INTERVIEW WITH
PETER SENGE
June 16, 2014 and August 13, 2014
Sloan Oral History Project

P: Peter Senge
B: Bob McKersie
G: George Roth

G: We'll let you just pick up now....

P: What I was saying is that when I tell people about MIT, I find they always get extremely interested beyond just the natural "celebrity" fascination – they all want to hear about MIT – to when you talk about the lab system and the whole entrepreneurial environment that I grew up in at MIT. It's such a refreshing counterpoint to most other images of universities because, you know, particularly in the developing world everybody is trying to create their version of Harvard Business School. I think there are a lot of deep problems with these models of how universities work. I often find that interesting, at some level, as to how universities work I often find that interest, at some level, is coming from either a real curiosity as to "Are there alternatives to our interpretation of the traditional Western university?" Very faculty-driven, all about the teaching or the research, but almost never about the application, which of course my indoctrination at MIT was the lab system, as Jay always called it, and it was always about the application. It always started with "What's the problem here? What are you trying to do to have an impact on that problem?"

Jay used to often talk about the founding, not of Course 15 but of Sloan School, as the whole idea – could a management school develop in a different way in an environment like MIT rather than in a classic, liberal arts university environment.

B: He used to always talk about the analogy of the pilot – you can train the pilot, but what about the more fundamental questions?

P: The desire. That was always his view, and what made it intriguing for him to jump over to the management school early in his career was that maybe it would really develop in a very different way.

But again, I find that whenever I start talking about the lab system and the focus on real issues, and both the education and research benefits of not being a traditional academic institution. I find people are so interested. And one of the reasons is that they really want to know their alternatives. Of course, the imagery of MIT doesn't distinguish it that much from the other famous institutions, other than technology. Obviously, it's all wrapped up with technology. But that doesn't really tell you very much unless you understand that what has made MIT innovative in technology is people working on real problems.

B: Does it work in practice?

P: Yes! I think there are so many ways that that has shaped the evolution of the Sloan School. Ed used to point out to us – because you know Ed was such an important advisor for all of us in the organizational learning work – the analogy of lab research and clinical research in medicine. Not having a good model of the analog of clinical research in fields like management. That would be a good example. You can only test an idea in a real context, right? You have to do it with your patients, so to speak. You can't just do it intellectually, or debate it, or do analysis at a distance with lots of numbers.

In any event, those are all the big parts of my personal methods.

G: I would like to come back to that and ask you some questions about that. The questions I would ask have to do with how well has that method been accepted by the Sloan School? I certainly think it's a strong tradition in engineering, in application and solving a really important and interesting problem that's really valid in engineering. I'm not quite sure I've seen the same thing in the management school. Let's come back to that at the end of the interview.

Let's start with where we usually start, which goes back to when did you first hear of MIT and even think of coming here? What was your impression that brought you here? And then your experiences of being here. And then you've been through – they say cats have nine lives – but you've been through several different lives or roles at MIT....

P: I'd like to think it hasn't been 8 or 9, but I don't know... [laughs]

G: Well, I was thinking 2 or 3.

B: What brought you to MIT?

P: I was looking for a college in Cambridge. No kidding! Literally, the story is, I was an undergraduate at Stanford, and I grew up in California. I loved Stanford. I had my doctoral program all picked out, and a good friend of mine, we were students together in Austria as Stanford had campuses all over Europe, and I spent 6 months in Austria at the age of 19 or something. It was a great experience.

A good friend of mine was getting married, and she said "You ought to live on the East Coast a little bit. It will be good for you. It will round you out." Her husband was at the Draper Lab, lived in Cambridge. So she said, "Come to Cambridge. You'd like Cambridge. It's really fun, totally different than California, but you'd really like it."

I said, "Okay, sounds like a good idea." Literally, I said, "Now, what colleges?? Let me see, there's Harvard and MIT. I don't think I can get a fellowship at Harvard, but I can get a fellowship at MIT." So I did. I literally applied, as a Masters student, to MIT. I did not apply to a school or department. I wrote a letter (I would love to find it sometime, but it's long gone) to MIT describing my interests, and that I wanted to be a Masters student. It was amazing it didn't just get thrown in the trashcan someplace because I didn't go through any of the proper admission process. At the time, I was an undergraduate in Aero/Astro at Stanford. I eventually ended up with a general degree in engineering because I designed my own programs. All I was interested in was systems. I've always been interested in the exact same thing, that's never changed.

I have a kind of fantasy that in that letter, I said something about wanting to understand systems, and social systems in particular. They admitted me to Aero/Astro at MIT because at the time that was the department I was enrolled in.

G: To the Master's program?

P: Yes, to the Masters program. They gave me a fellowship; gave me more money than I could even spend. It was really nice! I never took any courses there because by the time I got to MIT, I'd actually completed all the basic control theory stuff that they taught in Aero/Astro.

B: What year was this?

P: I started in the Fall of 1970. One year later, I still had another year to go on my fellowship, they tried to kick me out of the school because I hadn't taken a single course. But I had taken all the control theory by that time, because that's what I did as an undergrad at Stanford. I took all the engineering and systems control theory classes. It wasn't that I was being stubborn; I just had no reason to take the stuff they offered; I'd already done it. They tried to kick me out because it was apparently very embarrassing to some admissions group, that they had given me money and I hadn't taken a single course.

There was a wonderful guy who was head of Aero/Astro, named Rene Miller. My guess is he probably retired from that job in the mid-1970s. He was a wonderful guy. He contacted me and said, "Would you come over to my office? The faculty want to repeal your fellowship because you're not taking any courses here. I read the letter you wrote a year ago. What are you doing??"

I told him what I was doing. He said, "That's great!" Here again, a typical MIT story – just need to meet the right person, and he says, "Okay, fine, forget about all the damn rules and what all the faculty are grousing about."

During that two-year time, I basically did a kind of "Cooks' tour" of people doing systems stuff in Cambridge or Boston. I took courses at BU and Harvard. During that time I really just hunkered down with Jay. I knew about Jay's work before I came because I had a friend at Stanford who had gotten his undergraduate here and was working with me as a graduate student on a project. He told me one of the people I should look up was Jay Forrester. I didn't really know anything about it. But by the time I'd done my little "Cooks' tour" for a year, I decided system dynamics was more sophisticated than any of the other things I saw people doing.

My criterion was applying systems ideas to social issues. That was it. I thought Jay's work was more rigorous; it had a strong ground, and of course, as an engineering student, I could understand it really well, and I could understand the underlying ideas. I thought he was working on a really key frontier. How do you take 200 years of understanding system from the field of engineering – 250 years by that time – and how do you translate that in a robust way into a totally different universe of social systems? In part, Jay's answer was nonlinearity, that social systems are highly nonlinear. But that's obviously a technical definition of the problem. Eventually, I'd say all of the work added different dimensions to that problem. But that was the problem I started to really appreciate in my first two years here. And then I never left.

By the time I'd finished the two years, I was in a seminar with Jay that spring, and he said at the end of one of his sessions, "What are you going to do?"

I said, "I don't have any idea. I have no job. I have no job interviews."

Again, the same thing. I've never been a believer in planning, for better or worse.

He said, "Well, what do you want to do?"

Well, I had thought a lot about what I wanted to do. I actually mapped out a whole set of questions I wanted to spend time on.

He said, "OK, good. I'll pay you to do that." I ended up staying and working for Jay for three years. I really did not want to get a Ph.D.

G: You graduated with your Masters and became basically research staff with Jay's support, on your defined project?

P: Yes. Jay's way of hiring research staff – I don't know if I was anomalous; I suspect I wasn't. He would say, "There's your desk." That was it. "Let me know in a couple months what you want to do." That was the way Jay ran things. He was so oriented toward the autonomy and self-directedness of people. I'm sure it made things very difficult for a lot of people. It was hard for me for a couple months. But eventually I worked it out.

My initial project was really fun, and really useful for my own continuing development. I wanted to get different leaders in modeling methods working in social systems in the broadest sense, but coming from very different traditions, talking about their philosophies of modeling. So we ran a series of seminars for a year. John Little participated. Glen Urban at that

time he was a young junior faculty member working for John Little, he participated. Victor Weisskopf in the Physics Department participated. They didn't necessarily have to be building social models; they had to be deeply interested in the questions. "What do we learn from engineering and science that could be applied to more effective approaches to understanding complex systems?"

We did that for a year, and wrote up all the conversations. It was a wonderful process, and a great educational process for me. I don't think Ed was in those; he might have been. There have been so many different things with Ed, over the years. He might have sat in on some of those seminars as well. That was like 1972. I started working for Jay probably in the summer of 1972.

B: So you were in the E52 building then, with Jay?

P: Yes.

B: And who were some of the other people in the Jay order at that point?

P: There was a group of young doctoral students, and eventually I joined them, but that was three years later. There was a guy named Nathaniel (Nat) Mass, who finished his Ph.D. by the time he was 24 or 25, and he was my supervisor when I eventually did come back. But we were just about the same age, or I may have been a year older than Nat.

Then there was Barry Richmond who came in when I came in. He was a Ph.D. student.

G: He joined as a Ph.D. student, while you joined as research staff?

P: Yes. I actually went into the doctoral program in 1975, and I think Barry was in my class. So the first year or two, 1972, 1973, 1974, it was mainly Nat and two guys who tragically died young. A man named Gilbert Low, who was killed in a car accident in Mexico about two years later. And a man named Dale Runge. They were part of this new economic modeling project. Nat's training was in economics, so he was a leader of that, even in his Ph.D.

He was really working on the fundamental elements of Jay's what was called the National Economic Model (NEM).

I didn't really have a great interest in that, but that was the project, so that's what I got involved with eventually. I did my own things first, like the seminar I was just describing to you. But then I gradually got drawn more and more into the NEM project because that was the core group. Then there were new doctoral students who came in, like Barry Richmond, and about 4 or 5 others. I can name them all if you want, but none of them are around here now. Although Ali Mashayeklhi is the president of the International System Dynamics Society. He's back in Iran, but he got his doctorate around 1979 or 1980.

George Richardson and Dave Anderson came in about 1978 or so. They are both very active in this International System Dynamics Society, at SUNY-Albany. They founded a system dynamics program out there.

But that was the big project then, which eventually, one way or another, most all of us got involved with, the NEM Project. That was what Jay wanted to do. Jay wanted to reinvent economics.

G: He hasn't given up on that yet....

P: Naaah, Jay doesn't give up [chuckling]. "Give up" doesn't have a reality to Jay!

John Sterman came in 1977 or 1978, and also go involved in that doing energy economy modeling. That's what he did for his Ph.D.

I worked as staff for three years. Then I went into the doctoral program in 1975. By that time, I really knew my way around. I'd gotten a Masters degree. I knew exactly what I wanted to do. I had one goal. I never wanted to get a Ph.D., and I certainly didn't want to waste a lot of time doing it. But I decided to go back and do it quick. So I graduated in 2.5 years and finished everything. I only had a year of classes to do, so that made it really easy. And I already knew what I wanted to do for my dissertation, so I just did it, and got it over with. I finished mid-year, 2.5 years later.

G: I did not know what your Ph.D. was on. Was it on the NEM?

P: Yes. I had to figure out something that I would really enjoy. I had done a bunch of econometric stuff, so it was actually looking at the investment function, which is a kind of iconic aspect of all macro models. How was it done in the system dynamics NEM? How was it done in typical large macro-econometric models, or mainstream ones? That was the technical part. I first showed how the formulations could be related, and basically you could take the standard elements of the macro investment functions and then you added a bunch of additional elements to get what was in the system dynamics NEM. They were not hard to relate conceptually. The system dynamics one was broader, and it was all in the context of a big simulation, as opposed to an equation that people were estimating.

The real contribution of the dissertation was looking at the two ways the modeling methodology – I was still back with these alternative modeling methods – would test the investment function. I first related it theoretically to the mainstream investment functions in the best-known macro models, but then I tested it as an econometrician would test it and tested it as a system dynamicist would test it. So the real core of the thesis was comparing the approaches to testing of a key element of any complex model.

What made it really fun (and you will hear now, the echo of my seminar, my first project) is I managed to get the head of the NBER, who was an MIT faculty member, a wonderful guy named Ed Kuh. Remember Ed?

B: I remember Ed. Ed died tragically too.

P: I know. He was a really sweet man. Ed Kuh, and a man named Allen Sinai, who had been the developer of one of the most popular commercial macro models, called the DRI Model.

B: Allen used to teach in our summer program here. He was a great forecaster.

P: He's a terrific guy. He went down to Wall Street and was a chief economist at Lehman Brothers.

B: I haven't seen anything recently, but for many years his name would always pop up....

P: He was on my committee. He was pretty early in his career, probably in his early to mid-thirties. Ed was more established, he was probably 50 years old. I then got to have a system dynamicist and two eminent econometricians on my dissertation committee. We had great conversations! The whole point of it was...

G: And Jay was the other person on your committee?

P: No, Jay was not on my committee. By that time, I knew Jay well enough to know that was not a great idea [laughing]. Nat Mass was my supervisor.

