

Doubts About Critical Thinking: Reconsidering a 20th Century Educational Project in the 21st Century, or, the Light that Failed

Thank you, Fred, and thank you Flex Day Committee for inviting me to address my dear colleagues and coworkers today. I hope that you've all had plenty of coffee, and be advised that I have asked Security to lock the exits. My talk lasts 50 minutes; I timed it out reading aloud to my dog. He fell asleep.

When the Committee invited me to speak, they suggested that I say a few words about thinking. And I will, but I'm going to start with what the famous linguist Benjamin Lee Whorf said,

Actually, [he said] thinking is most mysterious and by far the greatest light upon that we have is thrown by the study of language. This study shows that the forms of a person's thoughts are controlled by inexorable laws of pattern of which he is unconscious And every language is a vast pattern-system, differing from others, in which are culturally ordained the forms and categories by which the personality not only communicates, but also analyzes nature, notices or neglects types of relationship and phenomena, channels his reasoning, and builds the house of his consciousness.

That last sentence was 49 words long. Research shows that after word 11, most people forget how the sentence began, and after word 13 most people can't understand a sentence at all.

The perceived relationship between language and thinking led to a familiar development in higher education when in 1980, California State University Chancellor Glenn Dumke issued Executive Order 338 that launched California's critical thinking movement. Business and industry leaders had complained that the C.S.U. system was graduating students who were unemployable because they couldn't think. In response, Dumke mandated formal instruction in critical thinking at all 19 C.S.U campuses, and the community colleges quickly followed suit.

How well is that movement doing after 35 years? In my view, not very well. In fact, one could say that the whole premise that critical thinking is teachable, in any way that might ultimately affect society in a positive way, is probably wrong. Whorf was writing in 1930s, and a lot has happened in the intervening years, including new theories of language and language acquisition, questions about consciousness raised by research into artificial intelligence, new discoveries in psychology and neuroscience, all of which throw more light on this mysterious thing called thinking. But critical thinking as an educational end still has not shown positive results despite being flogged for over three decades. CSU still graduates students who can't think and more of them. So does Harvard. Why? Initially, I believe there are several basic reasons.

For one, educational practitioners at all levels like to characterize what they do as involving "critical thinking." However, confusion still persists over what "critical thinking" means. For years, Monterey Peninsula College made it an official institutional goal to "promote . . . critical thinking across all areas and disciplines," but the college strenuously refused to define what it meant by "critical thinking." (Critical thinking in Yoga? Choir? Poetry? Succulent gardens?) The college's silence was ironic since being able to define what you mean by the words you employ is the first step in real critical thinking. Mandating pursuit of something you can't define leads on to chaos or farce. Vaclav Havel asked, "Isn't

just such a subtle abuse of the truth, and of language, the real beginning . . . of the misery of the world we live in?” Just this year, California’s Rialto Unified School District defended an essay assignment asking eighth graders to decide, after reading three printouts from websites, whether the Holocaust happened or not, on the grounds that the assignment developed “critical thinking.” I think not. And at a conference a few weeks ago, one community college teacher claimed he was teaching critical thinking by making his students play “social issue” computer games from the collection called “Games for Change.” But games designed to promote social change are neither games, nor a promotion of critical thinking. In an article earlier this month titled “Let’s Stop Trying to Teach Students Critical Thinking,” British Professor of Education Dennis Hayes says this:

When teachers talk about the need to be "critical" they often mean instead that students must "conform". It is often actually teaching students to be "critical" of their unacceptable ideas and adopt the right ones. Having to support multiculturalism and diversity are the most common of the "correct ideas" that everyone has to adopt. Professional programmes in education, nursing, social work and others often promote this sort of "criticism". It used to be called "indoctrination".

"Critical theories" are "uncritical theories". When some theory has the prefix "critical" it requires the uncritical acceptance of a certain political perspective. Critical theory, critical race theory, critical race philosophy, critical realism, critical reflective practice all explicitly have political aims.

So what does “critical thinking” mean? Another reason that the critical thinking movement failed is that critical thinking involves reasoning that reflects the Western rationalistic tradition. Unfortunately, that tradition is incompatible with other prevalent academic orthodoxies, such as social constructionism,

multiculturalism, anything-goes relativism, postmodernism, and tolerance so absolute that it leads to nihilism.

