

John Plotz: From Brandeis University, welcome to Recall This Book where we assemble scholars and writers from different disciplines to make sense of contemporary issues, problems, and events. Today, as usual, your hosts are me, John Plotz, and to my right, Victor Turner Prize winning author, Elizabeth Ferry, golden anthropologist. Hello, Elizabeth.

Elizabeth Ferry: Hello.

John Plotz: We're joined today on my left by Albion Lawrence, string theorist, quantum theorist and also science fiction aficionado. So welcome, Albion.

Albion Lawrence: Hello.

John Plotz: Good to have you. So, our topic today is one that I have brooded on for years and I want to start with a full disclosure, that for half a century my dad was a bench scientist and my mom was an English professor, so it's not surprising that I would brood on this topic. And in fact, Albion, Elizabeth, and I have been chewing on it for months now. Basically at its root the question is why do scientists seem to do collaboration and teamwork better than other kinds of scholars and academics?

John Plotz: Now, I know there are a thousand ways to dissect that question. After all, some humanists do work in collaborative teams, especially in Scandinavia. And many scientists, especially mathematicians and physicists, like say string theorists, do their best work alone. I don't know, Albion, would you say no? Oh my God, Albion his violently shaking his head. Okay, so to be discussed.

Elizabeth Ferry: It's a podcast.

John Plotz: Okay, so maybe it's not true.

Albion Lawrence: Wasn't sure when I was supposed to dig in.

John Plotz: That was a silent scream.

Albion Lawrence: No, no, no. It was a silent scream, yes.

John Plotz: But in the main scientists, especially lab scientists, seem to have some special sauce going on when it comes to thinking deep thoughts in a semi-detached way and then bringing them back into contact with others who will challenge them, push them, and bring those thoughts somewhere unexpected. So, the basis of our conversation is something like “Are feeble humanists and potentially feeble social scientists, I don't know, simply missing the boat?” Or is there something else? Something about the thinking that we do, a kind of disciplinary specificity that makes more doses of solitude, or maybe even secrecy, a necessity in some places in the academy and not in others. And where do social scientists fit in this triangulation or access?

Elizabeth Ferry: It's a perennial problem.

John Plotz: Is it a perennial problem? And also more cynically, and I think we're going to have a lot to say about this, is there a reason to be suspicious of various discourses of team building or group collaboration that are making their way now out of Silicon Valley and out of corporate America into our universities? And the answer, of course, is “No. There's nothing to fear. No problem. There's nothing to see here.” So, that's our discussion today and we're going to dive right in with Albion introducing the text that we have chosen to give us a nice chewy example of when scientific collaboration works well.

John Plotz: So Albion, what book did you suggest and why is it a good place to start?

Albion Lawrence: So, the book I suggested was a Richard Rhodes book, "The Making of the Atomic Bomb." This is a big book. It's a combination of several things. First and foremost, it's a history of early 20th century science, physics, quantum mechanics, and nuclear physics combined with the history of the making of the atomic bomb, which forms its title. It's a combination of individual biography, of individual science,

sort of a group or sort of social biography of the community of theoretical physicists in Western Europe and the United States and to a lesser degree Japan-

John Plotz: Yeah, collective biography is a good way of thinking about it. I agree. It's very character-focused and yet it's like a cast of thousands.

Albion Lawrence: It works on various scales. It's of course combined with the history of the time because obviously that is important to understand the making of the atomic bomb, but also it's important and it then feeds back and informs the motivations of each individual scientist many of whom were Jewish, many of whom were-

Elizabeth Ferry: There's science writing.

Albion Lawrence: And I was going to say one of the reasons that this book is admired amongst physicists is as science writing it's superb. Richard Rhodes does not have, as I understand it, any science background, but he gets it right in a way many books written by scientists often don't-

John Plotz: Yeah, and also just to push the point about the temporality of it a little bit. It starts off with Rutherford and the discovery of the nature of the atom-

Albion Lawrence: That's right.

John Plotz: Which is the 1890s or something.

Albion Lawrence: That's right. That's right.

John Plotz: So, it goes back well before Hiroshima, but then it does this amazing thing of accelerating as the kind of crucial years and the months go on.

Elizabeth Ferry: Right.

Albion Lawrence: Exactly, and then really compressed.

John Plotz: Yeah, it's compressed exactly.

Albion Lawrence: And then it expands out and expands out in focus.

John Plotz: Much like the atom bomb itself....