G: I was wondering how you got Jay to work with these other people.

P: We all met. And Jay was great in conversation. But I had watched Jay as supervisor enough to see he can be kind of random. He's great, great, and then all of a sudden, there's something he doesn't really like. I know Jay well now, and really respect him enormously, but I could also choose. I chose this young guy who I knew really well, and I knew would be super reliable as a chairman. That was Nat Mass, who was the chairman, and Ed and Allen were on the committee.

But then we got to have really great conversations about really going deeply. Here's a formulation. It comes from economic theory, comes from this system. Again, the theory part of it was not too hard to do. But then how do you build confidence that it's valid? How would you disconfirm this? I did the most extensive econometric estimations I could do. It was a lot of number crunching. I did all the technical stuff.

Then I tested it the way a system dynamicist would test it. And, as you might imagine, the deeper you go the more "disjointed" the two philosophies are. They really are different.

The system dynamics testing is all simulation testing. You're testing how the formulation interacts with other parts of big large complex systems. You can't test in isolation.

But the econometric test is exactly that. You have your equation; you have your data; you run all your regressions, in this case nonlinear, instrumental, variable, blah blah blah. But it's basically taking this set of equations out of their systemic context and comparing them to data. Whereas, in system dynamics you stick it in INTO a systemic context, then you simulate it, and you compare the output of the simulation to the data. It's a totally different process.

G: Right. Endogenous versus....

P: Completely. But because of that, it ends up being very qualitative. You have patterns, you can do some degree of statistical comparison. But it just doesn't lend itself to the same degree of statistical reduction and statistical analysis.

I'll never forget a beautiful conversation I had with Ed Kuh. Bless his heart, Ed and Allen, they had really studied. Obviously, they were there to make sure I did the econometric part right, Okay? After that, they really studied the second half of the thesis, which was repeating the same kind of aim but with a system dynamics philosophy. I'll never forget sitting with Ed in his office over in Tech Square, the NBER there. Ed said, "Well, I read it, and I've studied it, and I've thought about it. It just kind of slips between my fingers." I'll never forget that phrase. It was honest, and so poignant. He was saying, "The way my mind is trained, I really can't get hold of this." Even though he could see the logic of it. He could certainly see the process, and everything was spelled out very clearly. But it was one of those beautiful moments of cross-paradigm communication, which are SO hard. He was a really great guy, and he was so honest about it.

They all made lots of suggestions, "try this, try that." Allen Sinai was a bit of a hybrid, because the DRI model was a big simulation model. They sold forecasting, not their simulations. But the simulation was put together, equation by equation, testing each of those equations in isolation. They didn't really do serious, they did a little, but nothing like what system dynamics would call serious simulation, because they didn't have an endogenous model.

G: More prediction based on regression than simulation.

P: Yes. They basically are simulating a bunch of equations and seeing how they all add up. There is some interaction among them, but it's still highly exogenous, or driven by your inputs, as opposed to endogenous, or driven by your internal dynamics.

Anyway, that's what I did for my Ph.D. The other thing about it was, I designed the whole thing so I could finish it quickly.

G: So you finished in 1977-78?

P: I started in Fall 1975, I finished in January of 1978. 2.5 years later. That was it.

B: What is fascinating to me is that your work has always been at a sort of meta, or conceptual, level. And here you were, comparing two methodologies. Kind of getting a framework on the frameworks.

P: Exactly. If you look back at that very first project I had, getting the John Little and all these people talking about modeling. I've always been interested in what David Kantor called "cross-model conversations." Particularly when you get even behind the model to the paradigmatic worldviews that form the models. That's always been a core thing of interest to me.

G: Do you know David Kantor?

P: He's a systems family therapist. That was another similar thing – jumping ahead 10 years – we did with Ed and David and Chris Argyris and Don Schön. We will get there if you want. That was in the late '80s. That was another series of seminars, getting all these systems change people in one room for a couple of years.

G: So, it's January 1978, and we know you don't plan ahead. You know what you want to do....

P: That's right! At that time, Jay said – I don't know, Jay is old enough, he wouldn't care anyway – there was such an informal process for getting junior faculty appointed then. Jay

said, “Oh... we’ll hire you.” That was it. I never went through anything formal, I just went right from there to being an assistant professor in system dynamics. Two or three others have gone the same path.

G: What were you responsible for?

P: First off, I taught the Introductory Systems class, but that was before we had the benefit of the good simulation tools, like Stella, PC-based simulation tools. It wasn’t very much fun. I thought it was too lecture-based. But I did that for two years. I thought it was kind of OK. From a research standpoint – again, typical of Jay, “there’s your desk, figure out what you want to do now that you’re junior faculty that I hired.

That’s where we started – I have to get the name straight, because it went through a couple of embodiments. I think we called it initially “Systems Thinking and the New Management Style.” That probably started around 1979 or so. Partly through Jay, I met a lot of interesting CEO types who I found were thinking very differently about management. I wanted to start bringing them together, talk, and get to know each other, and build a community with the idea of the systems perspective embedded in all they do. Ray Stata was part of that group; Bill O’Brien was part of that group. Others you wouldn’t know. A man named Bob Swiggett, who was the CEO of an electronics company in Connecticut. We got 6 to 8, the cast varied a little, of CEOs who would meet maybe three or four times a year. Very much driven by their own reflections.

But by that time, I was very clear that there was a new mindset being embodied in a growing number of people. A lot of them were in technology industries, but it didn’t have a lot to do with technology. And they were very drawn to the systems perspective, so there was obviously a mutual interest. Some of them were big fans of system dynamics, some of them less so. Obviously, system dynamics is just one approach to dealing with complexity in systems. But that was something we were all interested in. I think what that helped me understand, which I kind of appreciated intuitively but I got to really see it now as embodied in a half-dozen different organizations, it really had profound implications for how you managed.

Bob Swiggett, this guy you wouldn’t know, his company was called KollMorgen. He had developed this elaborate physical simulation with roller skates, connected by different

springs, with different spring constants. It's a perfect engineer's simulation. He would give his new hires a roller skate, which would be connected to another roller skate, and you had to control the second roller skate through moving the first roller skate. And you could kind of do it. Then he'd tack another roller skate onto that, with a different spring constant, and you now had to try to control the third roller skate. By the time you get to 5 of 6 roller skates, it's totally out of your control, and his point was just that: Give up control. If you think as a manager that you're in control of your organization, you're kidding yourself. And of course, we're still wrestling with this. This is such a deep cultural paradigmatic assumption. You know, to be a manager, you're supposed to be in control. But it was a beautiful example. Here was a guy who built this whole company, and he was very successful, with a few simple ideas based on understanding complex systems, or complexity. First was: give up control. If you think you're managing and in control, you're missing what you could be doing. They tended to all agree on ideas like vision, mental models – a lot of the ideas that were coming together at that point.

At the same time, starting in 1979, we started that first Leadership workshop. The two were going on in parallel. We had this beginning conversation group, "Systems Thinking and the New Management Style" group, and then I was starting to do this three-day Leadership workshop with Charlie Kieffer. I think we did the first one in 1979.

G: Charlie was a Masters student here at the time. Is that how you met him?

P: No. Charlie had gotten his Bachelors working for Dick Beckhardt. He was a Beckhardt mentee. He went right off into organization consulting. I don't think he ever got a Masters degree. He was an MIT undergrad. I think he graduated about the same time I did, probably 1969, 1970. My wife and Charlie went to high school together.

G: Is that how you met Diane? Through Charlie?

P: No, no. We found that out years later. She said, "You work with Charlie Kieffer??? He was in my high school." No, it was totally coincidental. I met Charlie completely separately. Beckhardt might have had something to do with it, I would guess. He had started this company called Innovation Associates, and by 1979 we were doing this three-day Leadership

workshop. Doing that again and again – there were some years we did 12 a year, one a month, and it was 3 intensive days. Then, in parallel, we had these conversations going on with the CEO group and spending time with their companies. It was a very "yeasty" combination of real immersion in "What the hell does it mean to 'think differently' as a manager from a systems perspective? How does it get embodied in different organizations?" Of course, that's all very idiosyncratic. It's going to look different here; it's going to look different here. The way Ray Stata talks about it. Bill O'Brien eventually was part of that group, one of the CEOs. They all talked about it differently, but you could see they were kind of singing similar hymns in the choir, because once they got together, it was wonderful. They all loved…

B: Was Jay part of the team?

P: Jay would drop in periodically.

B: But he wasn't an organizer?

P: No I was really the organizer, and I wanted to keep the focus on them because Jay would tend to come in and lecture my assistant, Alex. We would bring Jay in occasionally and it would be great. Do just what he did really well, push people, prod them, and say, "Well, yes, it's all really good but it's not very rigorous," because that's something Jay would do.

But then in parallel, doing this workshop, which overlapped a lot because you get a lot of people from those businesses into the workshop.

Then we were testing out tools and methods and pedagogy. How do you accelerate people's learning? That would couple with consulting projects in those companies, most of which Charlie would do, or the consultants. I never spent a lot of time as an on-site consultant. That was a wonderful combination. That went on from mid-1979 through the 1980s. It just morphed. The form changed, the participants changed, but we had a group like that still going strong in 1988-89. That's the group that led to the founding of the Organizational Learning Center here at MIT.

The one other thread that was significant, we started with almost all small- to medium-sized, highly entrepreneurial companies. At that time, Analog Devices was a pretty

small company. I would say the average size of these companies was $200 million. They weren't tiny, but they were medium size, growth business. Bill's was an exception because he was in property and liability insurance, but extremely innovative in his thinking.

G: Bill was the CEO at Hanover Insurance.

P: Eventually, and mainly through Charlie and his contacts, we started to move into the big corporations. The first two big ones were P&G and DEC. We were doing this Leadership workshop, and we started to get people from DEC and P&G into those programs, probably by 1982 or 1983. Keep in mind, these are workshops separate from MIT, but running in parallel.

Again, I wasn't too stimulated by the teaching at MIT. I thought it was too traditional and not really engaging enough for the students. Too lecture-based. But I loved the workshops. At that time, we never figured out how to bridge the two. Eventually we did, but for most of the '80s I was teaching a bit.

Then John came on as a junior faculty, then the PC came along, and Barry Richmond's Stella software. Before you knew it, the whole teaching of system dynamics was completely transformed by students being able to build and use simulation problems.

B: That's when the beer game came?

P: The beer game is something I did. It was actually developed by some of Jay's students. It used to take 3.5 to 4 four hours to play. There was no debriefing at all. It was an exercise in humiliation, because by the end of 3.5 hour, and I remember as a student on a Saturday afternoon, you were really pissed. They pulled you in there on a beautiful spring or fall Saturday afternoon to show you how stupid you were.

I looked at that about 1977 or '78. I did it with Charlie, and said, "This thing has great potential." Charlie and I redesigned it so you could do it in about 1.5 hours, and then we created a debriefing. Then their game became a real artifact of the field.

But that was to get it into our first leadership courses. We wanted to have something like that in those three-day leadership courses. The interplay between those three-day leadership courses…

G: Is this the course called Leadership and Personal Mastery?

P: Leadership and Mastery. That was the initial name it was called. If you look at the five disciplines, which didn't exist then as a concept, you had systems thinking. You had a lot of work on personal vision and a bit of work on shared vision. We didn't really even have mental models, except we were in that territory. That came a little later with the influence of Chris and his reflective ink dot and their emphasis on reflection. But two-thirds of the five disciplines were in the first leadership course.

Again, this meta-pattern is always connecting. Finding people in different fields who ought to be talking to each other. I started having a series of meetings with Chris and then Don (Schön), and that evolved into this seminar series that started around 1986 or so. For three years, Chris, Don, Ed, David Kantor, those were the four senior people. The next generation, Diana Smith, Bob Putnam, Phil McArthur, and Bill Isaacs organized it. He was a doctoral student at that time. John Sterman and I sat in on some of those. And there we weren't talking about modeling, we were talking about alternative approaches to systemic change. But again, trying to look across different approaches.

Dick would have been involved with that, but he was… I can't remember exactly when Dick passed away, but I know his health wasn't too good by even that time. But Ed participated in all of them. And people really didn't agree with each other. Chris and Don were very close, but the rest of them…

B: Was this viewed as an MIT activity or was it more external…

P: Yes. We met in the Dean's conference room. Yes, it was definitely MIT. Bill Isaacs was a doctoral student, the "worker bee." He pulled it all together, doing transcripts, sending transcripts back to everybody. That was a great process and enormously educational for all of us. That was 1986 or so, when we started that. Bill probably would know the exact dates, 1985-86. I think it ran for three years, it might have run for two, and it was held about every two months or so – frequently enough that it became a real strong process. People got to know each other. They all knew each other sort of, but not very well. They got to really know why they

didn't like each other! In some cases, it was really funny. But it was good, it was real, it was very real, very good exchanges.