The philosopher John Searle has asserted that critical thinking is founded on a handful of epistemological assumptions that enable us to build a framework for determining whether a conclusion is legitimate or not. Those assumptions are basic and easy to understand. He says that to engage in critical thinking, one must grant that:

- “reality exists independently of our representations of it”;
- “language can be used to communicate meanings from speakers to hearers”;
- “truth is a matter of accuracy of representation”; and
- “knowledge is objective.”

All of Searle’s necessities would be hotly disputed or casually dismissed by many in academia, including our students. For example, about language, Jacques Derrida declared that “meaning is endlessly deferred”; Ludwig Wittgenstein considered language to be a cage, and, explaining postmodernism, Richard Tarnas says that “To even speak of subject and object as distinguishable entities is to presume more than can be known.”

How often do you hear someone say, “Everyone has their own truth”? If so, then the only truth is that there are many incommensurable truths, a paradox. Yet many academics claim that objectivity is impossible, an illusion or a mask for power. Another commonplace is that “we all live in our own reality.” I always encourage my students who believe that they live in their own reality to head down to the bus stop on Fremont, and when they see a bus coming, to step out in front of it. Reality will spectacularly if briefly intrude into their own personal reality. I lose more students that way.

My point is not that the world is limited to or exhausted by what counts as critical thinking, simply that unless you embrace Searle’s necessities, whatever you

are doing is not critical thinking, and the fiction you inhabit is likely to be crushed by indifferent reality. But neither is the world shaped like a syllogism. Much of what is not-critical thinking is what we find most valuable in our lives. The greatest compliment I ever received on a student evaluation was “When I’m in his class, I feel more alive.” I’m confident that my student wasn’t talking about my Venn diagrams. Joseph Campbell famously wrote:

People say that what we’re all seeking is a meaning for life. I don’t think that’s what we’re really seeking. I think that what we’re seeking is an experience of being alive, so that our life experiences on the purely physical plane will have resonances with our own innermost being and reality, so that we actually feel the rapture of being alive.

Poetry, art, music, athletics, creation, beauty, grief, joy, faith, what it feels like to be you, seeing a whole new world come into view every time you turn your head, all of these are irrelevant to critical thinking, logic, and evidence.

Let’s go back to 1980 one more time and sync up a soundtrack of Van Halen, Duran Duran, Boy George, and the Eurhythmics as we ask, how did Chancellor Dumke’s order define critical thinking? Executive Order 338 said that "Instruction in critical thinking is to be designed to achieve an understanding of the relationship of language to logic, which should lead to the ability to analyze, criticize, and advocate ideas, to reason inductively and deductively, and to reach factual or judgmental conclusions based on sound inferences drawn from unambiguous statements of knowledge or belief. The minimal competence to be expected at the successful conclusion of instruction in critical thinking should be the ability to distinguish fact from judgment, belief from knowledge, and skills in elementary inductive and deductive processes, including an understanding of the formal and informal fallacies of language and thought."

This is a pretty good formulation, affording me the opportunity to define for students the words “inference,” “judgment,” and “unambiguous.” However, I prefer William Graham Sumner’s definition from 1906: according to Sumner, critical thinking is “the examination of propositions of any kind which are offered for acceptance, in order to find out whether they correspond to reality or not.” Sumner’s definition includes Searle’s assertion that reality exists, and that it exists apart from ourselves, and that language (propositions) can be more, or less, congruent with reality. Sumner suggests that reason is competent to discriminate between what is reality and what is not. In critical thinking, as in Science, there is a “way things are” and there are “facts of the matter” and it is possible to “get it right.”

So, then, why do so many still get it so wrong so much of the time? Why, despite 35 years of trying, hasn’t the critical thinking movement ameliorated what we might call The Thinking Deficit or The Thinking Crisis? So far we have noted widespread confusion over what critical thinking means, the denial and rejection of real critical thinking by academics (other than scientists), and the inner emotional, aesthetic, and spiritual life irrelevant to critical thinking. But there is another reason that critical thinking stalled, a reason that troubles me more than the other reasons. Those are theoretically fixable or manageable. The fourth reason is not—I believe that the reason critical thinking has languished may be because we haven’t understood how our minds naturally work.