Albion Lawrence: Right. So, in terms of our conversation, I thought it was a really good view of science as a collective enterprise, which I think it actually is. It talks a lot about its nature in the early 20th century, a style, which is true in some areas of physics of these sort of networks of collaborators, of advising mentor relationships, of sort of centers of training and research and constant interaction through conferences, through visits to different institutions. And then you see it develop into a much more organized endeavor through the Manhattan project. And that style of physics or that style of science of course continues in particle physics and particularly through what's called Big Science after the war.

John Plotz: Right.

Albion Lawrence: The rise of large experiments, which require complex accelerators, large numbers of people building them. It's almost an industrial enterprise in itself.

John Plotz: So, it's like if you build it, they will come. The scientists come to cluster around large pieces of equipment.

Albion Lawrence: Right. Right. And it's a large number of scientists that do it because it just takes that many scientists to do it. It requires a whole infrastructure of technical staff.

John Plotz: Right.

Elizabeth Ferry: Right.

John Plotz: But can I just jump to the chase, Albion? We can go back to the... You violently shook your head when I said mathematicians and string theorists can go it alone. And I

just want to understand because as a string theorist you don't need any equipment at all, right?

Albion Lawrence: No.

John Plotz: I mean all your equipment is up in your head.

Albion Lawrence: I think the equipment is only part of course of the driving force. Any laboratory, of course, needs and probably always did need its assistants and so forth.

John Plotz: Right.

Albion Lawrence: And certainly those experiments have gotten more complex and to launch a major accelerator experiment or an underground lab or a satellite just takes a huge number of people. But many of the people discussed in this book are theorists and nonetheless, even at that level, you already saw a high degree of interaction between theorists, collaborations between theorists. In string theory-

John Plotz: Yep.

Albion Lawrence: It's relatively rare for people to write solo papers. Relatively, the tens of percents or something I would guess. But I write very few papers by myself and I think that's the norm.

Elizabeth Ferry: I mean one of the things that I think is really compelling about the book, too, is the way, it's not just a matter of different expertise or different kinds of labs that have different sorts of infrastructures-

Albion Lawrence: Right.

Elizabeth Ferry: But you see people sort of batting ideas back and forth a lot and getting stuck on something-

Albion Lawrence: Right.

Elizabeth Ferry: And somebody else has a little something to nudge and that happens in every sphere of inquiry.

Albion Lawrence: Right.

Elizabeth Ferry: But the way in which it's kind of institutionalized within the sciences seems different.

Albion Lawrence: That's right. You could really see that and probably you could see, and that's why the personal biographical focus is nice because you can see how it worked at the level of individual ideas.

John Plotz: Maybe just to give our listeners a flavor, because I think everyone should read this book. I was spellbound from the beginning to the end, but I just went through picking out random sentences and I will just tell you the first two sentences I picked out were like on page 83. "Then Bohr arrived and the question they discussed was," and then on page 284, "As soon as we entered the office Bohr rushed to the blackboard telling me, 'Now listen, I have it.' And he started scribbling still without speaking a word and drawing graphs on the blackboard. He broke several pieces of chalk in the process."

John Plotz: So I realize Bohr is the hero in both of those. But you know, there's that image of just... Right? I mean there's no technology, this is not about Fermi making a reactor, this is just about people rushing into the room and scribbling-

Albion Lawrence: Right.

John Plotz: And that's what they need to do is scribble in the presence of someone else.

Albion Lawrence: Right. That's right. And talk things over. People also have, it's a sufficiently complex subject that people coming in with different styles of doing work, different sort of mathematical tool kits are important in any given project and drive things forward.

John Plotz: So not to pick on the perverse end of this side of things, but the Manhattan Project is, I mean it's a bomb-making project.

Albion Lawrence: Yeah, yes.

John Plotz: So, we obviously could spend all day talking about the political consequences. I'm not suggesting necessarily we need to think about like, you know, *what hath man wrought*, but there's a specific turn where people like Bohr and also this guy whose name I can't say. Szalay is that his name? Szilard?

Albion Lawrence: Szilard I think.

John Plotz: Yeah, he's a Hungarian. He's a Hungarian working in America and Fermi realized that the consequences of what they're now working on is that what they call the "Republic of Science" (I think that's the Polanyi model of like a pure openness) needs to be turned into a site of secrecy. Is that like an anomaly? Like that's just a one-off because they were making an atom bomb? Or is that a longstanding story in science of the 20th and 21st century, that secrecy and openness are always going to be in tension?

Albion Lawrence: This is a super interesting question. So, certainly it was there in the Manhattan project and part of the tension was, in addition to the ideological component, was of course, on the one hand, by nature you probably wanted this to be secret, you didn't want the Germans to know about it.

John Plotz: Right.

Albion Lawrence: Or if you were anti-communist you didn't want the Soviets to know about it.