By that time, we'd been doing the Leadership and Mastery program for five years and had probably led 40 workshops. The methodology, the tools, were really coming together, and it was getting used a lot. All of a sudden you had a lot of really serious practitioners in P&G. Around 1982 or 1983, P&G started sending people there. By 1985 or 1986 we figured we had had two-thirds of the top 50 managers from P&G through that program. It was very strong in manufacturing. All the key people in manufacturing went through it. But they, of course, had a lot of prior history with early days of OD, again in manufacturing. What was the term everybody used? Socio-tech systems, in manufacturing in P&G. But eventually we got them all across the board. We got sales, we got all the key parts of P&G. Digital, probably by 1986, also very active. Those were the two companies that had far and away the most people go through that three-day workshop.

G: Was there a relationship with P&G with Charlie Krone in management?

P: Not formally, but there was a lot of overlap, as you might imagine. A lot of people would work with Charlie Krone. I never met Charlie Krone, but I would hear a lot of stories, and people would make those connections. I think the clients had a lot of overlap.

G: Before we finish with that, I'm just wondering. You talked about patterns of connecting people from different fields. One of the people who was very influential in leadership and mastery was Robert Fritz. I never knew how he got involved. He had a very different style than you and Charlie.

P: Totally different, yes. Charlie said, "Let's do a leadership workshop and recognize the kind of planning methodology." Once again resurfacing. I said, "That sounds like a good idea." I'd just finished my Ph.D. dissertation. "Hey, I want to do new things! Great idea!" I'd gotten to know Charlie. Even while I was still working on my dissertation, I would go for a half day to teams he worked with. He was a really good OD consultant. He'd been mentored by

Dick. You would come into these teams, and they were really on fire. They were doing great stuff, and I got to be a real fan of what he was doing.

Basically, he was doing a lot of traditional OD stuff, decision charting, roles, responsibilities, good nuts-and-bolts OD management stuff. But he would always blend it with more of a personal bent. "Why does it really matter for us to do this?" When you hung around those teams, these guys talked to each other differently. They were really on the level with each other. You could see he'd done OD stuff in a really good way, deep, personal and pragmatic, which I always think is the key. Very deep, very pragmatic, because then you can really get something going. I'd become a fan, and when Charlie said, "We should do a leadership workshop together," and I'd finished my PhD, I said, "Great."

He said, "There's another guy I want you to come and do it with. He heard you talk." Charlie had brought him to a talk I'd done, and I said, "Fine."

The three of us got together for an afternoon at Charlie's house. Most of the time was spent playing in the pool, but we created the course and then we went and did it. Charlie had clients who would show up. He had a local Boston client who showed up and literally we met for two hours before doing the course and blocked out a schedule. Peter's time, Charlie's time, Robert's time. That was it. Three and a half days. Actually it was four days. It was long and really inefficient, but it worked. It was very powerful.

Robert is a composer and was at that time teaching composition at the New England Conservatory. He was a very accomplished composer. He was a clarinetist in particular, and like a lot of musicians, played a lot. He used to play with Dave Brubeck, so he was an eminent jazz clarinetist and composer who decided that his real core interest—Roberts is probably pretty close to the same age as the rest of us, maybe three or four years older than me. – his real interest was the creative process. He had developed this methodology for teaching composition and had a lot of success with it. His students were winning all sorts of composition awards after only three or four years, which is unheard of. He decided his real contribution to the world would be helping people understand the creative process.

We had Charlie, this very good OD consultant; Robert, with all the stuff on the creative process; and Peter with all his system dynamics system stuff. Threw us together and that became this course. If you look at *The Five Disciplines*, the genesis of the *Five Disciplines* was the work of the three of us. That's how it got created.

B: Now these sessions. Were they somehow embodied within MIT… we didn't have any infrastructure within the School to help. I'm curious how you actually…

P: I was very loosely connected to the Sloan School for most of this time. Needless to say, by going in this direction, the new management style project and all this work on the outside, I really stretched the tether a long way from Jay. Jay was kind of interested, he'd come to some of our meetings, but it wasn't Jay.

Jay has one purpose in life, to advance system dynamics. At that point, we did a little bit of simulation models. Throughout that time there would be occasional system dynamics simulation modeling. We'd use simulators in some of these sessions, but my conclusion by 1977-78 was that system dynamics was up here, and managers were down here. It was like step 10 in a progression. I wanted to come up with how we do step 1, step 2, and step 3 and get people on a path that they could eventually become really sophisticated users, maybe even builders of complex simulation models. But that's not a starting point for very many. That's why the natural synergy with OD worked. Again, it was very nuts-and-bolts stuff, very practical. It had been refined. When Charlie would look at those teams, the teams worked better, you could see it.

So the question is: "Are there subsequent steps?" But at MIT, there was no real connection at all. I was really without a colleague at MIT for virtually all that time. I would say from the time I finished my Ph.D. until people like Wanda [Orlikowski] and Rebecca Henderson got hired, I'd watch these new hires when I'd find somebody I thought was really interesting. John Sterman and I were personal friends. He had gotten his Ph.D. a couple of years after I got mine. I really loved his work on energy economy modeling and stuff. But there was no real overlap in our practice.

G: In some ways, you embody the thing that people around the world are really curious about MIT – that you can stay connected with MIT but also be at the periphery and innovate to the extent that you did.

P: Yes.

G: But you brought that innovation back in by forming the Center. Maybe that's the next place we should talk about.

P: I think it's impossible to make sense of this, at least for me in hindsight, without putting it in the context of my relationship with Jay. Jay had instilled in me such a distinctive image of what MIT was all about. I always felt I was doing exactly what MIT was all about. He used to always say, "Why would you spend your time working on anything but the most important problems you could possibly work on?" Once, when I asked him if I should get a Ph.D., this was when I was working with him, he said, "I've always thought Ph.D.s were for lesser talents." (laughing) Why would you waste your time getting a Ph.D. when you could do something really useful in the world? So for me, even though I recognized that in the context of the contemporary culture at the Sloan School, I was way out there, I always felt like I was operating consistent with MIT's roots.

B: Maybe more so the engineering side.

P: Yes, more so the engineering side. That's absolutely right. I felt very connected, and occasionally I'd meet somebody at MIT who really was connected, and I would tell them and they'd go, "Wow! That's great work." More outside the Sloan School than inside. By the time the work started to get well known, there was a lot of people at MIT who knew all about it, but not as many in the Sloan School. That's absolutely right.

The coming back part. You're absolutely right. The New Management Style program went on for about a decade. We changed the name about midway; I get a little mixed up. I think it became "Systems Thinking: New Management Style." I think we started using the term *organizational learning* even before the Center was created.

That came from Arie De Geus. Arie joined that CEO group. He was from Shell. He was the only guy who wasn't a CEO but he was from this giant corporation, and he had been the CEO of Shell Brazil. He'd been head of their African group of companies, so he fit with the group. He had a CEO world view. But at that time he was the head of organization learning for Shell, in the role called Coordinator of Planning. He reported directly to the chairman of the Royal Dutch Shell Group. He's the one who got us thinking about organizational learning as a

frame. We were doing all this stuff and he said, "One way to think about everything you're doing is that you're trying to create a different set of practices, tools, methods, culture for continual learning." We had never thought about it that way at the organization level, not at the individual level.

He led this famous study at Shell, "Throughout the Industrial Age." Big Fortune 500 companies didn't live very long and he had interpreted all that by saying, "Large corporations have a learning disability. The world changes and they can't adapt." All that came from Arie and his original study, which was done in 1982 at Shell.

G: Eventually he wrote *The Long-Lived Company*. Was that the title of it?

P: It was called *The Living Company,* published by *Harvard Business Review* in 1997, I think. Shell basically kept that whole study under wraps for 15 years.

B: Speaking of Shell, I had a sabbatical year in 1965-66 in England. At the time Shell—I don't know whether it was there or at and Tavistock—they were into state-of-the-art ideas.

P: Exactly!

B: In the 1960s!

P: Yes, they had a long history. A little bit like P&G that way. They had a long history. By the time I got to know Arie, they had been doing their own approach to scenario planning for almost ten years. I think it built on all that stuff because they took this military methodology (Rand Institute) scenario, rigorous, big books, and said, "No, no, we want to use it for learning. We want managers to have to think through alternative scenarios. The planning process should be based on how would I manage my business under three different futures?" They had taken all of that and made it a very participative, reflective process. I'm sure it must have been influenced by all the stuff that had preceded it. They had been very much into a lot of very innovative processes for a long time.

Anyway, so that's how organizational learning blended in. If you go back to that early workshop, you'd see personal vision, shared vision. You'd see systems thinking, all there. But we didn't have the organizational learning kind of umbrella frame. That framing came from Shell. That really solidified the mental models piece. We'd been exploring mental models with Chris, but actually that's a term Jay used. Chris didn't use the term mental models. He had theories of action.

G: What about Model I and Model II?

P: Model I and Model II were his and Don's basic, generic theory of action. But Jay had used the term *mental models* in industrial dynamics, saying that the real purpose of system dynamics is to improve the mental model of the manager because that's the basis for all management. Then Shell came along. I don't think they got it from Jay at all. They started talking about the *mental models* and the *scenarios*. The purpose of the scenarios was to force managers to challenge their assumptions. The microcosm of the world that the manager holds in his head. That's what Arie always said. Then the mental models piece fell into place. That was the last of the basic elements of the five disciplines. And that's the journey of the 1980s.

By the end of the 1980s… Do you want me to just chug ahead?

G: Yes!

P: By the end of the 1980s, a couple things were really clear. One, the stuff really worked. We had SO much practical experience. It was building on many decades of prior experience, but we were now combining a lot of basic OD stuff with all this systems stuff. We were focusing on the thought processes, not just the management processes. The openness, the willingness to challenge assumptions. That's where Chris's work blended beautifully. Ed's work on culture was always one of the streams also contributing.

We had so much practical experience. I really think P&G was saved by this work. I could never prove something like that, but if you remember, by the mid-1980s, P&G had gone from being preeminent to being really second rate. But their manufacturing group was doing

really innovative stuff. They had one CEO after another from advertising! The hierarchy progression, the promotion stream of P&G was boom, boom, boom, Vice President of sales.

G: Brand development.

P: Brand development, VP of Sales, CEO. Six straight CEOs has been VP of Sales, and they were running the company into the ground. Brilliant marketers, but they had had no significant new product innovations in ages. They started to understand that, but they could tap all the work we were doing to see the tools they needed. This was always my hunch.

It was confirmed for me about five years ago. The guy who I think is still the CEO, was just one step away from being CEO, and he asked me to come and do some sessions. I think he's just retired now as CEO, but he may still be the CEO. But anyhow, he asked me to come and do some sessions for their rising international management top people. He said, "You have no idea the impact that work had in saving P&G in the 1980s."

By the end of the 1980s, we had a lot of confidence. We also knew that it wasn't enough. Look at Digital. They did as much as P&G but clearly the conditions were very different in Digital than they were in P&G. We had seen the good, the bad, and the ugly. We were really steeped in a lot of practical experience, and the tools had really come together.

The writing of the book started in 1986 or '87 and went on for 3-4 years. The book was finally published in 1990. My impetus in the last half was to get the book written so we could launch an MIT Research Center. By that time, I was pretty convinced we could do something at MIT on a bigger scale. That became the Organizational Learning Center, which George got very involved in. When did you get involved? 1991? 1992?

G: Formally in 1992.

P: That's the reason I wrote *The Fifth Discipline*. I wanted to get something on the table to say, "OK, this is it. This is what we want to work on. We want to do much more extensive research and testing. We want to get a lot more written. We want to build up the academic credibility." Writing the book was the first step of that. It was very much a retrospective. There was virtually nothing new in that book that either… and all the stories and

examples. That's one of the reasons the book was pretty full of stories and examples. That was the preceding 11 or 12 years and the combination of the Leadership and Mastery Workshop and all the experience we had with that small group of companies. So let's give it a whirl. Let's see if we can do something that's a little more established with MIT.

We had a series of meetings in 1988-89. I remember the formation meetings. Our idea was to get a small group of businesses that would put up the initial money. By that time it was Ford. P&G never wanted to be involved. It still had a very secretive culture back then. You know, the consumer-branded goods companies tend to have these very secretive cultures. They compete tooth and nail for a couple percentage points or tenths of percentage points of share. So they opted out. I think Digital maybe was a little bit involved, but they were already starting to get into a lot of troubles. By that time, we'd also gotten involved with HP and Intel and Ford and Hanover and Analog Devices. There were a few carry-overs from the earlier companies.

G: I know Harley Davidson was involved when I was there.

P: Yes, Rich Teerlink joined that CEO group around 1988, so that group was very generative. We used that to find people who were really committed and trying to do this stuff.

G: And you still do your CEO workshop every year.

P: Yes. The Executive Champions Workshop is an outgrowth of that. And that was the founding of the Organizational Learning Center. The idea was much more extended proof-of-concept. We knew things worked, but we didn't have the research process in place.

B: That required some internal politicking, as I remember, to get authorization for the Center, didn't it?

P: We never got much authorization. Keep in mind, I was coming from the Jay Forrester school of MIT! You got an idea, you get the money, you go do it. Jay never asked anybody for approval of anything.