For example, one model for thinking suggests that we begin by gathering data about the world. Then we look for patterns in that data. To perceived patterns, we apply schema, hermeneutic frameworks that lead to interpretation of the patterned data. From those interpretations, we construct a model of the world, and finally, we behave towards the world based on our model.

Look at the opportunities for error!

- The data may be corrupt or incomplete.
- The perceived pattern may be an illusion or a projection (for example, critical thinking teaches that we often see what we expect to see). As the *Watchmen* character Rorschach says, “Existence is random. Has no pattern save what we imagine after staring at it for too long.”
- And our schema may be faulty or our interpretation may be self-serving or self-deceiving.
- If any of those errors occur, our model of the world will be flawed, and our behavior will get us blindsided by reality in the form of a Jazz bus.

One artificial intelligence researcher named Monica Anderson contends that “no useful models” can be made of systems or domains that she calls “bizarre.” By bizarre, she means systems which are unpredictable or chaotic, irreducible, ambiguous, or emergent. She says, “Many Scientific methods require correct input data for correct results. In the real world, input may be ambiguous, incomplete, and self-contradictory. Chaos and emergence can be found all around us, once you learn to recognize them. Intelligence in humans emerges from unintelligent neurons. Meaning of language emerges from mere words and letters.”

Anderson thinks that:

- The world is Bizarre. Any attempt to model the world, completely or in significant part, will fail. Models cannot be made of the global economy, or stock markets. (3) Any partial model will be bleeding at the edges where it was cut loose from its context.
- Life is Bizarre. All life sciences deal with the complexity of life. Organisms, human physiology, drug design and drug interactions cannot be completely modeled. If you take a frog apart, it is no longer alive.

- The Mind is Bizarre. The Brain is too complex to be modeled. Intelligence is Bizarre.
- Language is Bizarre. All attempts to model human languages using grammars etc. to date have failed and will continue to fail. The meaning of language cannot be retrieved from a grammatical analysis.

If life, the world, the mind, and language are all bizarre, the possibility for critical thinking to make a functioning model of reality is remote.

To make matters even worse, many normal human cognitive states are constantly at war with critical thinking, even while staying below the threshold of conscious awareness. For example, you may remember Nassim Taleb's 2007 book, *The Black Swan*. For Taleb, a black swan is a unique, unpredictable, catastrophic event, like The Great War, 9/11, and the stock market crash in 2008. Taleb says, a Black Swan is an event with the following three attributes:

First, it is an outlier, as it lies outside the realm of regular expectations, because nothing in the past can convincingly point to its possibility. Second, it carries an extreme impact. Third, in spite of its outlier status, human nature makes us concoct explanations for its [sic] occurrence after the fact, making it [seem] explainable and predictable.

This last is most significant for our discussion. Our natural tendency is to believe that things happen in regular, comprehensible, and predictable ways. But even when abnormal things happen, we create the delusion that we should have known because we believe we could have known. We are wrong, and this confident and chronocentric delusion that we can predict makes us even more fragile when the next outlier comes barreling out of nowhere. Milan Kundera wrote that "Man proceeds in a fog. But when he looks back to judge people of the past, he sees no fog on their path. From his present, which was their faraway future,

their path looks perfectly clear to him, good visibility all the way. Looking back, he sees the path, he sees the people proceeding, he sees their mistakes, but not the fog." So our natural proclivity blinds us to the uncomfortable, sometimes invisible, and occasionally random reality that critical thinking seeks unsuccessfully to represent.

Furthermore, a lot of brain activity that is not critical thinking is based on fear. The opposite of critical thinking is certainty (something we often encounter in our students) and certainty is the child of fear. The motto of my critical thinking class is "True education should be like a gun to your head." My literary allusion is to Flannery O'Connor's famous short story, "A Good Man Is Hard to Find." At the end of the story, in a wilderness clearing, an escaped murderer who calls himself The Misfit confronts a superficial, platitudinous grandmother. Facing his pistol, she experiences a moment of true clarity and sympathy. She reaches out tenderly to touch him whereupon he shoots her three times, and then pronounces his verdict: "She would of been a good woman if it had been somebody there to shoot her every minute of her life." Mortal danger was the catalyst for epiphany. Similarly, real critical thinking always threatens to dislodge preconceived notions and to demystify the comforting fictions that guide our lives. And this can be frightening.