John Plotz: Right.

Albion Lawrence: On the other hand, there was a compelling argument that for these kinds of things to develop you need as much openness as possible. So, there was a lot of argument within

the sort of envelope of secrecy, how compartmentalized things were.

John Plotz: Right.

Albion Lawrence: And that phrase compartmentalization was used.

John Plotz: And there's the wonderful debate about whether all the people at Los Alamos are going to be conscripted into the army-

Albion Lawrence: Right. Exactly. Exactly.

John Plotz: And initially they are, but then maybe they're going to push it off a little bit and...

Albion Lawrence: So, another example comes to mind later. This involvement of basic scientists and military work continued and continues. One example, is this group called the *Jasons* who are (I don't know their current status, it's actually a bit up in the air currently) but they are a group of mostly physicists originally who would go to meet someplace in the summer, I think down in San Diego, advise the military, work on very specific problems. Out of this came-

Elizabeth Ferry: Is that why they're called the Jason's, like July, August, September?

John Plotz: Well done.

Albion Lawrence: That was a good book on this by Ann Finkbeiner and I think that was one of the theories, but I don't remember if that was the actual reason-

Elizabeth Ferry: Right. Interesting.

Albion Lawrence: But the reasons for this name are discussed. And ideas were developed there that were clearly of use to basic science such as what's called adaptive optics. It's a way of adjusting a telescope on the ground to deal with atmospheric corrections, developed, in part, by I think by Freeman Dyson

in the 60's and 70's, and then eventually redeveloped by astronomers I think in the 90's. It's been a while since I've read this book.

Albion Lawrence: It was when the astronomers found out that the military had been setting this forever they were quite furious that they lost out on this opportunity. But I would also say that there were other reasons for secrecy, and this might get into these other team building questions, which is of course corporate secrecy. If you have-

John Plotz: That's where I was going, yeah.

Albion Lawrence: Some sort of corporate research, often they'll want to protect those secrets and that seems to run against the model by which we scientists think we've worked best, which is fully out in the open.

Elizabeth Ferry: Right and also the kind of ethics of "can knowledge be proprietary?"

Albion Lawrence: Right. And so, then there's a question of what structure supports what. So, the gold standard of corporate research in some sense was Bell Labs where a certain amount of openness did prevail. That had a lot to do with the nature of the labs and the structure of Bell Labs. It was sort of a regulated or controlled monopoly, didn't worry about competitors and government had some pressure to bear, could bring some pressure to bear on Bell Labs in terms of how it was used.

John Plotz: I heartily recommend James Gleick's book "The Information" on that-

Albion Lawrence: I should read this.

John Plotz: About Claude Shannon and-

Albion Lawrence: John Gardner's book "The Idea Factory" is superb as well.

John Plotz: Yeah, yeah, yeah.

Albion Lawrence: So, this was another model and I think that model for various reasons, there are still labs like that. I think Microsoft runs a physical research lab like that. There were a number of labs that operate like that.

John Plotz: Does Google not claim to run a lab like that? I thought they did, but then or do they just straightforwardly say that what they do is proprietary and...

Albion Lawrence: I should know and don't.

John Plotz: I mean I love to have like a blue skies division, but it may be that it's blue skies, but only within like within the prison that is google-

Elizabeth Ferry: Only vertically.

John Plotz: Vertical blue sky-

Albion Lawrence: I should know the answer to this but I don't.

John Plotz: Nice high walls, but a blue sky overhead.

Elizabeth Ferry: Exactly.

John Plotz: Exactly.

Albion Lawrence: I mean some of their work does good. The work that people do does get published. I have a friend who works at Facebook, who's publishing pure science articles. So-

John Plotz: Yeah.

Albion Lawrence: Eventually this recent announcement of their quote unquote quantum supremacy is supposed to-

John Plotz: Yeah that's right.

Albion Lawrence: The paper's been leaked.

John Plotz: Interesting.

Albion Lawrence: That that level of secrecy is normal. We even see it in this book, but Bohr wanting to wait to give Meitner and- was it Meitner and Frisch?

John Plotz: Yeah.

Albion Lawrence: Time to develop to publish a certain work to give them enough credibility so they'd get out.

John Plotz: Yeah. Yeah.

Elizabeth Ferry: Yeah.

John Plotz: That's very interesting.

Albion Lawrence: And so, clearly those basic sort of micro level of secrecy-

Elizabeth Ferry: Right?

Albion Lawrence: Competition was always there-

Elizabeth Ferry: Even in the double helix. There's that-

John Plotz: Yeah.