B: What politicking was needed to get support?

P: To get the thing started. My memory is a little fuzzy. Yes, and keep in mind, I was mentored and all this by Jay Forrester. The rule of thumb was, you got an idea, you get the money, you go do it. He never asked permission for anything. Jay managed all his own accounts! He kept all his own interest. He would raise money and put it in accounts. He figured it was his money, and he used the interest! I got into big trouble for that one a few years later because he asked me if I'd learned to do all that.

That was the Jay always worked.

I don't remember. The Dean back in 1990, was that Glenn?

B: No, Lester.

P: Lester still. I would remember if I had a conversation with Lester about this. Was there a Research Dean at that time? I can't remember the structure. Had we gone to the Dean's office by that time.

B: I was the Research Dean around then.

P: OK. Well, I trusted you. I figured you would always be supportive of this!

B: Yes, right.

P: Maybe that was partly a problem. But again, it was the way things were done. It was still very autonomous.

B: Ed Schein was kind of running interference.

P: And Ed managed to get involved. He was so great! He got involved pretty early on. He had been part of that seminar system. Of course, I had known Ed, but not well. I don't

think I ever took a course from Ed when I was a student. I heard him give different lectures and read his books. But when we started the Organizational Learning Center, he got involved very quickly and he was instrumental. And yes, he was running interference.

G: John Sterman was involved. Was he actually the PI for the center?

P: We had different research projects. He might have been PI for something, but not for the Center, no.

G: I thought he was because I thought you had to be a tenured faculty member to be PI.

P: That's possible, George. Your memory is probably a little better than mine! That could very well be.

G: I think that just illustrates the relationship that you and John had. John was somewhat involved, but very supportive.

P: We were always close friends. We had come up the same path in system dynamics and then branched and followed different paths. But we stayed closely connected. We were always in range and we always kept connected.

G: What Peter is referring to is, there's a long history that goes back to when… I don't know if you were a student here, but in the winters you went up to Rangeley, Maine. By the time the Center started, it ended up being a long weekend that everybody went up to Rangeley.

P: That's how all the kids know each other. It was the annual event, and all of our kids grew up knowing each other at Rangeley.

G: I remember meeting Jay's son.

P: Nathan.

G: Nathan Forrester. That had been going on for ten years by the time I joined in 1992-93, and continues today.

P: There was another thing that is maybe a small footnote. Another thing I inherited from Jay, and this went back to Digital Equipment Lab, Lincoln Lab days, Jay always built teams. I took this for granted, because the doctoral students in the System Dynamics Group all worked together, they hung out together, it was a very close group. All of our kids knew each other. We were always doing stuff together. We'd schlep up to Dartmouth. By that time Dennis and Dana Meadows had moved to Dartmouth. We had a semiannual thing up there.

G: They needed help clearing the farm, if I remember the story?

P: Yes. We'd work on the farm together. Then we'd have one at MIT. We'd have and exchange of students at MIT and Dartmouth. That was so typical of the environment Jay created. I really did take it for granted until I realized: "No, most doctoral students were very isolated individuals. It's me and my advisor kind of life." But we all knew each other's doctoral programs. When I was doing my dissertation, there were probably four or five others. I finished a little quicker, but most of them finished in 1980-81-82. But we all knew each other, we all hung out together. Jay was really into teams. Before I knew anything about team learning, I lived it! I think it's an aspect of the MIT Lab culture that might not get recognized as much because you're working together on very practical problems. You work together! The problems are not broken up into little academically convenient, bite-sized bits where one student works on this and one student works on that independently. They tend to require more collaboration because they're a little larger scale and more complex.

G: I'd see that when I was working across the Institute. The engineering professors always built teams of students that were working together. A typical professor had four or five

students working on projects, and they all usually sat together and worked together and trained one another.

B: You were also providing the financial support.

G: Usually a Ph.D. student and four master's students.

P: Yes. On engineering projects. Yes, I think that's a cultural feature that was anomalous within the Sloan School context, or social sciences probably in general.

B: I have to go in five or ten minutes. Staying with the Organizational Learning Center, at some point you went independent from Sloan.

P: Yes, from 1990-94 it was the MIT Center for Organizational Learning. By that time, *The Fifth Discipline* started to become popular. The work was getting well known. I said, "It's really great being in an MIT research center as long as you're small and nobody notices you." But once they start to notice you, they get more… "What the hell are you guys doing? And where is that money going?" So that was our problem. By 1994 it was really clear that this was not a way to organize it if it was going to continue to grow. We started a process that went on for two years. We brought together people from the companies. John Carroll came to almost all of those meetings. John Sterman in a couple of them. We brought in different people, but John Carroll was the most active participant. George probably remembers all those design meetings.

G: Yes, I was part of them, as were John and Ed.

P: Yes, Ed came to quite a few. The idea was how to rethink this and recreate it. We got this guy, Dee Hock, to work with us, who was the founding CEO of Visa. He had this whole philosophy of what he called "Chaortic Design." How order emerges from chaos rather than you plan it all out.

The net of all of that was that by 1997 we had worked out a design that became the Society for Organizational Learning. It was an independent, membership society. The idea

was MIT researchers and other researchers could be members, consultants would be members, or businesses would be members.

During that process, around 1996 or so, we started to run into real problems because there had been a kind of ferment amongst a few of the faculty that we weren't doing proper research and didn't belong at MIT anyway. "You're just doing consulting, why don't you just organize it as a consulting thing? The money should be just… you're exploiting MIT's name." Blah, blah, blah. There was this real ferment going on. I don't think it was more than three or four people, but it was loud enough that they got noticed.

We had done something during the transition with the budget, which is basically we used the surplus we had built up to fund this planning process, which went on for two years. It's just expensive, it adds up. I don't remember what precipitated what, but there was a big fluff about that. "You didn't get permission to spend the money to do that."

We said, "Well, it was our money." Again, it was my mental model. "It's our money. We never asked you permission to do anything else." Then MIT wanted that money back, which we eventually all agreed was about a half million dollars over a couple of years. They got all hot and bothered. It was a perfect example of where lawyers are so disastrous. If we had sat down around a table we could have solved it…. I don't know what precipitated this. Probably parts of this I'll never understand. Glen pushed the button and brought in MIT auditors.

B: Oh really?

P: I never knew why, because we could have sat down around a table, four or five of us. It was all crystal clear. There was nothing being hidden. It was clearly a different mental model. They were saying all that money had to be approved, and we were saying, "It was ours." We would have agreed: "Okay, that was the rules of the game. We have to pay it back." Which is what we ended up doing. But we would have reached that agreement very easily. Instead, it took two or three years and lots of lawyers and, needless to say, a lot of wasted money. That was when the big political crisis hit.

G: As the group was growing, there was a desire to find a space. That's when it turned out that the top floor of E-60, which has now been totally rebuilt and is the Dean's office,

was available. But there wasn't enough money at MIT to pay for the renovations. I think you made an exception and did a series of talks in Asia and just donated that money.

P: I got Herman Miller to give us all the furniture because they were part of the Center. They gave us almost a half million dollars in furniture.

G: In exchange for some sponsorship fees?

P: Yes. We did what Jay would have always done. We just said, "We'll go raise the money." (laughing) It was just a clash of cultures, in a nutshell. It's unfair to blame any individual. But I think our very entrepreneurial culture, which I had grown up with, versus a more centrally controlled, you need approval, blah, blah.

And, of course, that was the whole reason we were separating in the first place. We could see t that clash of cultures was going to come because we had gotten bigger and more well known. People were asking the Dean a lot of questions. "Gee, your Organizational Learning Center is really great." And the Dean would say, "Gee, I don't know what they do." (laughing)

G: I think the biggest problem was, in order to run the large-scale projects we had, we needed staff, and there was no way we could bring on the staff through MIT to do that. I think in many cases we tried to be very clear that these were consultants that the companies actually hired. But the people in the company, because they were working with the researchers at MIT, were thought to be MIT people. The effort it takes to clarify that sometimes wasn't worth it. But I think that's where misunderstandings happened. It was an effort to do the large-scale projects that were essential, to say, "Do these ideas really work in organizational learning? And with what outcome?"

B: Before I go, I want to get it on the record, the impact of your book *The Fifth Discipline* and the associated field guides. I must say that I saw that as recently as last Thursday. Tom Kochan has a project where we get school systems and unions together, and we had a meeting out in Marlborough with a couple hundred people there. Someone was up there talking all about what they had found helpful, and they mentioned *The Fifth Discipline* and Peter Senge.

I thought, "Oh wow! Here I am with a couple hundred other people and the book is being mentioned." I know it sold over a million some?

P: If you look at it globally, it's over a couple million, probably about two and a half. More copies in China than any other country!

B: And the impact, yes.

P: Even officially. It's been well over a million copies officially sold.

B: How many languages?

P: I don't know, 30 some. But China and the US are the two big sellers. It was re-translated in Chinese two years ago and re-published and became the number one business seller in China. It was 15 years old!

But by writing the book, I was just so convinced. This to me is the key. The stuff works. It's not easy and there's no formula here. Some people will produce great results, and some people will produce nothing, because they'll be very superficial about how they do things. But if you do it seriously, these tools and approaches can really make a practical impact. I think that's always been the energy behind it.

I say that because I think that's MIT's energy. I think it's that conviction that, "You know? This has got to work in practice or it doesn't work." You can't say it works intellectually unless you can say it works in practice. Once you build that confidence, you have that particular kind of confidence.

G: One of the things I remember at that time that was quite important was the distinction between a research center and a learning center.

P: Yes, that was Ed. Ed really pushed us on that.

G: Right. And that research is only part of learning.

P: That's right.

G: The idea was to apply the ideas in practice, which meant you had to go out teach, learn, AND research. It kind of closed the larger loop.

P: Yes, that's absolutely right. I remember Ed, one of the first times we were talking about the top of the new building over there, the old AD Little Building, Ed said, "Just remember when you walk in, it should look like a learning center. It shouldn't look like a research center."

G: I think from that, Herman Miller also looked for how does it bring learning into the infrastructure of what it provides in offices? To learn from their involvement with the Center as part of putting that into their products. What we haven't covered and I don't know whether we should come back. I'll leave that up to you.

P: We should let Bob go…

G: It's sustainability. I almost wonder, Peter, if we couldn't schedule another time to talk about the sustainability work? Let me propose, because we've kind of stopped in the early 90s. And your work has gone on and I think it's part of the pillar of the school now is sustainability. I think it would be really useful to talk about that.

G: Bob, why don't you go. I have two questions that just go back to what you were talking about. [Bob McKersie leaves]

One of the things you always talked about was working with the Celtics and Red Auerbach.

P: Yes, that was one of our fantasies with Charlie. We never did that. No, no. Bill Russell had written that incredible book with the beautiful quotes about the teams and the different transcendent states. Charlie managed to get, probably through an intermediary, an

actual direct invitation to Auerbach to sit down and talk about this some time. But he canceled the meeting and said, "I don't think we want to talk about it." I think he decided it was part of their competitive edge!

G: Might have been. I hadn't thought about this until this second. That explains why San Antonio beat the Miami Heat.

P: I was going to say. We've seen such a beautiful example of the same thing. That was an amazing series in the way San Antonio completely dominated by being an incredible team. It's pretty impressive.

G: The other question I want to ask you about is something I've only heard a little about. I don't know if I've ever asked you about it. I don't know if it was part of your bringing people in about their systems approaches and modeling? But it was around having Werner Erhard here for a seminar…..

P: That was around 1977 or so, because I was still a doctoral student. I'd gotten to know him in the 1970s and arranged… He actually had a meeting with Jay. That was really fun! I'm guessing that was 1976 or so. It was fascinating the way the two of them connected. Totally different in every way, personality, history, you couldn't imagine two more different people. And yet, they both had such a… That was what I had intuitively appreciated. I started to see more directly that Jay had such a deep appreciation in the creative process. From his roots, creating things in engineering. There was such a powerful resonance. I wrote that whole thing up. It was a phenomenal exchange between the two of them.

Anyway, about a year later, I invited Werner to come and give a lecture at MIT. He gave it in the Green Building, I remember, an hour and half, two hour talk. It was just that one event. The meeting with the Jay and then the lecture he gave.

G: Did you have an association with Edward Deming or were you just part of when he was here?

P: No, when *The Fifth Discipline* was just about done, I originally wanted to get a quote from Deming for the book. Of course I didn't know him, but he had been working with Ford and a lot of the same people at Ford like Vic Leo, they knew Deming. Actually I think Deming worked with Fred's team some, or whoever was the predecessor of the FN-74. He might have actually had breakfast meetings with Deming for a few years.

G: Fred was the planning manager on the Taurus. He probably worked with the Taurus team.

P: They would talk about their breakfast meetings with Dr. Deming. So through Fred, or it could have been Vic, somebody got a copy of *The Fifth Discipline* to Deming. So I actually did get a quote from Deming. But then they arranged for us to meet. I met him around 1991 or so, after the book was published.