Not long ago we heard teachers asking their students at the end of each class, "Was this a safe place today?" The critical thinking classroom isn't a safe place; it's a dangerous place. Students may feel that their egos, their very selves, are threatened. For this reason, many students naturally engage in what Richard Paul calls "egocentric thinking" instead of critical thinking. Paul originally conceived of egocentric thinking as occurring in five cases. He says,

As humans we live with the unrealistic but confident sense that we have fundamentally figured out the way things actually are, and that we have done

this objectively. We naturally believe in our intuitive perceptions—however inaccurate. Instead of using intellectual standards in thinking, we often use self-centered psychological (rather than intellectual) standards to determine what to believe and what to reject. Here are the most commonly used psychological standards in human thinking.

"IT'S TRUE BECAUSE I BELIEVE IT IS TRUE." Paul calls this "innate **egocentrism.**" No less a personage than Cary Nelson, for many years president of the American Association of University Professors, once asserted in my presence that he teaches that all gender differences are merely social constructs "because I believe that they are." That is, they are part of his personal reality.

"IT'S TRUE BECAUSE I HAVE ALWAYS BELIEVED IT IS TRUE."
Duration of belief, of course, is irrelevant to facticity or irrefutability.

"IT'S TRUE BECAUSE WE BELIEVE IT IS TRUE." I assume that the dominant beliefs within the groups to which I belong are true because we all share the belief.

"IT'S TRUE BECAUSE IT IS IN MY SELF INTEREST TO BELIEVE IT IT IS TRUE." I believe in me or my group getting more power, money, or personal advantage regardless my beliefs are true.

"IT'S TRUE BECAUSE I WANT IT TO BE TRUE."

And in this search for the comfort of certainty, the ego involved exerts tremendous effort at the self-deception known as confirmation bias, editing out anything that does not confirm the belief. The result is someone whom Eric Hoffer called a “true believer,” a person whose certainty is impervious to any and all evidence to the contrary. We are certainly familiar with mass movements of true believers who wreak havoc through actions based on hysterical delusions, from belief in witches to the recovered memory movement. It’s worth recalling that the American Founders decided that a republic was preferable to direct democracy because of the excesses that result from what Charles Mackay called “the madness of crowds.”

Given all this, it begins to look as though actual critical thinking is, as William S. Burroughs once described language, a “virus from outer space,” something external and mismatched with other human tendencies. Critical thinking itself has a dual nature being both a skill set and a mindset. One can have the knowledge to name every logical fallacy but fail to recognize that she herself is committing one. To think critically seems in some ways unnatural or contrary.

This sensation is understandable because in our own cognitive development, from child to adult, we struggle to attain critical thinking, and then eventually negate and discard it. Here I call on Lev Vygotsky and his Canadian acolyte Kieran Egan. In *The Educated Mind*, Egan proposed five human developmental cognitive states. As newborns, we exist in what he calls the **Somatic State** which is pre-linguistic, kinesthetic, one where we experience the world physically as an undivided continuum. The “naming of parts” has not yet occurred—the world is experienced as physical sensation, not as names and categories.

As the language centers in the brain absorb the local vocabulary and rules of grammar, we enter the **Mythic State**, a process of individuation through binary oppositions (me/you, good/evil, self/other). By elementary school, we have begun to gain control over the world by seeing oppositions (hot/cold, wet/dry).

Metaphoric thinking develops, there is the first use of narratives, and the child's question is binary "which side are we on?" and "which one is our team?" By junior high school, **Romantic State** consumes the Mythic State. "Romantic" means exploring the limits of knowing, doing, being; with heroism, transcendence, and human emotion being primary values. Walter Ong described this state as "preoccupation with otherness, with what is different, remote, mysterious, inaccessible, exotic, or bizarre" (Walter Ong, *Rhetoric, Romance, and Technology*). In the last years of high school, many students attain the **Philosophical State**, what we would call critical thinking, featuring ideas from the Enlightenment, logic, rationalism, and the scientific method. Egan says

Philosophic thinking exercises and develops the capacity to see patterns, search for the recurrent, perceive processes, look for essences, and make ordering principles and theories [but] without the self-conscious support of educational institutions, particularly colleges and universities, **Philosophic understanding [in other words, critical thinking] is likely to develop only fitfully and partially; the media and the general level of public discourse in the West do not provide the kind of community that can adequately sustain it** [my emphasis].