Albion Lawrence: Right, But that's less a... And that's always a balance and you don't want to reveal your ideas, especially, you don't want to reveal your ideas too early if you think something's going to go off.

John Plotz: Right. There's this whole tradition of like announcing, making announcements in code, right?

Albion Lawrence: Right.

John Plotz: Like people will put a newspaper ad in, which is a coded claim to priority.

Albion Lawrence: Right.

John Plotz: So, right. So, secrecy has been there in the beginning.

Elizabeth Ferry: So, hold on. So, if they do that, if someone does that, then it's kind of professional courtesy, not like I'm putting a little flag in this and you shouldn't now publish? It's the-

John Plotz: Well no, it's like the one I remember, I think this is the discovery of Neptune. Do anybody know the details about this? But it's like the point was they didn't want to reveal it yet, but they wanted to be able to go back and say-

Elizabeth Ferry: Oh, yeah.

John Plotz: If you look at the March 20th, 1827 edition of the *Times*.

Elizabeth Ferry: I already said that.

John Plotz: Yeah, I already said that. It's very... So, in other words like I love the Polanyi model of the openness. I liked how you said it Albion, that we scientists like to think that we're operating under, but obviously it's always had like gray zones.

Albion Lawrence: And how open you can be depends on your status in the field. It will depend on what fierce competition for scarce resources, fields where there are more people than problems versus more problems than people.

Elizabeth Ferry: But, gray zones is not the same thing as a different kind of infrastructure, right?

Albion Lawrence: Yeah. Yeah.

John Plotz: Yeah. That's true.

Albion Lawrence: I think the basic infrastructure is very open-and collaboration and discussion-

John Plotz: Okay. Can I just summarize where we are today? Because I want to make sure that we get to the question of the disciplinary difference, which I'm sure Elizabeth and I both

have things to say about as being outside. So, what I understand you're saying Albion is that you're actually like, you're doubling down on the notion of the space of openness and collaboration. Like you're affirming that that is kind of woven into the fabric of-

Albion Lawrence: Yes.

John Plotz: A lot of what happens when we do science. So, now we're going to talk. We're going to eventually get to the question of whether the humanities and social sciences, what like what happened that we don't have that and then, but we're going to do it by way of the topic you just opened Albion, which is like the team building and corporate kind of propagandistic, let's say, accounts of like how this model of collaboration can be revenue-ized or prioritized.

John Plotz: So, Bell labs is interesting example, but I think your point is great. Like they had a monopoly already-

Albion Lawrence: Right.

John Plotz: Which enabled them to not worry so much about like being scooped or-

Albion Lawrence: Right. Right.

John Plotz: Yeah. Yeah.

Albion Lawrence: Okay.

John Plotz: Right. I mean, one of the things that I feel like we experience in the humanities is this kind of... I don't think the right word is science-ization but maybe it's like the impetus to be *scientistic*. That in the humanities people are told your grants will, you know, will flow more freely if only you could argue like scientists and think like scientists more.

Elizabeth Ferry: Really?

John Plotz: And so that's... Yeah, that's a conditioning pressure now on how the humanities work. And again, like I mean as I said, as a child of an English professor and a bench scientist, like I love both sides of that form of knowledge. You know, I'm all for it.

Elizabeth Ferry: You better say you do.

John Plotz: Assuming they listen. But, I do worry sometimes that what the humanities... There's a distorting lens there, where the humanities... If the humanities... Like I want the humanities to figure out ways to be more like science at its best without just faking it in order to like basically appeal. Like I don't want us to put on....

Elizabeth Ferry: Like adopting the rhetoric.

John Plotz: Yeah. I don't want us to put on the rhetoric of science, which is, I definitely think what those Europeans do. I mean, I don't mean to slam the Scandinavian grant-giving institutions, but I do think this whole notion that you, what you really want is to be part of a \$5 million dollar, you know, research team on leisure and the aesthetic. It's just, you know, people create a pseudo-scientific framework, which doesn't really exist.

Elizabeth Ferry: Mm-hmm (affirmative)-

John Plotz: So, that's my kind of wheat-and-chaff problem with the humanities. Like I actually think a lot of the things we do, we do do best alone and you know, we don't, we need a team for some things. We don't need team for other things.

Albion Lawrence: That's reasonable. Yeah.

John Plotz: Yeah.

Elizabeth Ferry: Yeah. Maybe this is a moment that I can ask a question with a little bit of a pseudo, well, I won't even call it ethnography,

but so, I have a little bit of a vice of reading the announcement articles of the Nobel prize.

Albion Lawrence: Okay.

Elizabeth Ferry: This is like a genre that every year it comes out-

Albion Lawrence: Yes. Yes.