G: What you just reminded me of – something that's important to potentially talk about – you were invited by Ford to do a series of lectures. It was you and Russ Ackoff, where they had identified their need for systems thinking. Maybe you can…

P: In around 1986-87. We started working with Ford in the mid-'80s. They had established what I think they called the Senior Executive Center. It was right downtown, those big, tall buildings in the middle of Detroit, which was part of Henry Ford's dream to reinvigorate downtown Detroit. On the 35th floor they created the Executive… I don't know if it was Executive Education or Executive Learning Center. Over a period of about a year and a half or two years, I would schlep out there every month or two. Russ was involved. I was involved. The theme was systems.

G: I think Ford had identified their understanding of systems as a critical capability for the company.

P: Yes. I don't know this for a fact, but my hunch would be Deming had certainly planted the seed. Because you know Deming was so adamant, "Your first job is understanding

the system." But he didn't really have much in the way of tools and methods to help. He had lots of stories and examples and he could really beat the drum about why it was crucial. But, of course, they made him very predisposed, "How do we do this?" I think that's when they found Russ and that's where we found us. I did have a series of meetings with Dr. Deming then in the 1990s, including going to visit him at his home in DC.

G: We're going to stop and continue later.

END OF INTERVIEW

INTERVIEW #2
WITH
PETER SENGE
AUGUST 13, 2014

P: Peter Senge
B: Bob McKersie
G: George Roth

G: This is a continuation of our interview on June 16 with Peter Senge. What we were doing was recalling some of your history at MIT. We had a rough copy of the transcription, Bob and I could read it again, which we both did this morning. I was thinking we could take off from where we stopped.

I think you did a really good job of explaining what MIT was like, and working with Jay Forrester and the kind of entrepreneurial spirit of how things got done, and also how you've managed your career and your interests – up to the point of creating the Learning Center. We had just talked about the Learning Center leaving and starting SoL (Society for Organizational Learning). I don't know if you want to talk about SoL.

But where we'd like to continue is the work you did, and continue to do, after the Learning Center. That would include your work on sustainability. One of the things has been your impact on teaching, and teaching leadership here, and the changes that have occurred in the curriculum, and your contribution to teaching. I don't remember what it was... Teaching system dynamics, and the dilemmas of system dynamics being a hard course to teach before PCs and Stella and the tools that made it much more accessible. We do want to go back to one other thing you mentioned this morning, before we go forward....

B: I was particularly interested in the group that met periodically that had Chris Argyris, Don Schoen, Ed Schein, and you. If you think about how people get together and create "hot ginger" groups.... Can you say a little bit more about how that group functioned and what value it had for you and maybe for some of the other people? I'm trying to understand the ways in which people interact.

P: It's a great example of something that doesn't happen nearly as much as it could, but we all like to see it happen more. People are influential in different academic fields, really take the time to have quality interaction across boundaries of their respective approaches. Did I go through who was involved, before?

B: I remember the four names I mentioned. There was also Bill Isaacs...

P: Yes, there were the veterans: -- Ed, Chris, and David Kantor – they were all eminent in their respective fields. But, with the exception of Chris and Don, they didn't know each other that well. Certainly and Ed and Chris and Don all knew each other, but their paths had diverged significantly. Nobody knew Kantor. He was Diana Smith's suggestion.

Then there was a second group, which were more the early 40-year-olds, so relatively far enough along in their careers that they were getting somewhat established but early enough they could be very much an influence. That was Diana Smith, Bob Putnam, Phil McArthur, who George knows. Those three are really three of Chris's senior students. In fact, one, Diana, and maybe two, co-authored the book *Action Science* with Chris.

Then myself and… Bill Isaacs served as the doctoral student organizer in that kind of engineering role. He was 10 years younger than us. He'd just completed his doctorate at Oxford. But he had a lot of energy to help organize. You always need somebody to do the organizing work.

I don't recall precisely – I think we met for the better part of two years. I would bet there was at least eight meetings, maybe a few more. Diana might recall more. But it was a very nice mix, because you had these real "elders" in their fields, who had some real differences, including some personal differences as well as substantive methodological differences.

Then we had this very eager group of fast followers. We were right at the stages in our career where we could soak it all up and really put it to work. Obviously, it would have been even better to have had half a dozen doctoral students. I don't recall any, other than Bill, who had just finished his doctorate.

Is that right? Who am I forgetting??

G: As you know, I was a student of Ed's, and I knew about this group. I asked to participate and it was not for doctoral students, which I understand. But I think it was just managed in that way.

P: Ohhh, okay. That's probably a fact that I'm just not remembering very well, the way we've defined the boundary. Now that you say that, it does sound correct. I don't know if that was – I'm sure it was Bill conferring with some cross-section of the group.

G: Ed has also advised me, by the way, not to do my dissertation on learning because he said it was so complicated that a psychologist still hadn't figured it out. He said, "Do your dissertation on change, and then do learning as part of your career..."

P: Oh, that's interesting. It's an interesting perspective that he would have....

B: What would a typical meeting be like? How would you decide what to talk about?

P: After a while, we were very influenced by Argyris' methodology, i.e., we tape-recorded meetings and we would come back to transcripts – something that was core to Chris's practice. And because we had three of Chris's senior students – Diana, Bruce, and Phil – that was very natural. And Bill Isaacs had done a fair amount with Chris.

Initially, I think we started off with some topics. Seems to me we took some cases. It's a long time ago, my recall is going to be imperfect, to be sure. We took some cases, we would look at them from different vantage points. We might have taken a few of people's papers. But I know that at some point, when we had some conversations that were kind of "juicy," where you could feel clashes coming up, we did transcripts. Then we would come back and spend some time breaking down those conversations. Different people would take turns facilitating. I think Bill did a lot of that. It was just a matter of getting people together. I know at one point, Diana suggested David Kantor should actually apply family systems to members of the group. That was not well received! [laughing] I'll never forget Ed saying something to the effect, "I'm not here to get family therapy!!"

But the beautiful part of this was, people were really showing up as who they were. It wasn't just intellectual, it was personal, and you could really feel the deep clashes. Diana is very insightful on these things. She has a very unusual background, but she IS a therapist, trained as a therapist, my guess is an individual psychotherapist originally in her training. But did all the stuff of Chris's, and she's made her living as a consultant and trainer of consultants. She's basically trained all the Monitor consultants to be good process people. So Monitor had this vision that they would be unique in the strategy field because they would have very high process skills. Chris was on their board. So Diana became the trainer to the consultants.

G: Chris had an office over there and would spend one or two days a week. I remember meeting him there.

P: That's right. And then Diana became the president of New Profit, when they founded it, for eight years. New Profit is the non-profit wing of Monitor.

Because Diana has this deep psychotherapy training, she would often nudge things a little in that direction. That's why she brought in David. She said, "David will fit with this group because he's a systems therapist." He's very different. I think he was the wild card. He was a big surprise for everybody, nobody knew David Kantor, even though he is eminent in systems family therapy.

G: I think Bob will know Bruce Patton, who is the spouse of Diana.

P: Yes, Bruce and Diana got married. We often joked – he was the only person we ever met who actually could marry Diana! It's been a great relationship, it was like 20 years ago, (1) because they are both master consultants, and (2) because Bruce has this remarkable, placid .... and Diana is fiery as the dickens. I think that was a natural bent in that group, to go into the personal, not just stay at the intellectual level. Sometimes that made for pretty rocky sessions, but I think, on the whole, it made it very meaningful, because there really were deep clashes. I don't think we needed to be taught this, but it was a real lesson in that the people who have a big stake in their theories, it's a very personal matter, right? And even though they might have all kinds of ways to present them, and defend, and explain, and relate on an intellectual group, there is a deep

emotional substrate that you get to quickly – particularly if you have some personality clashes. Frankly, Ed and Chris, they had such different styles.

G: In my experience of Chris, I'm tempted to use the word "defensive," but Chris is offensive in that when people are presenting contradictions that he readily sees, he is quite good and skilled at calling them on it in such a way that it's very hard to interact. I think you are overwhelmed and you shut down. I can see where it would require that, to have Chris participate would require it.

P: That's absolutely right. With many of his students, and Don of course very safe, I don't think Chris needed much permission to do that. He would do that at the drop of a hat. But there was plenty of appreciation for that. But also, by virtue of having people who knew Chris really well, they could also moderate Chris, because they could slow him down and do the exact same thing with him. That was a very strong practice-centered group: Don, Chris, Diana, because their theory is about practice, right? Their whole theory is about the reasoning and use. So they were extremely good at calling each other. I think we all had to jump into that, but they were really good at it. And that's not Ed's style, in any way. I think he probably felt at time. I've never said this, I'm just guessing, a little AC/DC, just on a different wave-length. Ed is very much sensing the field, making small moves; he certainly can be direct when it's appropriate. I would just make up a caricature. I think if I put myself in Ed Schein's shoes, I would look at Chris as being kind of heavy-handed and aggressive and consequently not so effective sometimes because of that. But you know, Chris is this Greek guy...

B: That's very helpful. It gives a little feel for what was going on.

P: It was wonderful! It was SO rich. Obviously, it was rich intellectually, but it was also rich inter-personally as much.

G: Where were you in writing *Fifth Discipline* during this time?

P: This was before. *The Fifth Discipline* was a process, it went on for 3-4 years. Did we ever get the years straight on this? I'm guessing it was 1986, '87, '88, somewhere in that time period?

G: I don't know.

P: Diana or somebody else could corroborate that. If I'm right, I was writing. But it was a very long-term process where I actually worked for about three years and had a stack of 7 or 8 feet of pages. My editor at Doubleday started this off subtlely but then eventually a really good writer looked at it and said, "Well, I can clean this up using an accomplished ghost writer and publish it, and it would be okay. Or you could start over and maybe it would be really good!" [laughing] I'll never forget that line!! And of course, it was a pretty simple choice. After about three years, I threw it all out and started all over. I think this was during the three years, so there was a lot of stuff going on. But it wasn't as focused as it eventually became.

B: It also points up the opportunities – having been at Cornell for 8-9 years – it would be very hard to produce something like this at Cornell at isolated Ithaca, New York. And here you are, in the Boston area, drawing on....

P: Yes, that's right, it's a very good point. You have Harvard, MIT, and the Kantor Institute, which gives you such a tremendous array of intellectual leadership in Cambridge.

B: OK, that's good. George, do you want to move into sustainability and things that follow on from that?

G: So the Learning Center has moved away, SoL is starting, you are obviously well-established, are really busy, and pulled in lots of directions around organizational learning. You have the work going on with schools. As you've said, you don't plan, you let things emerge. So the question really is: what drew you forward at this point?

P: Maybe the thread to pick up first, just because in some ways it's the longest one, was the sustainability one. Keep in mind, I came to MIT in 1970, landed eventually in the System Dynamics Group, although I was just a student initially, I wasn't officially part of that group because I had my own fellowships, and I didn't need any support. But I took my first system dynamics course in the fall of 1970, and that was right around the time when the Urban Dynamics Group was winding down, and the World Dynamics Group was starting. I got to know all that World Dynamics/Limits to Growth gang.

Prior to that I'd been an undergraduate at Stanford. My roommate worked in Paul Ehrlich's population biology laboratory. If you look at the history of the environmental movement in America, there are three big books that got it all started: Rachel Carson's *Silent Spring*; Paul Ehrlich's *Population Bomb*, which I think was 1968; and *Limits to Growth*, which was 1972. I was right in the middle of all this stuff, right from the beginning.

I remember when I lived in Germany during the summer between finishing my undergraduate and starting at MIT (the summer of 1970), I was so into this stuff, I translated a long magazine article (it was good practice for me) by Ehrlich on *Population Bomb*, for my engineering colleagues in Germany. I grew up with these issues.

When I came to MIT, we didn't have the word "sustainability" then, but that was always what I was interested in. It seemed to me they were the big transcendent issues of this era. Then it was just a matter of being patient. I always had in mind that this would be work that I would be involved with. But there was no clear opportunity. I was around the Limits to Growth group, and I got to know all those people really well. But that projected ended, and about the time I could have gotten involved – I had those three years after my Masters degree and before my PhD – where I knew enough that I could have been helpful. But the project was winding down, so there was no real opening for me there. I got to know everybody, and we talked about things.

Basically, I had to wait 20 years. That was the mid-1970s, and since my stylistic orientation is that you have to be practical, you have to work in real settings, you have to be testing things in practice. I didn't see any real opening. Clearly, I could write more books on all these interests. At that time, people would have said environmental issues were steadily growing, but there was no clear way to get involved and be helpful. And in the business world, even though I talk about it, and I know at a personal level a lot of people saw it as relevant, there was

no strategic connection, you know? Businesses couldn't connect this to their business. So I just kept waiting. Finally, my idea in the transition of getting MIT – getting the Organization Learning Center separated from MIT, and established as independent – was that it would then just be a vehicle for lots of learning communities to develop.

