

Robert Boyle's Wish List: What has been Achieved?

*Assessing the "List of scientific projects/desiderata," commonly called "Boyle's Wish List"
(Library of the Royal Society ref. no. RB 1/8/30)*

1. ✘ **The Prolongation of Life.** *In Robert Boyle's time the life expectancy in England was 37; today it is 81, but it would be a mistake to chalk this up as a win. The increase is a result of better healthcare and security rather than genuine prolongation of life; in Boyle's day those who survived the hazards of the time to eventually die of old age lived as long as we do now: Boyle died at 64; Robert Hooke at 67; Isaac Newton at 84; Christopher Wren at 90; Old Parr at 152. True extension of life has not been achieved.*
2. ✘ **The Recovery of Youth, or at least some of the Marks of it, as new Teeth, new Hair colour'd as in youth.** *Ditto above.*
3. ✔ **The Art of Flying.** *Aircraft.*
4. ✔ **The Art of Continuing long under water, and exercising functions freely there.** *Submarines.*
5. ✔ **The Cure of Wounds at a Distance.** *Examination and diagnosis can now be conducted at a distance, such as with X-rays and MRIs, plus there are wearable wireless medical devices and the like, but "Cure of Wounds"?—one imagines here a Star Trek-like gadget, where Bones points his device at the damage which then magically disappears. Marking this one as "done, although questionable."*
6. ✔ **The Cure of Diseases at a distance or at least by Transplantation.** *By transplantation, certainly—but even the taking of an antibiotic to recover from illness would meet Boyle's requirement here: although prescribed by a doctor one takes it oneself, with no one else in attendance.*
7. ✘ **The Attaining [of] Gigantick Dimensions.** *Steroids? Surely Boyle meant something more than just American football players, so no, this has not been achieved.*
8. ✔ **The Emulating of Fish without Engines by Custome and Education only.** *Since scuba gear is possibly an "engine" this is not a slam dunk, but one imagines were Boyle to see a skin diver in action he would likely count this item as achieved.*
9. ✔ **The Acceleration of the Production of things out of Seed.** *This is the heart of the agricultural revolution that has allowed humanity to avoid Malthus's gloomy predictions.*
10. ✔ **The Transmutation of Metals.** *Doable, although not in the simple alchemical way that Boyle would no doubt have wished.*
11. ✔ **The makeing of Glass Malleable.** *There are bendable phone screens now, but even before these were invented any material that performed the same function as glass would count, even if not strictly glass (i.e., transparent plastic).*
12. ✔ **The Transmutation of Species in Mineralls, Animals, and Vegetables.** *In minerals, since at least the advent of the cyclotron, and in living matter, since at least the advent of CRISPR-Cas9.*

13. ✓ **The Liquid Alkaest and Other dissolving Menstruums.** *“Alkaest” is an alchemical term meaning a solvent that will dissolve anything. Given Boyle’s status as the father of chemistry, it is reasonable to assume that he meant the ability to break up any substance into its constituents. This has certainly been achieved, and one imagines that he would marvel at the current ability to manipulate materials right down to the subatomic level, as is now done routinely with substances as diverse as perovskites, 2D graphene layers, and various superconductors.*
14. ✓ **The making of Parabolicall and Hyperbolicall Glasses.** *As a young man fresh from Eton, Boyle was fascinated by Galileo’s works and learned Italian to read them in the original. He traveled to Florence in hopes of seeing the great man, but Galileo died before they could meet. One imagines that his reading of Galileo was a source of this item. What would Boyle, or Galileo, have made of the Hubble space telescope?*
15. ✓ **The making Armor light and extremely hard.** *Boyle probably just meant sufficient to stop a sword, and he would have been amazed at a police officer’s vest’s ability to stop a bullet.*
16. ✓ **The practicable and certain way of finding Longitudes.** *Achieved two centuries ago.*
17. ✓ **The use of Pendulums at Sea and in Journeys, and the Application of it to watches.** *This was meant to solve the timekeeping problem, which in turn would have solved the longitude problem. Both were solved, although not using pendulums.*
18. ✓ **Potent Druggs to alter or Exalt Imagination, Waking, Memory, and other functions, and appease pain, procure innocent sleep, harmless dreams, etc.** *Keith Richards.*
19. ✓ **A Ship to saile with All Winds, and A Ship not to be Sunk.** *Not strictly unsinkable, but one imagines that Boyle would have found the Queen Mary 2 satisfactory.*
20. ✓ **Freedom from Necessity of much Sleeping exemplify’d by the Operations of Tea and what happens in Mad-Men.** *Keith Richards again, who claims that because he has slept so little he has effectively lived more than one lifetime.*
21. ✓ **Pleasing Dreams and physicall Exercises exemplify’d by the Egyptian Electuary and by the Fungus mentioned by the French Author.** *Neither the “Egyptian Electuary” nor “the Fungus mentioned by a French Author” has been positively identified.¹ However, by this stage it is clear that Robert Boyle & Keith Richards have a surprising amount in common.*
22. ✗ **Great Strength and Agility of Body exemplify’d by that of Frantick, Epileptick and Hysterickall persons.** *Again, steroids? No, the “Frantick, Epileptick and Hysterickall” reference implies great strength from the same frame, something that has not been achieved.*
23. ✓ **A perpetuall Light.** *In cities like New York, the difficulty today is to find not light but dark.*
24. ✓ **Varnishes perfumable by Rubbing.** *Presumably this means the production of scent by rubbing a solid object, without the inconvenience of carrying and applying liquid perfume, and something desirable in the Seventeenth Century when even the well-to-do bathed only once a month. Let us count the humble deodorant stick as having achieved the overall aim here.*

¹ According to Noel Malcolm, possibly the French confidence trickster, Georges Pierre-des-Clozets, who claimed to belong to a secret society of alchemists, 'the Asterism.' (*Early Science and Medicine* 9(4):293-306, January 2004)