

Dialogue on Synthesis



Rex Li (RL)

Editor's Note:

In reading through Howard's blog in 2022, I can see that he is as energetic and productive as ever, writing much on synthesis. I further reviewed his theory of synthesis and proposed a dialogue with him on the subject. With his consent, we began a discussion which was turned into the pages below. My thanks are due to Howard and his wife, psychologist Ellen Winner, who made valuable suggestions.
Rex Li, July 2022



Howard Gardner (HG)

1. Your route to synthesis (2000)

RL: In the 1990s you spent much time on case studies of the creative minds, education and the disciplined mind. Then around 2000, you met Nobel Laureate physicist Murray Gell-Mann, who talked about the synthesizing mind, saying that “in the 21st century, the most important kind of mind will be the synthesizing mind” (Gardner 2020, p. 216). Subsequently you turned out *Five Minds for the Future* in 2008, in which you put synthesis as one of the 5 minds.

When you wrote your autobiography, synthesis is all through your life and you said, “I’ve concluded that it’s more useful, more informative, even more accurate to say that I have a synthesizing mind.” (2020, p. 217) Would you agree that Murray had alerted you of your unusual gift and capacity in synthesis?

HG: I would certainly agree that Murray Gell-Mann’s remark caught my attention—indeed, I can still remember it two decades later. But in looking back at my writings, I see that I have long used the word “synthesis” to describe my own work. In my first trade book, *The Quest for Mind* (1973), I described my effort to “synthesize” the ideas of psychologist Jean Piaget and anthropologist Claude Levi-Strauss. And in a long essay on my own work around 1981, written in conjunction with my receipt of a MacArthur Prize Fellowship, I described myself as a synthesizer.

That’s why I like to quote M. Jourdain in the Moliere play “le bourgeois gentilhomme”—he said that he had been speaking prose all of his life without realizing that was what he was doing!

2. Your principles of synthesis (2008)

RL: In your book, *Five Minds for the Future*, you discussed the synthesizing mind at length in Chapter 3. You offer kinds, components (steps) and the risks and rewards of synthesis. Your kinds of synthesis are: narrative, taxonomies, complex concepts, rules and aphorisms, metaphors, images, themes, theory, metatheory. Your steps are: goal, starting point, selection of strategy, method and approach, and then drafts and feedback. Apparently, you practiced all these in your academic writing career, from textbook writing to developing your theory of multiple intelligences, didn’t you?

HG: Remaining for a moment with M. Jourdain, I believe that you are correct—I have probably used all of these techniques and tactics without being conscious of those “moves.” And I have followed them in roughly the order that is quoted. But in that chapter I was trying to make a different point: Namely, those who want to be effective synthesizers have a wide range of tools—a copious toolbox, so to speak—on which to draw in making their syntheses. And would-be synthesizers should draw on those tools that are most effective in capturing their ideas and in conveying them effectively to others. And they should follow the order that they find most comfortable—doubling back and forwarded as they’d like. I was not trying to provide a recipe or fixed method.

Not all tools work for all individuals—for example, I don’t like “mind mapping,” (visual depictions of streams of thought) for the most part; and I rarely use visual images of any complexity. Other synthesizers would feel naked, unarmed, without those visual or spatial tools. The items I listed are primarily linguistic or logical, because those are the “intelligences” on which I (as a scholar and writer) typically draw.

As it happens, I am very influenced by classical music—and particularly by the classical sonata form that we associate with Mozart or Haydn—and I think that in writing chapters and books, I am often drawing on some of the structural principles of classical music—for example, introducing a theme, dissecting it in various ways, and then returning to the main themes. This may also be the reason that I dislike certain syntheses: they strike me as discordant or disharmonic, they fail to introduce and develop “themes” in a “harmonic” way.

Finally—and this was pointed out to me some time ago by the biologist E. O. Wilson (whom you mention below)—I like to classify and re-classify items—and this penchant presumably draws on what Wilson and I would both term “naturalist intelligence.”

3. Too much synthesis and Ken Wilber (2008, 2022)

RL: In your chapter of the synthesizing mind, you reviewed

“I’ve concluded that it’s more useful, more informative, even more accurate to say that I have a synthesizing mind.”