The one I most wanted to create, right from the beginning, I always had this in mind, was something around sustainability. By the early to mid-1990s, you could see business people starting to see "well, maybe this is relevant for our business." It still was off in the distance, but people were making speeches. I think the first President's Council on Sustainable Development was in President Clinton's era, and I think was set up in 1993, 1994, something like that, the first Clinton Administration and Al Gore was the vice president. So all of a sudden these issues were starting to move more and more into the mainstream, and businesses were taking it seriously. I'd gotten to meet a lot of those businesspeople, like Ray Anderson, who was the first chair of the President's Council on Sustainable Development. Ray was the CEO of a carpeting company called Interface. I could see it starting to brew.

Then the question was: it's becoming salient, it's becoming recognized as really a business issue, not just a public-policy issue or an educational issue. So there could be a niche for us.

We convened a series of meetings, which were all failures. I'll never forget the most illuminating. This was starting around 1997. SoL was established by 1997… We finished shepherding the transition, and I knew this was where I wanted to go, to start some kind of sustainability consortium. We had two years of organizing, which produced virtually nothing, trying to bring different groups together.

The meeting I said was the most illuminating – we finally got one meeting with 8 or 10 CEOs. Ray helped organize it, he was very passionate about this, and we had CEOs of several other companies. It was one of the worst meetings! [laughing] They all sat around and complained about this government policy, or this/that. I've never seen a more disempowered group! They all said, "Yes, this is really critical, we'll come to this meeting." We had it at the Harvard Club in Boston on Comm Ave. Were you there?

G: I don't think so.

P: Joe Lauer and Sarah Schley were of course involved at that time, because they helped do the organizing. They eventually became the co-directors of the Sustainability Consortium.

We left that meeting, and I remember talking to Ray the next day, and I said, "Well, Ray, the one thing we've learned is getting a bunch of CEOs together does not necessarily produce any energy!" I know partly it's the typical thing you have with too many CEOs in the room. They are like a bunch of cocks in a barnyard; they are so deferential, they don't want to step on each other's toes. It was the antithesis of those meetings we were talking about before, where they were so candid, so personal, and all the things that energize a meeting. None of that. It was like listening to a bunch of people press a button and give their canned speech. But when it came to open conversations, all they did was complain about government policies.

We left that meeting, and within a week we had a really clear strategy. It turned out to be a really good strategy. It started with the conversation with Ray. Basically, the gist of it was, "Let's find people who are doing this in business, not people who are advocating that somebody else should do it. Let's find people who are on the ground doing something. Let's not worry if they are CEOs, obviously." Then about a year later, we did have just that meeting. That's where Roger Saillant got involved. George knows Roger well. Roger had been part of the founding of SoL, he was really one of Ford's best managers, I think. He had a remarkable record as a line manager.

G: And very supportive of LFM, Jan Klein and MIT. I remember a dinner with the two of them.

P: But he was also a scientist. Roger was three years a post-doc in chemistry at UCLA before he decided the academic world was too political, and he'd go into business [laughing]. So Roger is very well trained as a scientist. He was Ford's representative to DoE, he was on all these big things. As a senior executive at Ford, they didn't have many people with Roger's scientific qualifications. Roger dug deep into these issues. Even today, Roger could sit down and off the cuff write a book on the state of the oceans, which he follows very closely. So he was a natural because he was very passionate about these issues. At that time, he had retired

from Ford and was in the process of becoming CEO of a startup fuel-cell company, which he did for about 7 years.

That's what got Darcy Winslow from Nike, and Sarah Schley her partner at Nike. Joe and Sarah could probably remember all the people. We had about 8 people from 8 different companies. Most of them were director-level and above, so they were senior enough that they had enough clout to do what they were doing. Darcy was a director of advanced research at Nike, where they had done all kinds of pioneering work on materials, doing gas chromatograph analyses of their shoes. What are all the chemicals in the product and in the processes to produce the product. It was really a seminal piece of work which today still continues to have a big impact on the apparel industry because there are so many toxins built into our products, like dyes, tanning of leather, all the plastics, etc. etc. But nobody had every looked at them from the standpoint of a comprehensive, toxicological study.

Anyway, so we had Darcy, we had Roger, we had one of the guys from Interface who was on the front lines of a lot of what they were doing. That meeting was electric. Then we had practitioners, we had people who were doing it. They had real problems. They didn't come to give a speech, they came to be around people like themselves and say, "Hey, have you ever dealt with this?" And "How can you help me?" All of a sudden – we all know that space, when you have people who are really doing something that's challenging, and they know how challenging it is, and they have no problem at all talking about their difficulties. Exactly what the CEOs were very uncomfortable about.

That was it. We had the consortium, right there. After that meeting, it was really easy. We then had a series of meetings. I think it was 1999. I always think of 1997 and 1999 as the organizing period. It may have been 2000.

Then the SoL Sustainability Consortium was established. We had some very strong, common interests. We had BP, but their alternative energy group involved in that, a woman named Vivian Cox got very involved. BP had a really wonderful start into alternative energy, which after John Brown left BP they sold off because.... It got to the point where it was profitable, and it was growing, but it was minuscule compared to the oil business and they just didn't have the stomach for it. John did, because he thought "we should be a leader in positioning ourselves for the next 30-40 years."

Anyway, it was a great group. Shell was involved, really good people doing some really good stuff. We had Ford there, we had Harley-Davidson. But they were all line managers doing stuff very practical.

B: Although the CEO of Harley-Davidson wouldn't be the kind of guy who only worried about public relations. You were talking before about Rich Teerlink. I've interacted with him and he's a real guy.....

P: Yes, he's a real guy. He's not a paper cutout CEO, right? Exactly. That's generally true of Harley, at least at that time. We've lost contact. For 10 years we had a lot of things going on with Harley. They were great to work with. Very pragmatic.

Anyway, that's how the Sustainability Consortium got started. That became a kind of space for building relationships and exploring issues. I would call it an exploratory consortium. It wasn't particularly focused on any one issue or two, but these people were all pioneers, and they just loved being around peers like themselves.

Pretty soon we had a couple ideas that had crystallized, and this wasn't just because of the Sustainability Consortium, but I think that further crystallized things. One was that the big issues required collaboration across boundaries, not just between organizations, but across sectors. That the real big issues were going to require business, government, and civil society organizations working together. No way were we going to make headway unless we could do that. And that these things were becoming strategic if you found the right people in the right settings. What I mean by "strategic" is, somebody can say, "The future of my business will depend on this issue." This is not CSR, which was developing in parallel and we all hated it. It was a kind of classic corporate greenwashing, which is the term that eventually emerged. You could see that coming. Because the issues were topical, every company had to have something that made them look good around that. That's why that first meeting was such a disaster. But illuminating as a disaster. You had to get one step removed from people whose main concern was how their company looked. And the people were saying, "No, no, this IS strategic, and we're part of the innovative, leading-edge in our organization and industry." But you have to work across boundaries, you have to work across your supply chain, you have to work across sectors.

Around 2001 or 2002, Otto, Joe Jaworski, me, a group of us, had come to this conclusion that the big shifts were going to come through cross-sector leadership networks that were more focused. We tried to start a whole bunch of projects, none of which got started – same old story, you try a bunch of things, and almost everything fails. The real hilarious story there, which ironically led to the founding of the Food Lab, was in my opinion a disastrous meeting that Joe had helped pull together. It was at Trapp Family Lodge. We used our ECW session 2002, Joe Jaworski. Joe had done a lot of work – it started out with Kraft. Kraft was bought by Philip Morris, which goes back a long time. We had very strong relationships with the former Kraft people who were now part of Philip Morris. Of course, nobody wanted to work with Philip Morris. But the guy who was CEO of Kraft had then become the vice president, or North American president, for Philip Morris. He offered to host this meeting, cover all the costs. We brought together 60 people from around the world, all of whom were interested in cross-sector initiatives around sustainability. It was too big, and too rambling, there was too much money. He had actually brought some people to make a play. I just hated it. It was the exact antithesis of all the other meetings we'd had at the Trapp Family Lodge, which were much more emergent.

This thing is going no place. But there were some Unilever people there. I had invited them. I had met the Dutch chairman in 1998, Anthony Burgmans. At that time, Unilever had a Dutch and an English chairman. Anthony was the Dutch chairman. I had met him when they asked me to come and facilitate a management meeting in 1997 or so. I was very impressed by him, and the depth of his understanding about issues, particularly the global food system, and fisheries.

I invited Unilever. I had gotten to know his HR VP, who was Andre van Heemstra. Andre was at this meeting. It's a great story because it shows the crazy serendipity that leads to real changes. We had 60 people, God only knows how much money Philip Morris put on the table, probably a few hundred grand to put this meeting on. They flew these people from all around the world, brought in some actors to do this thing on Shackleton's expedition to Antarctic. I hated the whole thing, it was like a big production.

BUT, Andre was there. I really like him, and we got to talking about food. I'm feeling that this meeting is going to be a total flop, we're not going to get any good projects out of this. I called Hal Hamilton, who happens to live an hour down the highway around White River Junction. The meeting is up in Stowe, VT. I said, "Hal, could you come and have lunch

tomorrow? There's a guy from Unilever here you really ought to meet." Hal and Andre met over lunch at this otherwise disastrous meeting in Trapp Family Lodge, and that's when the Food Lab got started. There might have been somebody from Oxfam there, I don't remember, but I think there was, maybe Becky Buell, who joined them for lunch.

Anyway, that led to the only one of these cross-sector initiatives that really was successful, which was the Global Sustainable Food Lab. Today it's 70 of the world's biggest food companies and NGOs, 12 years later still going strong. I remember that meeting was in 2002. They took 2 years to organize it. And I do think today it's one of the preeminent examples in the world of cross-sector collaboration.

B: And the Food Lab is based where?

P: The Food Lab is all over the place, but it's basically North America, South America, and Europe-centric, but it was Unilever and Oxfam that eventually helped organize it. Its coordinating group is based in Vermont. Hal is the director of the Food Lab. Actually, he's a co-director with Don Seville. But Hal became director, and the seeds for it emerged from that lunchtime conversation – which I didn't even join. I got them there, but I had to do something else at lunch. I knew Hal because of the Sustainability Institute, and Dana Meadows, and all that.

G: So the place in Vermont where Hal lives and works, is the Sustainability Institute, which was really founded by ....

P: Dana Meadows. That's how I knew Hal.

B: Do they have academic linkages?

P: They did for some time, but then Dana gave up her professorship at Dartmouth. She was a tenured faculty at Dartmouth, and she quit. She thought tenure was stupid, and she wanted to just concentrate on her writing on the sustainability issues. But yes, they did for a long time. They had a board with several Dartmouth faculty on it.

G: That was part of how John Sterman got to MIT.

P: Yes. John was a student of Dana's. That's how John ended up in system dynamics.

B: At Dartmouth.

G: I remember, John talked about how he would go and work on the farms? That was where he was working, on Dana's farm.

P: Yes. In the early days, we had a System Dynamics Group at MIT, and they had a System Dynamics Group at Dartmouth, which Dennis and Dana had founded when they moved. We would get together 2-3 times a year. We'd alternate between meetings up there and meetings down here. It was wonderful and everybody really got to know each other really well.

Then Dana has this vision to establish what became the Sustainability Institute. Dennis and her had split long before this. She wanted to found the Sustainability Institute as an organic dairy farm of researchers who were also working on global food issues. That was her vision, which is what it is today. But it was a few years after her passing that it started to take shape. And it all happened at this crazy lunch. I don't know if there would be a Food Lab if it wasn't for that failed meeting, and Hal being coincidentally an hour down the road, and he came up on short notice to have lunch.

B: I want to ask two questions about orbits that might not have intersected in this.

When you talked about Unilever, at the same period of time here was Arnoldo Hax with Project Delta, and getting big support from Unilever at the very most senior level. But these things were probably in separate orbits, is that right?

P: Yes.... I knew about it, but my contact with Unilever was just that they asked me to come and facilitate a management meeting with their top 120 people in Leyden, Holland. That was 1996 or 1997. There I met the vice chairman, but there was no follow-up from that meeting.

The meeting was a total disaster. I basically tried to get them into a dialogue, and they couldn't talk to each other, but they didn't see that. [chuckling]

Unilever had one big business issue. I had several meetings with different Unilever people during this time period, partly to get me ready for this one meeting. They didn't grow. This is a company that averaged like 1% in a year of top-line growth. That was it. I'm sure that if Arnoldo had the attention of senior management on some level, that was what the attention was. We used to call them the "sleepy Dutch grocers," that was our tagline for Unilever. They had no energy, they didn't innovate, they didn't grow. We were trying all these different things to stimulate growth. Ironically, Unilever is a much more robust, innovative company today, and it's all because of sustainability. They are world leader in the business sector. The irony is, because they saw these really disruptive issues occurring in their environment – not only the Dutch, but the English chairman, he got it too, they both got it but I just knew the Dutch guy better – they really started to reach out and do some crazy, out-of-the-box things, one of which became the Food Lab. They did a joint project with Oxfam that we kind of brokered in 1999 or so, studying Unilever's food system in Indonesia. But they weren't going to get out of their.... I mean, they were a very, very, very looooowww energy, non-innovative culture, period. They weren't going to get out of that through any set of consulting interventions, no way, in my opinion, obviously. This is hindsight.

