

§3.5 onwards

1 Summary

We continue here from where we left off at the end of §3.4: discussing the techniques that support the goals outlined earlier in the paper. Then, §4 undertakes a less technical approach to the process that helps achieve the part of his summary detailed in earlier parts of the paper: “STEADY by AID.” Specifically, we now learn about Lampson’s final part of the summary “WITH ART”: Architecture, Automation, Review, Techniques, and Testing. Finally, §5 is a discussion on the oppositions mentioned throughout the paper to help think about system design by considering different ends of a spectrum with respect to certain aspects.

2 Strengths of the paper

Like in earlier sections of this paper, it remains helpful for today’s reader when Lampson draws on today’s technology as examples to convey his message. For example, when describing what he means by the goal, “Yummy”, which is a product that more or less excites its users, he uses Macs, iPods, and iPhones as examples. The entire §5 is filled with tremendously useful and helpful oppositions related to system design that strengthen the reader’s ability to make their own choices when the time comes for making these choices. One of the best and concise definitions of distributed systems comes from a quote by Leslie Lamport where Lampson is contrasting *centralized vs distributed*, “A distributed system is one in which the failure of a computer you didn’t even know existed can render your own computer unusable.” As is the case with the rest of the paper, the prolific usage of quotes not only eases Lampson’s challenge in conveying his message, but also simplifies the readers’ understanding.

3 Major weakness of the paper

For the sake of argument, and perhaps at the risk of being nitpicky, I wonder whether *being* and *becoming* are truly oppositions as Lampson describes them in §3.8.1. He states, “. . . being is a **map** that tells you the values of the variables, becoming a **log** of the actions that got you here.” Personally, I’d argue that being is merely a result of becoming; the state of being is a result of the action of becoming. Compare *being vs becoming* to *exact vs tolerant* which is another example of opposition Lampson explains. To me at least, the latter is much clearer than the former. Given that this issue has to do with semantics, this is quite fixable, as perhaps all that’s needed for a reader like me to understand his exact point is a clearer explanation.

4 Future work opportunities

The remainder of the paper which this report summarizes further strengthens the notion that this is foundational work on computer system design. Designer of new computer systems along with existing ones can leverage this paper, specifically the hints and principles herein, to prevent engaging in hand-wavy arguments and trivial implementation methods.