Elizabeth Ferry: And usually has a, you know-- "they didn't believe it. They thought that someone was putting them on."

Albion Lawrence: Right.

Elizabeth Ferry: There's some great, you know, charming moments....as a genre, but it also kind of gives you this view, which may or may not be an accurate view of teams, right? It's at least with some of them.

Albion Lawrence: Right.

Elizabeth Ferry: So, for example, there was the recent one just to pick up on a couple of them and one of them was a recent one in medicine.

Albion Lawrence: Right.

Elizabeth Ferry: Right? In which, you really seem to get a sense of these, you know, putting together different pieces of the puzzle.

Albion Lawrence: Right.

Elizabeth Ferry: Right and then the other one, which is not the physical sciences, but the economic sciences such as we can talk, we can have a different episode about that.

John Plotz: Oh, Yeah, maybe.

Elizabeth Ferry: Which is the recent one that was given to the team that's working on the randomized control trials and development economics and there, there's this announcement of these

three people, but then I kind of, at least public recognition that the three people represent a whole number of different organization not just scientists, but also NGOs and individual people.

Albion Lawrence: Right. Right.

Elizabeth Ferry: So, those are kind of two different views or images or performances of what teams are. So, I'm just curious what your thoughts are about that.

Albion Lawrence: So, certainly there are many, there are Nobels given to large teams in the sciences and it's always an issue. So, when it was given the group that found the Higgs awarded to Fabiola Gianotti who was the director....at the time-

John Plotz: And didn't our colleague John Wardle just share like it didn't you just get 1/300th of the prize for photographing the black hole?

Albion Lawrence: Oh, did he actually?

John Plotz: Yeah, yeah, yeah.

Albion Lawrence: That could well be. So, there can be different models of how you distribute, do that by-

John Plotz: yeah.

Albion Lawrence: Convention, you know the Nobel prize was baked in, was it late 19th century?

John Plotz: Mm-hmm (affirmative)- Oh maybe early 20th.

Albion Lawrence: This only goes to-

John Plotz: Late 19th, yeah.

Albion Lawrence: I actually, I don't know what the original rule is, but now it only goes to three people.

John Plotz: Oh, that's right.

Albion Lawrence: It's a structure that is not, it's a structure that's not obviously well adapted to the way science operates.

Elizabeth Ferry: I hadn't realized that was part of the-

John Plotz: Yeah, I forgot that.

Elizabeth Ferry: Yes, that's always a restriction and so, I would have people never entirely sure they were joking if they really liked the paper saying, I'm only going to allow two collaborators on this paper.

John Plotz: Ah, that's really funny.

Albion Lawrence: So-

John Plotz: Wow.

Albion Lawrence: This one case, I'm pretty sure they weren't joking.

John Plotz: But, so why did Watson and Crick have to kill Rosalind Franklin then? They could have let her in?

Albion Lawrence: Right. So, that's one model. And I would say also there are clearly prizes for what is closer to what you're talking about, not for lab, but for something that really was a collective effort where maybe only one person got it for whatever reason. Ken Wilson's Nobel is a good example. Wilson in his lecture says, this should have also been shared by Leo Kadanoff and Michael Fisher, who had done really important work leading up to it. This work is often built on people, other people that are at the same time, et cetera, et cetera. So, it's often a very... The prizes are often very problematic in that respect.

Elizabeth Ferry: Right, right. And it seems like it maybe is connected to a little bit of what you're saying about these, the science-ization of the humanities, that there's a little bit of a, you know, let's call it fetishizing of the team, right? Like the

team has a certain form and that science has to be produced in a certain way that has this team like quality-

Albion Lawrence: But, to go back to the book: what you see is teams. Teams are clearly important and once you get to the Manhattan Project, it's essentially important.

John Plotz: It's why we talk about Oppenheimer so much, right? Because he took-

Albion Lawrence: To a large degree, he was an amazing leader.

John Plotz: He proves to have this totally unexpected bureaucratic ability.

Albion Lawrence: And, that's right. And on the other hand, especially in the early part of the 20th century, there were local teams, but it was much more local teams interacting with each other in various ways, groups, different networks, structured around different sort of Rutherford or Bohr and so forth, sort of interacting in a much richer way. So, it was that kind of openness was clearly important. It wasn't just having a lab where everyone talks to each other, but many labs with different expertise and people talking to each other and constant contact between each other.

John Plotz: So, how seriously do you take questions of like physical proximity or accidental contact like, but people talk a lot about Building 20 at MIT, do you think that's an important part of it?