They are out of it today, because they've become a world leader on sustainability. They are one of the preeminent examples of how this really is business-critical, and if you get it and you can start to internalize that (and this has been a 15-year journey), you can really drive a lot of innovation because your context has shifted so profoundly. But management consultants didn't see that. Very few people did. The environmentalists saw that. The social equity people saw that. They saw poverty and environmental destruction wiping out the future of business, which it will do in terms of any stable environments. And that's what the Unilever people saw.

I'll never forget Bergmans' comment to me, bouncing around in the back seat of a Volkswagen van in Leyden, over the cobblestone streets. He turned to me – this is like 11pm after we'd had dinner before the next day's meeting – and he said, "You know, we figure if there aren't fundamental changes in the world's food and fishing businesses, we will not have businesses worth being in in two decades." I thought, well, there's a pretty good definition of a strategic issue. "We will not have businesses worth being in...."

P&G got out of food entirely, because P&G and Unilever were competitors on a lot of fronts, and they still are in health and beauty products. But P&G dropped food entirely about 5 years earlier. I'm sure there was a lot of debate in the Unilever board that they should do the same. They did get out of fishing. They helped WWF create the Marine Stewardship Council in 1999-2000, but then they saw the whole way that industry was going and they sold all their fishing businesses. They were really considering the same thing with all their food businesses.

B: The other orbit, and it's no surprise, are the economists. It goes back to Limits to Growth and what the economists had to say. We interviewed one of our Sloan School economists who said, "I don't know what this sustainability stuff is. It's the market, it's the pricing mechanisms of the market. That solves everything." Now, did you have to get any kind of interaction with Sloan School economists who think about sustainability in this very....

P: Yes, very narrow way.

B: Yes.

P: No, not really. Of course, having to lived through the whole Limits to Growth brouhaha, we all saw that. You could see the intellectual fault lines a million miles away. Today there is actually a society of ecological economists. You don't find too many of them here at MIT that I know of. There could be some. But the economics field – Jay [Forrester] saw this a million miles away, that's why he wanted to focus so much on the National Economic Model. He always felt that the economics profession was, sooner or later, going to collapse under its own weight because it had such a rigid, doctrinaire, *a priori* theory and narrow empiricist bias in econometric models.

I think John Sterman would be much more articulate on this subject than I am. Whether you look at experimental economics on the one hand, or ecological economics on the other, the economics field is in a huge state of flux compared to 30 years ago, where the hegemony of the mainstream was pretty absolute – particularly in this country, although less so in Europe. Europe always had a tradition of institutional economics, and political economics which originally was much more ....

B: Adam Smith was a political economist.

P: Exactly. But in this country, we always used to joke – and not mean it personally because it would never be accurate – that the long shadow of Paul Samuelson was really considerable. The bent toward quantitative modeling, whether it's *a prior* theory in that track of modeling, or the econometric. Just no rich, institutional orientation.

Anyway, the short answer is no. Having lived through that once, there was no need to. But the business people didn't give a shit about that. That's why I always go back to the practitioners. They're trying to make sense of this incredibly complex world and a few of them going .... "Something is changing...." and if we want to be around, as Unilever did, in another 30-40 years, we better start to understand it. So it was a business economics issue, not an economic theory issue.

But today I think that's very different. The Society for Ecological Economics has some terrific people. They publish a lot of books, they have meetings with a thousand people. That's a real – the young people in economics naturally were tuned in to these issues and gravitate toward that part of it.

B: OK, I didn't want to take you off of the journey.

G: I think it's a good point to follow up. You're talking about a period from about 1997 to 2001 or really engaging people outside the realm of what's going on at MIT.

P: Yes, absolutely.

G: It was probably about that time that things really started to pick up again within MIT. I know the SSRG (Sustainability Sciences Research Group)....is that what it stood for?

P: Well, it was originally Sloan Sustainability Research Group. That started before, but that was many, many years later, in 2006, 2007? I'm not sure. Jason Jay is the person who is involved in that. He would know when it started. He was a doctoral student, he was helping to

convene and organize. He was playing that doctoral student organizer role vis-à-vis that group. Of course, John was there from the beginning. And eventually it got a really strong cross-MIT faculty network.

G: Rick Locke had a major role.

P: Rick, John, Charlie Fine started to get involved. But yes, Rick and John, I would say, were the two anchors. That was gradually developing.

G: How did you get drawn in?

P: Most everybody knew about the Sustainability Consortium and the work had gone on, and then of course the Sustainable Food Lab as a focused collaborative initiative. There was a lot of – they just wanted me to be part of the meetings, so I would go to the beginnings. I've lost track in the last couple of years. But, yes, I was most all of those early meetings for a couple of years, whenever they got started. Maybe it was as late as 2009, 2010.[1] I think it was a little longer ago than that. I think *The Necessary Revolution* was published in 2007? It was 2008 when it was finally published. So that had come out.

Then, of course, the students were moving. The same with leadership. I think picking up that thread about leadership is a good idea, too. We can go back to education afterward. My perception was that often these were student-catalyzed. The students were really getting into sustainability, and I think what was happening was it was bringing faculty out of the woodwork who were always concerned, but again, they couldn't see how it fit with their teaching. But enough there are enough students, then it opens the door for the John Stermans who have lived with this issue their whole life, and Rick who was always very concerned about it, and people who like Charlie would come out. A lot of people who were, at a personal level, very interested.

It's quite parallel to what goes on in business, right? Issues are part of our world, as individuals are concerned. But if we can't connect to our job, then it's hard to have professional activity. You saw the same thing start to happen vis-à-vis business school

[1] Note: website for SFL says it began in 2004 in The Netherlands.

professors everywhere. In a three to four year period, all of a sudden these business schools have all this stuff going on around sustainability. I think a lot of that was student-initiated.

I felt the same way about leadership. Obviously, leadership is a different issue, it's a timeless issue, it's not a time-bound issue like sustainability is. I think – and this may be fanciful, I wanted to mention because it's something you can check with Ed – I have this strange recollection: remember Ed's old "Change" course? Pick a problem, pick something you want to change, and that's your course? There was a group of students who wanted to get leadership into Sloan School. They thought there was a huge gap, they knew it was very important, and nobody was doing anything in an organized way. I'm guessing this was 1997, 1998, something like that. I remember being interviewed by a group of students in Ed's class ....

B: We already had Leaders for Manufacturing...

P: Yes, we had LFM, but the Sloan School had very little offering – they said nothing on leadership at that time.

B: That's right.

P: I remember telling them, I said, "This is the way it will change." The students start agitating and something will happen. You can check that one out with Ed, but I do remember sitting in my office when I was over in the Herman Building, and the conversation with a student team from Ed's class, and being very encouraging. I said, "You ought to interview all the faculty, you ought to make a big stink about this, it won't help you, it will be long after you've graduated, but make a big enough stink and something will happen." And I think that did happen. I don't have the chronology very precisely, but I've gotten to know Deborah. Of course, I knew Deborah and Tom Malone and Wanda best, but I got to know all of them. I think it was Deborah who said, "We ought to create a Leadership workshop." Then the four of us met for about a year, because they all knew we had the Leadership workshop outside of MIT, right? What was originally Leadership and Mastery, and then SoL took on that program, it became the foundations for Leadership program. Everybody knew we had this basic leadership program

OUTSIDE MIT, and they said, "We should have a workshop like that INSIDE." To the four of met and designed what became the basic Sloan Leadership model and all that stuff.

But again, the activism of students is really powerful. I would suspect it's like that any place, but I think certainly within MIT, where you have a lot of faculty who have these very diverse interests, they are trying to do something that's relevant for students where they are at. That was really very helpful.

B: Did they bring it back in the classroom as part of that?

P: Well, we had this workshop, and then we ran it a bunch of times to prototype it, and then I said, "You guys should take this over," and they did.

B: And that was the start of the SIP concept?

P: Yes, it became the SIP workshop.

G: SIP or IAP?

P: Yes, I think initially it was an IAP workshop. Maybe it runs in both. I've kind of lost track of the schedule.

G: I think it preceded the time when there were SIPs and now that there are SIPs, that's one of the offerings.

P: I think that's right. I think it started as IAP. In fact, I remember co-leading it with them. We did as many as we could do, because you need a lot of cycles of practice to refine it and get it up to speed so everybody was equally comfortable leading it. But the four of us started off and probably did it four times the first IAP, or several times.

And then of course, Deborah had a lot of energy to grow this Leadership Center, and we all pitched in to be thinking partners for her. And now it's a real thread. And it was a natural. The students had such a compelling argument, which was: "MIT has been a leader in this

field for a long time. We and all our counterparts in Engineering, we're going to be in all kinds of leadership positions, Sloan School should be a real leader in this." And they knew enough of the history to know – I think they knew about Warren [Bennis], and Ed made sure they did a little study. So it was really picking up a thread that had been very important in the history of the Sloan School but had drifted away.

G: The other area that you haven't touched on at all has been your work in education. Does that go back to about that same time...?

P: Well, all these things are like forever. I've always been interested in education, I've always thought that in terms of the systems that shape a society, obviously business is the most powerful institution in almost all modern societies, even in China, although there you would say it's government and business. But in most, just the way our societies have drifted, right? Business has become such an overarching power center.

But education, particularly primary and secondary education, is the most important institution because no other institution has a 75-year time horizon. It's very basic, if you think about it in those terms. I watched Jay's career, where he focused initially very much on business, and then for all kinds of different reasons, he really made education his primary focus by the early 1980s. He was still plugging away with his National Economic Model, but his real energy, in terms of supporting people, was in education. And that made such good sense. I always had that in mind. But the opportunity wasn't there. For me, opportunity means there's enough pull, enough people trying to do something in the field that you could say "We can leverage this, we can help them, we can really do something." For me, it's always about practice.

I visited my first school, doing systems thinking, which I knew nothing about in education, in 1992, maybe 1993. I don't know if you would know a man named Gordon Brown? Gordon was Jay's mentor. Gordon was the dean of the Engineering School at MIT in the 1930s.

B: I didn't know him, but his name comes up in our interviews with Jay.

P: Yes. He's an amazing character, an Australian, with incredible energy. Gordon was just an inspiration to everybody. As far as I know – and I'm not an expert on this – Gordon

was instrumental in MIT basically re-creating its engineering education. If you look at the history of engineering education, what makes MIT (besides its labs and all the accomplishments of the lab) really significant historically, is its science-based engineering education, which really became established at MIT.

G: It's part of what MIT established, the field method, rather than the classroom method – the *manus* part of *mens et manus*....

P: Yes, and that you really had to have a strong grounding in science. I think there were threads of that before, but I think Gordon, again, take this with a big grain of salt, because I don't know the details of the history, but it's always been characterized to me... If there was one person in the world who is famous for leading the shift from a trade education to a science-based education, it was Gordon. Combined with practical application, which was always MIT's bent. But it's so basic today. The reason I say that is, Gordon had this saying, which became our tagline for all the work in education: "To be a teacher, you need to be a prophet because you're preparing your students for a world you can't even imagine, 50 or 70 years in the future."

In a eulogy to Gordon [1907-1996], I remember his memorial service, but I can't remember the gentleman's name. He was the dean of one of the Schools. He told this story: Gordon used to always say that (we all have heard Gordon say that), and he foresaw this thing that is so obvious to us today, that the pace of advance of science would make trade-based engineering education obsolete. You were training people in obsolescence, because if they couldn't stay in touch with the advance of the underlying science, they wouldn't be a good engineer in 30 years." Gordon said that, got everybody convinced of it, and MIT led that charge.

Gordon retired, moved to Tucson, AZ, and within a year or two (or maybe a month or two) ambled down to a local middle school and said, "Why aren't you guys doing system dynamics in this middle school?" When I visited that middle school four years later, they were. They had systems in everything. And in between, *The Fifth Discipline* was published, so they also got the whole systems perspective for their management of the school. That was the first place that had it in the classroom, had it in the management. They had re-designed their school so all the teachers worked in teams. They were into team learning, mental models – they had the whole nine yards. Simulations in the classroom, mental models and team learning in how

they were trying to manage. Diane, my wife, and I had spent a day there visiting, and I walked away saying, "Wow, this is what schools are going to be like!"

That was the beginning of a movement where the leaders of what today is called The Waters Foundation all were in that school. The principal, the vice principal, several of the teachers, are still active 25 years later (for them, because they got started in the late 1980s) in this as a national movement. Basically, there I can see it coming together. I began to say, "How can I help?", and I'd show up at meetings, I'd give talks, etc. *The Schools That Learn Fieldbook* was published I think in 2000, the first edition.

The only reason we could do that is there were enough schools in this informal network that were starting to do a lot of this. But we piggybacked off this one school that was there because of Gordon Brown. That was called the Orange Grove Middle School in the Catalina Foothills District, which are the suburbs north of Tucson, where Gordon lived. There are still teachers there, they are like third generation now. There are people who were literally students there, who are teachers there. And students of the students. It's fascinating.

