

Translating research into reality

If a scientist was to discover a chemical that cures flu the benefit to everyone is obvious; no one wants to have flu! Some scientific discoveries, however, have no immediate value to society. In these cases the findings can be used, or “translated”, to produce something that is. Take for example the structure of DNA, which was discovered in 1953. This was certainly interesting but was of no use to the general public at the time; it could not for example be used to make new crop varieties, diagnose illnesses or catch criminals. However, other scientists have since used this information to develop methods that can do these things. These scientists translated the structure of DNA into something that has great value to the world. This is the translation of research results and is what this article is about. There are two important questions about translating research findings. First why not just produce something that is useful in the first place, and second how a scientist could help improve the translation process.

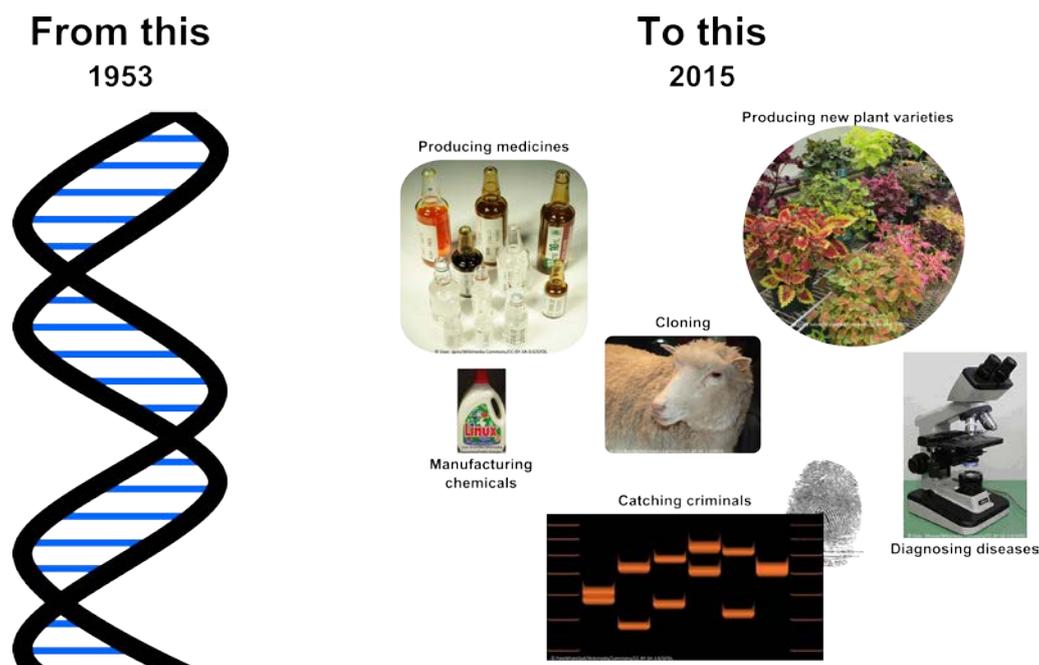


Figure: Examples of how the structure of DNA has been translated into beneficial products or methods (pictures are derived from /Wikimedia/Commons/CC-BY-SA-3.0/GFDL).

So let's answer the first question, why not just work on something that would be beneficial to society in the first place. Research where there is a clear goal to produce a product or method is called applied research. An example of applied research would be to develop a new variety of crop that flowers earlier and so will save the farmer time and money. The other type of research is called fundamental or basic research. In this case the aim is not to produce a product or method, but instead to find out something about the world we live in.

To use flowering again, an example would be to find out how a plant decides when to flower. This knowledge in itself is not useful to farmers as no new crop variety has been created, however, it makes the job of the person doing the applied research a lot easier as they now know how the plant decides when to flower. The key reason for doing basic research is that it provides a foundation for applied research and hence is why there is the need for basic research to be translated.

For the second question let us return to flowering. A scientist discovers how plants decide when to flower. What do they do? Well first of all they need to tell other people about it. Maybe this discovery could change the world, but it won't if no one knows about it. This is why it is important for scientists to publish and present their work to other scientists and the general public. It allows people to think "I wonder if that would solve ..." or "Maybe I could use this to...". So they have published their work, is that it? Can they now just sit back, relax and wait for something to happen? They could, but it would be better if they did something themselves. So what can they do? Most scientists do not know much about making new crop varieties, but they can collaborate with other scientists or companies that do. Together they can use their combined knowledge to produce a crop variety that flowers early. This means that the two most important aspects to facilitate the translation of research are 1) telling people about the discovery and 2) collaborating with others to take advantage of the discovery. Hopefully this article has shown you the value of translating basic research and also how scientists can speed up this process.

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