Albion Lawrence: Yes. I think certainly you see on various levels it really... I've seen it make a difference in places I've been whereas when I was a postdoc at Harvard, as we shifted from an old part of Lyman to a rebuilt facility in Jefferson where the particle theorists were moved, a much more coherent facility. Blackboards everywhere. Students with faculty instead of dispersed about the building-- made a huge difference in the functioning and how research is done at Harvard. Also, just made it infinitely more pleasant place to be. And there are

places where it's acknowledged that the space was important: at SLAC and going back to the '60's people were all packed in together. I know I have one of my postdoctoral mentors was a founder of a thriving string theory group that existed in Rutgers from mid 80's and into the 90s and they said, A, they designed that space to sort of maximize these kinds of interactions. He also said, "absolutely the most productive time was before that building was built. We were all packed into trailers and cars."

John Plotz: Totally cause building 20 was not designed. It was completely accidental. I mean like Noam Chomsky only ended up there at like kicking and screaming I think because there was no space for him in a better building.

Albion Lawrence: Right. And so, certainly that matters and I think also geographic proximity can really matter.

John Plotz: Yes.

Elizabeth Ferry: Mm-hmm (affirmative)-

Albion Lawrence: The ability to get from one place to the, it's I think one advantage of being, for example, in the Boston area. We're-

John Plotz: Totally, right.

Albion Lawrence: And even in the New England area, because New York is not hard to get to.

John Plotz: And I think our colleague Adam Jaffe did some work about the persistence of geographical advantage and patents, like basically one of the best determinants for deciding whether somebody's going to get a patent is how far they live from other people who get patents.

Albion Lawrence: Right.

John Plotz: So, it's a dense-pack theory. So Silicon Valley continues to have a competitive edge. I'm sure-

Albion Lawrence: And Stanford and Berkeley.

John Plotz: Yeah, I'm sure you're right about East Cambridge, too. Wait, Albion, I just have to selfishly, can I ask, is there a walking and talking tradition in science?

Albion Lawrence: Yeah. Oh, yeah. And there's a mountaineering tradition-

John Plotz: No, kidding.

Albion Lawrence: And also sort of a hiking tradition. It's alluded to a bit in this book. It has its tragic sides as well as this here. I just lost a couple of good colleagues-

John Plotz: Oh, man.

Albion Lawrence: In mountaineering accidents. But, certainly there's a history, a tradition of, of walking on the mountain and arguing-

John Plotz: Because I'm trying to bring that back into humanities that I, I think it's an unalloyed good.

Albion Lawrence: Oh, yeah. Absolutely.

John Plotz: So I have, Oh yeah, I have peripatetic seminars that I try to organize, but it's an uphill battle, so to speak.

Elizabeth Ferry: Okay, so, I'm going to propose an analogy. So, if this model of science is to mountaineering as the Silicon Valley model is to rock climbing-

John Plotz: Oh my God, that's so insidious. Ooh, because it's like structured corporate play, is that what you mean?

Elizabeth Ferry: Yeah. Well rock climbing is a big, you know-

John Plotz: It's very safe.

Elizabeth Ferry: Plays a similar role-

John Plotz: You drive your Tesla to the indoor gym-

Albion Lawrence: Right.

Elizabeth Ferry: Exactly. And yet it's a much more controlled and sort of miniaturized environment.

Albion Lawrence: Depends what you're climbing I suppose.

Elizabeth Ferry: Right, exactly.

Albion Lawrence: I have physicists do that too. Yeah.

John Plotz: So, speaking of which, I wanted to propose one sort of complicator to this model that we're talking about when, which the disciplinary differences are really important, which is that this is this book by Jamie Cohen Cole called, "*The Open Mind*", and it's about like the structuring myths of universities. And he makes the point that basically in the post war period right up through basically to the Berkeley free speech movement.

John Plotz: So, let's say '45 to '60. When is free speech? '66? '65? That you have this paradigm that the university thrives by being the home of the open mind. And I guess what I was thinking about is that, that's actually a formulation that erases the differences between collaboration and solitary thought. Because the whole point is that what you're supposed to treasure is spaces of deliberate ignorance or something like...it's, you know, the open mind is what you're supposed to, you know, check all your beliefs at the door.

Elizabeth Ferry: Oh I see. Right. It's like the Clifford Geertz thing.

John Plotz: I guess so. Cause I would just feel like what you're saying when you're talking about people bringing a different toolkit to problem solving, that really prioritizes the notion that people have like different things that they do really well with their brains, that they then put in contact with each other. The "open mind" model is a little different.

Albion Lawrence: I don't know. It's very hard just in abstentia to come up with a new way of thinking. And one way to do this is to talk to other people that sort of force you out of your whatever little corner you're in-

John Plotz: Like you have to explicate across difference.

