Side Note:

During the public peer review process on Substack for the Introduction to Volume 3 – Notebook #I: Model Risks for Retirement Planning, readers asked the following questions: (i) When did you get your "Aha!" moment about retirement planning? (ii) When did you see a crack in the egg of traditional financial planning? (iii) What motivated you to the point of building a new "path"? (iv) How did rejection of such new ideas motivate or discourage you? (v) How did it feel?

The "Aha!" moment happened after the sale of Rational Investors, Inc. to S&P in 1999. The "*Perception*" of its importance and urgency started to build-up in a series of meetings with estate planning lawyers, broker/dealer representatives, registered investment advisors, insurance agents, and new Internet providers such as Jim Clark's MyCFO.com. After 20 years of sitting on the industry's side of the table, sitting on the client side of the table provided a startling, and uncomfortable perspective: The portfoliocentric messaging did not address many of my critical client-centric questions and concerns.

The differences between the accumulation perspective of investment management, and the decumulation perspective of retirement planning felt important, urgent, and personal. Something critical and existential kept missing in these discussions. The first thought went to building retirement products, and this led to starting Retirement Engineering, Inc. and developing the Guaranteed Retirement Income Security ("GRInS"). However, this product building, and distributing experience showed that the financial industry already had many products on the shelf, and likely enough of them.

This personal experience of incomplete client meetings combined with the experience of the industry's rejection of GRInS as a product solution led logically to seeing "*Process*" as the missing component. Advisor meetings focused on Financial Capital, and did not address the other components of the household balance sheet that I used along with a cash flow statement for personal budgeting.

Finally, meetings, and discussions with distributors as well as investment and insurance manufacturers about the GRInS product revealed the presence of budgets for the development of a retirement planning "Process" instead of the development of a new financial product. This led to founding of a new industry association, RIIA, that would work like "Switzerland" with members from all parts of the financial industry, and that would take the perspective of the "View Across the Silos" to discover, document & teach the new best practices for retirement planning in the decumulation phase of the client's life-cycle.

The rest of the story became a typical history of innovation diffusion, complete with error, deceit, rejection, betrayal, and plagiarism as well as insight, clarity, support, loyalty, and originality. RIIA felt like a vibrant collective happening, a movement open to all, and benefiting from contributions from all corners of the financial industry. The sting of slings and arrows, scary as some were, felt small in the context of what we were

building. We made demands of ourselves, they made demand of others, and tended to hit were we once stood, not where we had moved, as we kept moving forward.

CTRI's Business Ecosystem Template ("BET"), shown below, summarizes the holistic perspective of this "View Across the Silos". It also matches the perspective of "Terrain Theories" where an ecosystems harbor the means of its own destruction. You can only keep what you can defend: Potential losses from "Willful Ignorance, Error & Deceit" can develop from all of the sides that surround the "Productive Host". For details see "Constructive Skepticism" Volume 1 – Workbook #III: Making Good Business Decisions.

<u>Table 1: CTRI's Business Ecosystem Template ("BET") Showing the Role of the "Productive Host"</u> at the Confluence of Time and Energy Flows

Evolutionary Flows vs. Energy Flows	Past/Ancestral	Present/Current	Future/Evolving
Inputs from High Potential Energy Reservoirs	Cooperators	Partners	Clients
Primary Energy Converters	Parents	Productive Host	Children
Outputs to Residual Energy Converters	Suppliers	Manipulators	Predators

It was hard to look through the opacity of RIIA's own business ecosystem given its scope and diversity. We made our fair share of mistakes, and we did see the expected cases of "Word Magic" as well as "Number Magic" through "Misdirection" and "False Reconstructions". What surprised us was the low price for made-to-order research papers based on small samples. Small sample, low-powered research tends to fail replication, and this problem has grown so large that John Ioannidis, one of the most cited scientists, wrote a paper in 2005, titled: "Why Most Published Research Findings Are False".

Seeing the limits of the track traveled by research papers based on the quantitative estimate of statistical doubt from small sample averages, we looked for opportunities to travel the track of research based on individual clinical ambiguity. This is a track where the individual sheds the tyranny of averages, and retakes the power to ask personal questions.

This is the track that we took in 2005 as we developed new retirement planning tools such as the household balance sheet ("HHBS") analysis. HHBS analysis made clinical individual ambiguity tractable for the advisor, and understandable by the client. Clients and advisors can use the HHBS to ask better questions, instead of being silenced by normative solutions. In addition, the HHBS created explicit spaces for review and inclusion of portfolio-centric, and insurance-centric solutions. HHBS-based, client-centric retirement planning complements portfolio-centric, and insurance-centric approaches.

CTRI's work continued RIIA's work on this track of expressing clinical individual ambiguity by asking questions, and found that it was travelling it in good company. Retaking the power to ask questions is also the track that *Ole Peters* took in 2010 with *Ergodicity Economics* ("EE") when he started to ask foundational questions about the meaning of growth and "*Utility*" in financial models. As explained by *Alex Adamou* in his introductory presentation for EE2021, the first conference on EE, the "*Expected Value*" of a random variable provide an a-temporal decision criterion, and individuals make decisions over time. Thus, EE studies the temporal aspects of randomness by determining the ergodicity of stochastic processes built from a randomness generator driving a specific "*Growth Dynamic*". EE brings foundational changes to the development of financial, and retirement planning models.

EE's framing of financial decision problems in terms "Time Average" growth rates instead of "Expected Values" of rates of return provides quantitative explanations that bring closure to a large number of the "Puzzles, Paradoxes & Anomalies" in Financial Economics & Behavioral Economics theories based on the Logic & Statistics Program For instance, it solves problems related to discounting and utility as intrinsic properties of EE "Growth Dynamics" that do not require an appeal to "As-if" models or hidden forces external to the model. As another example, "Path Dependency" breaks ergodicity. This means that researchers cannot coherently apply "Expected Values" to individual temporal analysis without further investigating, finding, and applying a proper matching functional transformation. Thus, EE research on (i) the generalization of Utility Theory, (ii) Insurance as an ergodicity problem, and (iii) Absorbing barriers as a source of non-ergodicity provides new best practices for HHBS analysis.

Other fellow travelers on this track of retaking the power to ask questions include *Gerd Gigerenzer* and the "*Fast & Frugal*" *Heuristics Program*. His work will come up frequently in this reading note, especially with the development of improved best practices related to Behavioral Finance, and their impact on HHBS analysis.

Turning to the final question of "How did if feel?": Well, it felt good. We were not looking to win normative arguments for academic fame. We were looking for practical ways to build successful retirements. This meant building an understandable body of knowledge, and formalizing it so that we could teach it to other people that would then use it with their clients. This included the RMA graduate that I hired ten years ago as my retirement advisor. It still feels good after all these years.