The final stage of cognitive development is the **Ironic Stage**, familiar to us from postmodernism and popular culture. Egan claims that

The reflexiveness of irony ensures that when some features of the world are represented in story forms or in terms of oppositions we recognize these as imposed on the world by our minds; we know the world is not story shaped. These structures are imposed to make events meaningful in particular ways, determining how we feel about them. Having dispelled the contingent story structures we are free to make up new ones which we know don't derive from reality but which are liberating.

So here we have arrived at a cognitive state which involves telling stories disconnected from reality that express what we believe because we want it to be true. Watch out for that oncoming bus. Educationally, Egan says that materials must be suited to a class's cognitive state, that it is pointless to use Philosophic materials on Mythic students, or Romantic materials on Ironic students.

If irony is in fact the last cognitive stage, we can find plenty of evidence for it in the modern world, from Stephen Colbert's "truthiness" to hipsterism to Tweet, Instagram, and comment thread witticisms. Irony thrives because of what Richard Tarnas characterizes as "the awareness of reality as being at once multiple, local and temporal, and without demonstrable foundation." In the 1950s, this lack of foundation was called the absurdity of the human condition, that human life is apparently meaningless. Today, I suppose, we would call human existence ironic. Once irony displaces reason, critical thinking is effectively silenced and life is reduced to an episode of *The Simpsons*.

So it appears that the natural development and function of the brain may be the biggest obstacle of all to creating a mental map congruent with the territory of reality. The British author J.G. Ballard once referred to our model of "conventional reality" as "a largely artificial construct which serves the limited ambitions of our central nervous systems. Huge arrays of dampers suppress those perceptions that confuse or unsettle the central nervous system" Our central nervous system is not on a quest for truth—it just wants to survive the harsh light of consciousness and go back to sleep. The Nobel Prize winning psychologist Daniel Kahneman puts more scientifically:

In the current view of how associative memory works, a great deal happens at once. An idea that has been activated does not merely evoke one other idea. It activates many ideas, which in turn activate others. Furthermore, only a few of the activated ideas will register in consciousness; most of the

work of associative thinking is silent, hidden from our conscious selves. The notion that we have limited access to the workings of our minds is difficult to accept because, naturally, it is alien to our experience, but it is true: you know far less about yourself than you feel you do.

Just how little we know about ourselves has been illuminated by Dr. Kahneman in his 2011 book *Thinking, Fast and Slow*. There he describes our minds as functioning in alternating states called System One and System Two. System One: operates automatically and quickly, with little or no effort and no sense of voluntary control. It practices what Kahneman called “associative thinking.”

System One is how we originate most of our thoughts most of the time, and thus System One produces most of the content of our mental lives. Kahneman says
The main function of System One is to maintain and update a model of your personal world, which represents what is normal in it. The model is constructed by associations that link ideas of circumstances, events, actions, and outcomes that co-occur with some regularity, either at the same time or within a relatively short interval. As these links are formed and strengthened, the pattern of associated ideas comes to represent the structure of events in your life, and it determines your interpretation of the present as well as your expectations of the future (71).

We are completely unconscious of this continuous associating and model making. That’s not all. Unlike critical thinking, Kahneman says “System One is not prone to doubt. It suppresses ambiguity and spontaneously constructs stories that are as coherent as possible” and “The measure of success for System One is the coherence of the story it manages to create. The amount and quality of the data on which the story is based are largely irrelevant. When information is scarce, which is a common occurrence, System One operates as a machine for jumping to conclusions.”

System One is not reflective. It's fast, automatic, frequent, emotional, stereotypic, subconscious. System One likes narratives or story structures; it trusts sources that it finds appealing; System One likes simple fonts. System One believes things that are repeated and is likely to believe things that rhyme—Kahneman says that “woes unite foes” is believed more than “woes unite enemies;” System One would believe that there is a “war on women” just because of the alliteration, and Johnnie Cochran knew exactly what he was doing when he told the O.J. Simpson jurors that, “If [the glove] doesn't fit, you must acquit.” And they did.