Albion Lawrence: That's right and that's the value of these kinds of exchanges. It's all very nice to say, "Okay, I'm going to check my conceptions...." And come up with a new way of thinking.

John Plotz: Yeah.

Albion Lawrence: Personally, and maybe it's a failing of mine, I have no idea how to do that in practice. The most effective way is to talk to people who kind of kicked me in the rear-

Elizabeth Ferry: Maybe there's a few people, a few humans who can do that, but the vast majority don't.

Albion Lawrence: Right, right. We all have our ways of doing things in the ways we've been brought up to do things. There's a real value-

John Plotz: Yeah. Yeah. Yeah. Heideggerian throwness and all that. Yeah, I get it. Yeah, that's true, But one formulation that Cohen Cole has that I really like is he says that the university stopped being a model of the nation and became a model for the nation that is, that it no longer was that the university should look like America. It was like, no, America should look like the university. And his point is that, that's like this really fragile consensus that both liberals and conservatives ultimately end up rejecting.

Albion Lawrence: Right.

John Plotz: Yeah. I don't know. So, Elizabeth, can you say more about like I set this up as like maybe it's a triangle or maybe it's a number-line in terms of where social sciences are in

relation to, can you say more about your thoughts about that?

Elizabeth Ferry: Yeah, I mean anthropology is a weird example because anthropology is so sort of built on the mythos of the one researcher in this kind of, you know, intrepid engagement.

Albion Lawrence: Right.

John Plotz: Oh, yeah.

Elizabeth Ferry: With, you know, people with whom that anthropologist is deeply unfamiliar or something like that. I'm not defending that model necessarily, but that's such a, it's so sort of baked into the discipline that it's hard to-

John Plotz: Though nowadays those folks are so connected where even when they're not in the field.

Elizabeth Ferry: Yeah, exactly. Yeah. And nowadays I think partly because of the European funding model and other things happening in the US there's much more emphasis on kind of team sorts of projects, although it often ends up being one person who kind of gets, you know, kind of crowned as the main person in that. Right? So there's still a sort of individualizing at the top, I would argue. But I think the question of like whether it's team or individual I think is a version of the dilemma that anthropology is kind of always in, which is *are we a science or are we a humanity?*

John Plotz: Yeah, right. I see.

Elizabeth Ferry: In which you know that... I mean the example that I was going to give for Recallable books, if I could jump ahead for a second.

John Plotz: Yeah, yeah. Sure-

Elizabeth Ferry: And then come back.

John Plotz: Do your Recallable book. Yeah.

Elizabeth Ferry: It sort of speaks to what you're saying is this very famous team-based project, but not exactly the same way as you're describing Albion, which is called the People of Puerto Rico, which is a project, I think it was published in 1956 and it was directed by Julian Steward and it had at Columbia and it was five of his doctoral students and each of them took a different place in Puerto Rico and different wines, a coffee plantation, was sugarcane workers. There's an urban one. In fact, Robert Manners, who was a professor for a long time in the department here at Brandeis was one of them. And the idea was that this was a way for anthropology to start talking about, to move beyond the so-called village and to start talking about what, how a nation is composed. Right. So, it was very pointedly called not "the peoples of Puerto Rico" but "the People of Puerto Rico".

John Plotz: And was one of them Nuyorican? like was somebody embedded in New York?

Elizabeth Ferry: No.

John Plotz: Nowadays I think that would happen.

Elizabeth Ferry: Nowadays I think that would be. Yes.

John Plotz: Yeah.

Elizabeth Ferry: And in fact there's been some very interesting kind of discussions of what that would look like. But you know, that was sort of like taking the anthropological solitary model.

John Plotz: Yeah.

Elizabeth Ferry: It was kind of a modular structure. I'm fitting in within this team, but not, I'm sure there was a lot of batting back and forth of ideas and there must've been, but, and the others talk about that. But that wasn't the way it was structured.

John Plotz: Yeah. I think this might be a great time to move to Recallable books. So, Elizabeth, do you want to say, do you want to add a Recallable book or was that your only one?

Elizabeth Ferry: I think that was mine.

John Plotz: Okay, cool. And Albion do you want to tell us about yours? So, this is the portion of the show where we think about if you liked the sorts of things we're talking about today, where else would you want to go?

Elizabeth Ferry: So, I'll just run out of left field just for fun-

John Plotz: Yeah, mine is out of left field too.

Albion Lawrence: The book-

Elizabeth Ferry: Left field is getting crowded.

John Plotz: Yeah.