Ken Wilber's *A Brief History of Everything*. You called him a "lumper" in which he synthesized concepts so that "depth is everywhere, conscious is everywhere, spirit is everywhere When everything connects to everything else — . . . it would be difficult to know how to disprove Wilber" (p. 62).

When you mentioned "too much synthesis" in your recent blog, did you have Wilber in mind?

In 2005 Wilber started the integral spiritual center to promote integral spirituality. He continued to write *Trump and a Post-Truth World* (2017). Did you read his more recent work and what do you think?

HG: I do not want to single out Ken Wilber for criticism. His projects, ambitions, and goals are impressive and I have learned from reading his earlier works. I just wish that when he was creating taxonomies of studies in psychology and related fields, he would be explicit about the criteria for including an element or idea or theory, and the criteria for excising or deleting an element or idea or theory.

An example from my own work: Once I had proposed the idea of multiple intelligences, any number of people proposed additional intelligences—humor intelligence, spiritual intelligence, technology intelligence, financial intelligence, etc., I could easily have extended my list and pleased some of my friends. But I have very strict criteria for what does, or does not, count as an intelligence. And so in 40 years, I have added only one intelligence (naturalist) and considered two others (existential and pedagogical). In that sense, I am a strict constructionist or "splitter," while Ken Wilber is more of a "lumper."

I've not read his most recent book. There is so much writing about Trump—does Wilber have new things to say about the ex-president?

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4. Your mentors on synthesis (2020)

RL: You mentioned the importance of role models in synthesis: "... aspiring synthesizers have to depend on role models" (2020, p. 229)

During your academic career, you had had many mentors who were also ingenious synthesizers, such as Jerome Bruner, Erik Erikson, Nelson Goodman, Norman Geschwind, Richard Hofstadter and Edmund Wilson. Who had the most significant impact on you? Or would it be the Harvard program of Social Relations (Soc Rel) of interdisciplinary study that had a lasting impact on you? You talked about the program all through your autobiography.

HG: I like the question. No doubt I was attracted to scholars and writers who were not afraid to propose major

syntheses and to prepare convincing accounts of their conclusions. In *A Synthesizing Mind* I describe the impact that each of these persons had on my thinking, writing, work, and leading of projects.

It's important to point out that I had no personal relations with Richard Hofstadter or with Edmund Wilson. Their effects were wrought entirely through their writings. (Though in *A Synthesizing Mind*, I included one bit of correspondence with Edmund Wilson).

With respect to each of the other persons, all professors at Harvard (though in different departments and professional schools), I had a long-time relationship—several decades in some cases. And so they affected me in different and numerous ways.

As you note, in the Department in which I studied—an amalgam of the social sciences—Bruner and Erikson—each taught; Goodman was a philosopher, who founded Project Zero at the Graduate School of Education, and Geschwind was a neurologist in the Medical School.

Given a long and deep relation with each of these men, it's hard to pick out a single trait of their mentoring. It's more accurate to say that they awakened my interest in different topics or exhibited various skills: Erikson (observing and learning from children at different life stages in different cultures and taking on challenging biographies); Bruner (noting the many facets of cognition in many fields of endeavor and moving from one discipline to another); Nelson Goodman (the importance of writing carefully and choosing examples and counter-examples with great care); Norman Geschwind (gaining insights from damage to the brain, observing how to interview neurological patients, and how to explain their combination of strengths and deficits); Richard Hofstadter

and Edmund Wilson brilliant popular syntheses, Hofstadter in American history, Wilson in American (and European/Russian) literature.

I should also add that in my leadership of a research team—chiefly at Harvard Project Zero—I draw on the examples of both Jerome Bruner and Nelson Goodman.

Finally, I note that all of the mentors mentioned were men—indeed, white men. That reflects the time five decades ago when there were few women or persons of color on the faculties of major universities. I regret this state of affairs and wish that I had a wider exposure to female scholars as well as to scholars of different nationalities and demographics. In *A Synthesizing Mind*, I acknowledge the influence of philosopher Susanne Langer, anthropologist Margaret Mead, and historian Patricia Graham, each of whom taught me a great deal.