System Two, on the other hand, allocates mental energy to difficult activities such as complex computations. The operations of System Two are often associated with the subjective experience of agency, choice, and concentration. System Two is what we recognize as critical thinking.

System Two is reflective, slow, diligent, easily tired, infrequent, logical, calculating, conscious. System Two requires attention. Kahneman says that when you hear $2+2$, System One automatically presents 4 to the mind. You can't not think it. But when asked 17×24 , System Two must shove System One aside and actually perform multiplication operations.

Kahneman's theory elegantly explains why teaching critical thinking didn't work. It's because we naturally spend most of our lives reacting to the world quickly but in ways that often distort or misrepresent reality, ***and we like it that way***. Think of the implications for teaching or practicing critical thinking! For one, he suggests, as others have before him (I'm thinking particularly of Julian Jaynes in *The Origin of Consciousness in the Breakdown of the Bicameral Mind*) we spend most of our lives in a non-reflective state, dealing with the world quickly but in ways that often distort or misrepresent reality. Kahneman calls some of these ways “anchoring,” “availability,” “substitution,” “optimism and loss aversion,”

“framing,” and “sunk costs.” All these System One characteristics lead on to error. Dr. Kahneman says,

For most of us, most of the time, the maintenance of a coherent train of thought and the occasional engagement in effortful thinking also require self-control. . . . I suspect that frequent switching of tasks and speeded-up mental work are not intrinsically pleasurable, and that people avoid them when possible. This is how the law of least effort comes to be a law. Even in the absence of time pressure, maintaining a coherent train of thought requires discipline (40).

I personally find it disturbing that the ability to exercise the self-control and discipline that System Two requires seems to be evident in children by age 4. Self-control at 3 or 4 has been found to predict adult success at tasks which involve reasoning and critical thinking, such as academic success. I experience this proposition as a kind of ominous, genetic predestination.

About the critical thinking necessity of “maintaining a coherent train of thought,” I would remind you of Kurt Vonnegut’s classic, satirical short story “Harrison Bergeron” which depicts a world in which everyone is finally equal. People who are strong must wear heavy weights so they are not stronger than weak people; better looking people must wear clown noses; graceful ballerinas are draped in lead so that they are no better than uncoordinated and obese dancers; and people who are more intelligent must wear a speaker in their ear that screams at them every few seconds so that they cannot put a coherent train of thought together. Thus is a docile, narcotized, controlled society achieved. It was Cory Doctorow who described our friend the Internet as just such “an ecosystem of interruption technologies.”

But don’t blame the Internet. Many, many people, Kahneman says, “find cognitive effort at least mildly unpleasant and avoid it as much as possible.” That

is, critical thinking is hard, demanding work, and, he claims, System Two is “lazy.” But that leaves System One in the driver’s seat, and System One likes stories and believes something with characters, conflict, and resolution more readily than the unvarnished or objective truth. However, as Egan said, the world is not story-shaped. System One makes us vulnerable to those who know that our usual state is one that likes stories. You may recall that President Obama expressed as the one regret of his first term that he did not tell a better story. The whole political approach of narratives, talking points, and slogans is aimed squarely at influencing voters by engaging their System One.

That’s politics. In education, Kahneman’s ideas are also disturbing. If students are primarily in System One, they are predisposed to learn compelling but inaccurate material. How exactly does the teacher mentally activate the System Two of students, **a state that they naturally and physically don’t want to be in?** A lecture such as this one, aimed at the audience learning something complicated, employs and targets System Two. But if the audience is in System One, they will prefer a PowerPoint with funny pictures, bullet points, jokes, rhymes, and anecdotes. They are, in a sense, not fully present, existing in a test pattern state beyond the reach of System Two.

In English class, can someone write an argumentative essay using System One?

No, but they try.

In Speech class, can someone using System Two persuade someone who is using System One?

No, but they try.

Kahneman, a psychologist, even concludes that “teaching psychology is mostly a waste of time” (170).