Albion Lawrence: Book "A Message to our Folks" (last name is Steinbeck). It's a history of the art ensemble of Chicago-

John Plotz: Wow.

Albion Lawrence: And this sort of experimental music group that came out of the South Side of Chicago in the 50's and 60's and-

John Plotz: Oh wow. Yeah. We haven't talked about creative ensembles at all-

Albion Lawrence: And so, this is one, and this is, I think partly in the nature of jazz at the time you get a sense of people are involved in different sort of overlapping groups.

John Plotz: Yeah.

Albion Lawrence: It's it similar model of, you know, sort of groups coming together for projects sometimes for very long periods of time. People being in several groups obviously trading ideas

off of each other. It also pays a lot of attention to the context that could generate a scene like that.

John Plotz: Totally.

Elizabeth Ferry: Right.

John Plotz: Yeah, that's great.

Albion Lawrence: Of what was going on in South Side Chicago during and after World War II that allowed that this kind of thing to flower. What, how do people get the education they get? What-

John Plotz: That's awesome.

Albion Lawrence: How could they find venues to play and interact with each other? Why do you not see this now? et cetera.

John Plotz: That's great. So cool.

Albion Lawrence: So, I think that's a very interesting thing to think about in this. If you're thinking about of models of creative interaction-

John Plotz: Yeah, that's another good version of like why group biographies are necessary and especially since it's Chicago, homeless Chicago school. That's so perfect.

Albion Lawrence: Right.

John Plotz: I actually, that makes me wish that I had chosen "Lunar Men" by Jenny Uglow, but I'll name check it anyway cause that's a great book about, about Birmingham in the 1810's., So mine is even further out of left field. Mine's out of the bleachers. It's George Elliot's "Middlemarch"; perhaps you've heard of it and the reason being that it's-

Albion Lawrence: Your copy is sitting on my bookshelf now.

John Plotz: Oh really? Awesome.

Albion Lawrence: It's just waiting to be read.

John Plotz: Oh yeah, of course. Right? We talked about it. Yeah. So, it has it basically if there's a scientist at the center who I think my dad has always identified with named Lydgate and then there's also this dry as dust scholastic I guess humanist basically named Casaubon, who was like the least human character and he's just caught up in his own mind writing a terrible book called "Key to all"-

Elizabeth Ferry: "Key to all Mythologies".

John Plotz: "Key to all Mythologies". Thank you so much. And he's basically just constantly involved in trench warfare with other people and so he epitomizes humanities as just like arid isolation, but then Lydgate is incredibly poignant because he actually is committed to being part of this scientific world, but he's asking his questions a little ... spoiler alert. He's asking his questions slightly in the wrong way and because he's no longer part of the scientific community that he was in when he was studying in Paris where everything's going on instead, he's in a provincial town-

Elizabeth Ferry: Well, also doesn't he hit up against Bolstrode and who-

John Plotz: Yeah, he gets caught up in life. I mean it gets caught up in having a social life-

Elizabeth Ferry: I mean there's pattern out there to the questions about donors and-

John Plotz: Oh yeah, he gets he gets ...absolutely...hegets implicated and tied in to like the... The web of influence that for other people is so emancipatory for him ultimately becomes super restrictive.

John Plotz: So, I just find it a very poignant book because it's both about what scientific collaboration might be and also about what it means that as it's so often is that when it isn't.

Elizabeth Ferry: That's a great example.

John Plotz: So yeah. Well, Albion thank you so much. This has been a great discussion. I've virtually shake your hand over the air.

Albion Lawrence: Well, thank you. This was a lot of fun.

John Plotz: Yeah, this is a lot of fun. So, I should say that *Recall This Book* is hosted by John Plotz and Elizabeth Ferry. Music comes from a song by Eric Cheslow and Barbara Cassidy. Sound editing is by Claire Ogden. Website design and social media is done by Matthew Schratz.. We always want to hear from you with your comments, criticisms, or suggestions for future episodes. Please email us directly or contact us via social media and our website. And finally, you know, I'm going to say this, but I will keep on saying it.

John Plotz: If you enjoyed today's show, please, please be sure to write a review or rate us on iTunes, Stitcher, or wherever you get your podcasts and also just forward it to your friends or other people you think might be interested. And you may be interested if you enjoyed this in checking out past episodes, including topics like new and old media, opiate addiction, post-industrial America, and recent interviews with Cixin Liu, Zadie Smith, Samuel Delaney, and the English filmmaker, Mike Leigh. So, from all of us here at Recall This Book, thanks for listening.

Elizabeth Ferry: And that was a public announcement.

John Plotz: And that was the public announcement. It's coming!