation could be harmful.

Technological Policy Analysts Daniel Castro and Michael McLaughlin, February 2019. *(Castro is vice president of the Information Technology and Innovation Foundation and director of the ITIF’s Center for Data Innovation. At the time of publication, McLaughlin was a research analyst at the ITIF specializing in information technology and internet policy.) “Ten Ways the Precautionary Principle Undermines Progress in Artificial Intelligence,”; Information Technology and Innovation Foundation. [Note: Ellipses included by original authors.]*[*https://itif.org/publications/2019/02/04/ten-ways-precautionary-principle-undermines-progress-artificial-intelligence*](https://itif.org/publications/2019/02/04/ten-ways-precautionary-principle-undermines-progress-artificial-intelligence)“AI will spur innovation so policies that limit the development of AI will limit innovation. For example, proposals to ban or limit the introduction of autonomous vehicles would also limit the generation of new businesses, business models, and ways to do deliver services through the “passenger economy.” The passenger economy, a term coined by Intel and research firm Strategy Analytics, “is the economic and societal value that will be generated by fully autonomous…pilotless vehicles.” The firms envision a world where a significant portion of vehicle ownership is replaced by fleets of autonomous vehicles that provide on-demand transportation. Productivity would also increase as autonomous vehicles free employees to work during their commutes and autonomous trucks to operate more efficiently. The firms estimate the value of this economy could be $7 trillion by 2050. Nations that ban autonomous vehicles will not experience the benefits of such an economy.”

 Just because AI could pose problems doesn’t mean we should ban it. Continuing to innovate in this area could create massive benefits, but overvaluing the precautionary principle will stymie those potential gains.

## Conclusion

As previously stated, this article is a guidebook, not a dictionary. It’s not a comprehensive list of applications, but a way to approach the myriad of examples under this resolution in an organized and coherent fashion. Best of luck this year.