Here is an even bigger question. Some people now ask whether those who spend most of their time in System One are competent to make decisions at all? At a conference recently, I heard someone argue that if Kahneman is right, if the actions we take most of the time are in fact both automatic and non-rational, then we need to be taken care of by the State. That is, in all areas, the State should manipulate and influence our System One to “do the right thing” because we cannot be trusted to make rational, decisions even about our own welfare. Cass Sunstein, Harvard professor and one of President Obama’s appointees, has already gestured in that direction with his 2008 book, *Nudge*. Of course, what the “right thing” is remains a perennial matter of profound disagreement. I recall that it was William F. Buckley, Jr. who said that he “would rather be governed by the first 2,000 people in the Boston telephone directory than by the 2,000 people on the faculty of Harvard University.” The point of the critical thinking movement was to develop autonomy and agency in students. Granted, it was also to produce more effective workers but the road was not supposed to lead to what Jaron Lanier calls “the hive mind.” Chancellor Dumke certainly knew that the stability of a system is a consequence of its heterogeneity, that individuals making millions of thoughtful, well-considered, evidence-based, freely chosen decisions was the goal, as it was the goal of the Founding Fathers. The evidence that this has not happened is everywhere around us, in all walks of life.

The personal consequences of critical thinking’s failure are also troubling. The acronym of my critical thinking class is JFY which stands for “Just effing you.” And for the pleasure of your System Ones, here is a little story that explains why. In the early 1970s, there was a sort of religious cult in San Diego called Heaven’s Gate, run by Herf Applewhite and his wife, Bonnie. Bonnie died in 1985. Twelve years later, in 1997, San Diego police discovered the bodies of 39 cult members, including Herf Applewhite, who had committed suicide, all wearing

identical black clothing and Nikes. Applewhite had convinced 38 people to drink cyanide and arsenic on the grounds that his deceased wife was returning to Earth on a flying saucer hiding behind the comet Hale Bop, a spacecraft that would take them to a higher plane of existence. He had previously convinced several of the men to castrate themselves to prevent undesirable thoughts of a sensual nature. The cult had many rules—one of the main ones forbade each member from “Trusting my own judgment - or using my own mind.” What I tell my students about critical thinking is this: when the next Herf Applewhite comes to your door, **and he will come**, there will be just effing you, using your own mind, to decide whether to drink the cyanide and fly away to the comet.

In the end, critical thinking produces autonomy and agency but only for those who want that and who can handle it. Learning the skill set in no way guarantees it will ever be put to use, since the mind does not enjoy the rigors of System Two. We are naturally fearful, self-deceived, and vulnerable to the temptations of our auto-pilot, System One: speed, simplicity, stories. Trying to teach people to think critically is probably futile.

If you doubt Kahneman, I would ask you right now what you remember from my talk today? Do you remember Richard Paul’s categories of egocentric thinking, or the title of Julian Jaynes’s book, or Kieran Egan’s stages of cognitive development? Or do you remember students hit by buses, some guy shooting a grandmother, ballerinas in chains, and a suicide cult involving flying saucers? I would argue that Kahneman seems descriptive of a reality where System One is in the saddle. Those who can manipulate System One hold the key to manipulating our decisions, and what chance does critical thinking have when academia, culture, and the brain itself find critical thinking a nuisance, an irritation, and an obstacle?

I want to thank you for your kind attention during my gloomy little talk today. And I do apologize for exhausting your System Two but maybe you learned one or two things you didn't already know about thinking. Of course, I am mindful of Kahneman's observation that "Sometimes scientific progress leaves us more puzzled than we were before" and Sheridan Blau's comment that "Confusion frequently represents an advanced state of understanding. Hence, in the teaching of literature and perhaps in all teaching the job of the teacher is not to ensure that students are never confused, but to promote the confusion that represents an advanced state of understanding and that is also the key to most learning and all critical thinking." Uh, oh—that sentence had 50 words in it. Still, if you are confused about how we can get students and teachers thinking better, my talk will have served its purpose because confusion in this area is entirely appropriate.

At the very least, do me one favor: when the next Herf Applewhite comes knocking (and he will come, in one guise or another), please . . . don't answer the door.

Keynote Address, Flex Day, Monterey Peninsula College, August 21, 2014 by David Clemens.