



01

[1] The original idea of a patent, remember, was not to reward inventors with monopoly profits, but to encourage them to share their inventions.

[2] A certain amount of intellectual property law is plainly necessary to achieve this.

[3] But it has gone too far.

[4] Most patents are now as much about defending monopoly and discouraging rivals as about sharing ideas.

[5] And that disrupts innovation.

[6] Many firms use patents as barriers to entry, suing upstart innovators who trespass on their intellectual property even on the way to some other goal.

[7] In the years before World War I, aircraft makers tied each other up in patent lawsuits and slowed down innovation until the US government stepped in.

[8] Much the same has happened with smartphones and biotechnology today.

[9] New entrants have to fight their way through "patent thickets" if they are to build on existing technologies to make new ones.



02

- [1] Children develop the capacity for solitude in the presence of an attentive other.
- [2] Consider the silences that fall when you take a young boy on a quiet walk in nature.
- [3] The child comes to feel increasingly aware of what it is to be alone in nature, supported by being "with" someone who is introducing him to this experience.
- [4] Gradually, the child takes walks alone.
- [5] Or imagine a mother giving her two-year-old daughter a bath, allowing the girl's reverie with her bath toys as she makes up stories and learns to be alone with her thoughts, all the while knowing her mother is present and available to her.
- [6] Gradually, the bath, taken alone, is a time when the child is comfortable with her imagination.
- [7] Attachment enables solitude.



03

[1] New technology tends to come from new ventures — startups.

[2] From the Founding Fathers in politics to the Royal Society in science to Fairchild Semiconductor's "traitorous eight" in business, small groups of people bound together by a sense of mission have changed the world for the better.

[3] The easiest explanation for this is negative: it's hard to develop new things in big organizations, and it's even harder to do it by yourself.

[4] Bureaucratic hierarchies move slowly, and entrenched interests shy away from risk.

[5] In the most dysfunctional organizations, signaling that work is being done becomes a better strategy for career advancement than actually doing work.

[6] At the other extreme, a lone genius might create a classic work of art or literature, but he could never create an entire industry.

[7] Startups operate on the principle that you need to work with other people to get stuff done, but you also need to stay small enough so that you actually can.



04

[1] You know that forks don't fly off to the Moon and that neither apples nor anything else on Earth cause the Sun to crash down on us.

[2] The reason these things don't happen is that the strength of gravity's pull depends on two things.

[3] The first is the mass of the object.

[4] The apple is very small, and doesn't have much mass, so its pull on the Sun is absolutely tiny, certainly much smaller than the pull of all the planets.

[5] The Earth has more mass than tables, trees, or apples, so almost everything in the world is pulled towards the Earth.

[6] That's why apples fall from trees.

[7] Now, you might know that the Sun is much bigger than Earth and has much more mass.

[8] So why don't apples fly off towards the Sun?

[9] The reason is that the pull of gravity also depends on the distance to the object doing the pulling.

[10] Although the Sun has much more mass than the Earth, we are much closer to the Earth, so we feel its gravity more.



05

[1] In physics, the principle of relativity requires that all equations describing the laws of physics have the same form regardless of inertial frames of reference.

[2] The formulas should appear identical to any two observers and to the same observer in a different time and space.

[3] Attitudes and values, however, are subjective to begin with, and therefore they are easily altered to fit our ever-changing circumstances and goals.

[4] Thus, the same task can be viewed as boring one moment and engaging the next.

[5] Divorce, unemployment, and cancer can seem devastating to one person but be perceived as an opportunity for growth by another person, depending on whether or not the person is married, employed, and healthy.

[6] It is not only beliefs, attitudes, and values that are subjective.

[7] Our brains comfortably change our perceptions of the physical world to suit our needs.

[8] We will never see the same event and stimuli in exactly the same way at different times.



06

[1] Not only are humans unique in the sense that they began to use an ever-widening tool set, we are also the only species on this planet that has constructed forms of complexity that use external energy sources.

[2] This was a fundamental new development, for which there were no precedents in big history.

[3] This capacity may first have emerged between 1.5 and 0.5 million years ago, when humans began to control fire.

[4] From at least 50,000 years ago, some of the energy stored in air and water flows was used for navigation and, much later, also for powering the first machines.

[5] Around 10,000 years ago, humans learned to cultivate plants and tame animals and thus control these important matter and energy flows.

[6] Very soon, they also learned to use animal muscle power.

[7] About 250 years ago, fossil fuels began to be used on a large scale for powering machines of many different kinds, thereby creating the virtually unlimited amounts of artificial complexity that we are familiar with today.