5. Synthesis of E.O. Wilson (2022)

RL: I applaud your effort in studying and writing about synthesis in your blogs in 2022. Among other things, you proposed an assessment, reviewed synthesis in historiography, and compared two synthesizers (E.O. Wilson and Edmund Wilson).

E.O. Wilson is an ambitious scholar, whose vision to explain sociology in terms of biology led to his controversial *Sociobiology* (1976). You have quoted him extensively on synthesis and the unification of knowledge from his *Consilience* (Wilson, 1998):

“The answer is clear: Synthesis. We are drowning in information, while starving for wisdom. The world henceforth will be run by synthesizers — people who are able to put together the right information at the right time, think critically about it, and make choices wisely.” (*Consilience*, 1998, p. 236)

“There is only one way to unite the great branches of learning and end the culture wars. It is to view the boundary between the scientific and literary cultures not as a territorial line but as a broad and mostly unexplored terrain awaiting cooperative entry from both sides.” (*Consilience*, 1998, p. 126)

While you admire Wilson and acknowledge his views on consilience, you are “skeptical that deep insights into the arts and humanities are likely to be obtained by mastery of science—even the whole gamut of science, from particle physics to astrophysics” (Blog 19/3/2022).

May I support your skepticism by a closer look at a simple sketch below on the explanation of music:

Subject	Discipline
Music	musicology
Mood / emotion	psychology
Dendrites / brain Structure and organization	neuroscience
Neurotransmitters	Brain chemistry
Molecules	molecular biology
Atoms	atomic physics
Quarks	

We may wish to understand or explain a masterful piece of music by the mood and emotion it invokes on the audience. This can be further explained by the brain structure, organization, and dynamic process with audio input. To go further, neurotransmitters are responsible for all the changes, which we can go further in the molecular, atomic, or even sub-atomic level. Now, will this grandiose explanation add to our human understanding?

I would argue that meaningful explanation may go only one-level down but cannot go further. In this case, we may explain musicology by psychology, but going two or more levels down may not be fruitful. To explain music by quarks is ridiculous and too far off the mark. It appears meaningless, or even absurd, to the understanding of humanity; yet Wilson is advocating it. “I will now attempt to trace a magician’s dream all the

way down to an atom” (*Consilience*, 1998, p. 75).

“Even the greatest works of art might be understood fundamentally with knowledge of the biologically evolved epigenetic results that guided them” (*Consilience*, 1998, p. 213). May I have your views?

HG: I love your question and the way that you describe your approach to the understanding of music—very much the way I might have done it. You have laid out, as a naturalist or taxonomist, the various elements and levels of analysis—from atomic particles and sub-particles, all the way “up” to the brain, the mind (including mood) and then the actual musical work itself, which can be the score, a particular performance, or the range of possible performances.

Each of these levels has a characteristic scholarly discipline—ranging from musical analysis to sub-atomic particles. Good scholars are usually able to extend the level of analysis in one direction or another—that’s what I tried to do with my theory of multiple intelligences. Presumably, music has a neural basis, it entails cognitive and emotional reactions and analyses, and these can sometimes inform what the musicologist, musical performer, or musical historian ponders and writes about. But like you, I think efforts to go all the way from atoms or molecules or neurons to Mozart or the Beatles are likely to be unsatisfactory—though if ambitious synthesizers want to try to bridge these numerous multifarious levels, they are welcome to try.

An idea, suggested by my wife Ellen Winner, is that we are addressing what one might call “vertical synthesis”—attempting to bring together several levels of analysis—, from neurons to Mozart, so to speak. My own efforts have been far more “horizontal”—for example, bringing together a variety of analyses to explain a historical period of phenomenon, or bringing together various insights from psychology, and attempting to create a more congruent overall picture of coherence or creativity.

One more thought. Soon, significant works of music will be produced via AI or deep learning programs. We can still enjoy—or not enjoy—the performance, but the other levels of analyses will seem like a category mistake—after all, the computer and the program don’t have neurons!

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The fate of synthesis in a computer-dominated world: that’s a challenge for the next generation of scholars, be they made of cells or circuits.