B: That's a different entry than what Jay was doing, with getting system dynamics into some schools in Texas?

P: There's an organization based in Acton called the Creative Learning Exchange, which Jay helped get established, with a man named John Beemis, who wanted to put some money into education.

Jay said, "We'll create an organization that does networking, and brings teachers together, and has a website with a curriculum and stuff."

Then a little later – so Jay is very much involved in the roots of this – there is a guy named Jim Waters, a businessman here in Boston, who was very successful, again, is becoming a philanthropist, wants to put money into education. I met him, and Jay met him, and got him to go out and see what they were doing in this school. He said, "That's it, this is what I'm looking for. They are on the ground...." So the Creative Learning Exchange was this networking organization basically to share information.

The Waters Foundation eventually became, it is today, an operating foundation where they train teachers, principals, and help get schools on the path toward doing what this very first school had done. They are the ones who created these "habits of a systems thinker," which is brilliant work. Twenty years of innovation by educators. It doesn't look or feel today like something that started at MIT. There are little cards with "13 Habits of a Systems Thinker": e.g., "See the Big Picture", "Understand How Things Change Over Time." They have everything boiled down to these 13 habits, and tools for each of the habits. It's brilliant stuff because it's so clear and so simple that teachers can start to do it. Now you have literally pre-K teachers teaching little kids how to do behavioral time charts when they read a story, and the mood of a character. It's just absolutely brilliant stuff. And because of that, it's now spreading very widely.

MIT is all in the history of this, because it really was system dynamics evolving. But if you look at it today, you would say, "That never would have been created at MIT. That's so far different from how we've taught students system dynamics at MIT." That's because it's the work of really brilliant classroom teachers who have to find a way to make this work for a 13-year-old or an 8-year-old. It now covers the K-12 spectrum, or the pre-K to 12, because early learning is such a very important part of the education system.

The only thing I'll add to that, to complete the simple story of how I got involved – this network has been growing. First a network of teachers, then the Waters Foundation created a pilot group of 8 schools so they could look at all the things that create the culture of the schools, as well as transforming the pedagogy and instruction in the classroom. Then about seven years ago, all these people in the Waters Foundation – Tracy, Mary, me, Lee Stuntz – who was the founder of the Creative Learning Exchange based in Acton – all said the evolution of this has got to become a network of school systems. No way are we going to transform education one school at a time. But if we could build up a network of a lot of very influential school systems, particularly big urban districts where all the real problems are in magnet schools, maybe we can build a critical mass of school systems over the next 10 or 20 years. That became what is now called the SoL Education Partnership.

That's what we have today. We have about 12 big school systems very seriously involved, and another 10 getting involved. I just came back last week from two days in Baltimore with the new superintendent and the whole management team for the whole Baltimore city schools (that's 85,000 kids). He had come from Milwaukee, which is also about 85,000 kids

where we had got this started in Milwaukee. We had a schedule and I couldn't be with the Boston management team. LeAnne Grillo did that. Simultaneously, Baltimore and Boston, were introducing this with their management teams.

Now we're trying to take all the work that is going on in classrooms and school culture and rachet it up to school systems, which is where all the politics come into play, and a lot of the dysfunction, a lot of the real paralysis of American schools, because they have such dysfunction. The average tenure of a school superintendent in American today? A big urban district? Two years!

There is no way anything is going to change when you have people in that job who don't last. It's just a total mess. So that's why we said we wanted to work on the whole of it, including that. That was laid out in *Schools That Learn* conceptually, but nobody was doing it at that time. So just in the last two or three years, we are now starting to get really engaged with the school systems because they can see the work on the ground is really having a big impact on kids learn, how schools function. But we have to deal with the district and system-level management.

B: And you have sort of a learning community created as a result of this?

P: Yes. Typically, SoL is very loose-knit, informal, lots of partnerships, lots of emerging projects. I think there is going to be a second stage that is going to be more focused, because there has to be now.

We just had the annual meeting, which is always in summer. It was called Camp Snowball because the kids named it. We always have students, as well as teachers, administrators there. About 300 to 350 people out in Portland, Oregon. It moves around the country, hosted by a different school system. Portland, Oregon is in their year of a very serious effort, so they hosted it. It was a great meeting.

B: When we turn this off, I want to have more conversation about this, not because of my son, but because Tom Kochan and indirectly myself, we've been involved with the Massachusetts Education Partnership, with bringing the unions into the story.

P: Ahhh. I said the politics. It's the politics, the unions, the public – it's all that stuff which comes together in system management. It's a huge problem. But I think the unions are often made a scapegoat. But they have their own share of dysfunction, I'm sure.

Have you ever met Adam Urbanski?

B: I'm supposedly on one of his advisory committees, but if you know Adam, those advisory committees never meet. I will put this on the record. When I was at Cornell and doing arbitration work, Adam was then at an early stage of his union career....

P: He was in Rochester, wasn't he?

B: He was in Rochester, and for some reason he had gotten discharged. I, as an arbitrator, reinstated him. We go way back.

P: Teacher union president.

B: Yes. Then he set up this national organization with both the unions, TURN (Teacher Union Reform Network). I've been to some of those meetings. And my son, Bill, is a superintendent now and knows him very well. Recently, he got some grant from somebody and he said, "Bob, would you be on the advisory board." I said Yes, and I haven't heard a word since! [laughing] But he's a doer. He pulls people together, on the union side. He usually works through collaboration.

P: And you know, again, I think with unions, it's easy to scapegoat them, of course, and not without some reason. But the problems are much more system. And the system of a school, or a school system, is a hell of a lot more complicated than the system of a business. It's that simple. Nobody on your board tells you how to organize your product, develop a process. But people on boards have no problem, even though they are not experts at all, telling how you should teach algebra, because they remember how algebra was taught when Mr. and Miss who taught them was great, and they just loved them!! It's a much more complex system. Stakeholder network....

B: Yes, a lot of stakeholders.

P: Yes, and they have voice! They have power! And they can paralyze anything.

B: In Connecticut, they run on a political affiliation.

P: Yes, many states have that. It's mandatory, that you have to have a partisan board. And guess how much they accomplish??? [laughs] Of course, a lot of people with political aspirations use these boards as stepping stones. So they have zero interest, zero knowledge. We found one school system outside of Denver, a pretty good-sized one in the suburbs north of Denver, that has a qualifying process for the board. Board members have to go through a year of qualifying before they are considered a credible candidate to run. They still have elected boards, but boy, that makes sense. So even if you're not a professional educator, you have to demonstrate that you really care about this. But that's the antithesis of what you see in a lot of cases. The people don't give a shit; they don't know anything; they have opinions up the wazoo. I'm sure your son has a lot of experience with this.

You have dysfunction at the board level; you have dysfunction at system management because of this crazy turnover. The other thing you notice if you're in education if you're around enough is that there's very little developmental process as managers. Educators have all this personal development, but it's all focused on being a good teacher, which is appropriate. But these people are in important management jobs. In universities – what qualifies you in being a tenured professor to manage a damn thing??

The two tracks I see for superintendents, they come right out of teaching, or lawyers. You see a lot of people who are legal counsel who become superintendents. Because guess what? Some of these school districts are in a perpetual abyss. The Tucson Unified District has been in court-ordered desegregation for 15 years! Not surprising you get people as lawyers.

There may be a few, but we know, yes, education is great. But the developmental process on the job. Good businesses have developed good ways to help mentor managers on the job, right? There is virtually none of that with schools.

The management savvy in school systems is very poor, I would say. There are deep problems.

B: I have one question. Going back – this will put you into a kind of generational observation – you were a youngster on the block when you were dealing with Chris Argyris. Now you are no longer a youngster on the block. Who are some of the people who will be the next generation, whom you have helped influence?

P: Well, at some point, you really look at two generations, right? You look at people who are 40 year olds. When we were with Chris, most of us were about that age. But then of course, there are people who were 10-15 years younger than that.

For me, it would start with Otto. He's 15 years younger than me. I think he's right at a point in his career where it's just taking off. He's really becoming well-known. I try to spend a lot of time with him. We had a two-hour chat at the Academy meeting. You take the chances you get, you know? Just personal, where he's at, because I can identify where I was at pretty much a similar age 20 years ago, when *Discipline* started to take off. So when you have a million people tugging on your sleeve to do a million things. And as he said, these big life challenges, how does he make the right choices to allocate his time right now? That is, of course, exactly the big challenge, and he could waste a lot of time doing things that would look interesting but not have any long-term impact. I would say Otto is someone who is really at the middle of his career, in a take-off stage in his career.

B: We want to show that earlier you helped Otto come here, didn't you George?

P: Yes. George was here when Otto came to do his habilitation and moved from Germany.

G: I got his letter saying he'd like to come, and I said, "Well, this looks good, and we can pass it around..."

P: Good idea! You need to have a second good Deutsche here, right? That was fortunate. Because of course you take in a lot of people.

Daniel Kim was the same age range. George knows Daniel really well. I stay in touch with Daniel. He's become basically a full-time consultant, but he's very, very good, he's done great work.

I've sort of lost touch with Bill. That's mostly personal stuff. To me, Bill was always SO commercial in his orientation, and it just wasn't as natural a partner and mentee. Whereas someone like Otto has such a big vision, as has Daniel. They really genuinely want to contribute to the world.

We're starting an effort now, because it's such a strategic question for all of us, we're just calling it the Next Generation Leaders. We're actually going around the world, a small group of us including Otto, identifying people in their mid-30s who we know have tremendous ability today and tremendous potential. We could work with them as a group, and each of them in turn, should grow 50 leaders in the next 10-20 years, in China, India, Europe, Latin America, so we can start to develop a global network of leaders of this kind of work. We're calling it the Next Generation Leaders effort.

B: Are they academics, practitioners...?

P: A mix. Otto and I have the vision. He's written this up. We've worked on this together, but Otto has done most of the work. It's useful, this big global vision, which would revolve around a set of hubs around the world. Our immediate goal is Cambridge and Beijing, and maybe Sao Paulo, we have one in the Southern Hemisphere. Hubs around the world where you've got a robust community of these next-generation leaders doing application projects and tied to universities. In China, it will be tied initially to Tsing Hua University, because we're now professors there, Otto and I are both part of a program in China that identifies key talents for the future of country. No other country in the world has this, but China actually has an HR director, believe it or not. His role, any way you describe it, is HR director for the country of China. He sees this systemic change as being crucial for the future of China, he thinks China should be a world leader, and told us we could be professors at any university we wanted. We picked Tsinghua.

Our goal is to get this established as action/research/doctoral programs at key universities. But you can't do that if you don't have the right partners in the business world, right? It's the same old problem: you can just establish it at a university; you really need business or organizational partners (in China it would be government AND business). Right now, we're pulling together a network of the right kind of businesses that really are the kind of innovators we would have wanted in our Organizational Learning Center 25 years ago here at MIT. We'd like to get the action/research/doctoral program established at MIT and Tsinghua initially.

We had a long conversation with Dave about this, 2 years ago, our dean, and he got really enthused about it. The way to frame it would be a Doctorate of Practice, because it wouldn't be a PhD, because you're not training people to be academics primarily. But if you got that going, those people would end up at a lot of universities around the world where people are not quite so persnickety about all your publications. But they have to be able to do field research, they have to be able to write and organize their ideas, and have to be leaders in their field intellectually as well as in practice. They have to be bridge-builders between the world of practice and the world of theory.

Otto has thought about this for much of his life. When he was a doctoral student back in Germany, he and Katrin led a really interesting innovation in a doctoral program while they were still students. They had this cohort traveling all around the world. It's something he has very core to his own personal vision.

So that's our goal right now. The U School is the big umbrella. The Next Generation Leaders Program is the initiative we're focused on right now. We're raising money, we're interviewing people right now. It will start with synthesizing the initial interviews with the candidates in November, and it will get started in January. We will keep it real small initially, maybe 15 or so, and they will probably come from the US, Europe, China, and Mexico, because those are places where we have really good connections. We'll leverage our Food Lab network, so Hal has identified people he's met, in their mid-30s who he thinks are ideal candidates.

We have three young women in China, all of whom are crackerjack facilitators, in their mid-30s to early 40s, really good people, really have the right personal character. But they are not connected to any university yet. I think that will come. Once we get this started, we're going to try to get established at Tsinghua as well. There is a dean there who we work closely with at Tsinghua and he gets it.

B: Well, there's a lot of traffic, as you well know...

P: MIT- Tsinghua, yes. That's why we picked Tsinghua.

B: We're into a 20-year relationship there.

P: Yes, I know. And I know the guy who is president there, actually the retired president. He's the head of a climate change experts committee in China. Yes, we picked Tsinghua for all those reasons. Although eventually – Alan White coached on this years ago – he said every Chinese university is going to have their own unique approach.... they are going to be "THE LEADER" on this, as they did with the MIT dual-degree thing. He said "Eventually you will want four or five universities in China, so they have to work together." That's our goal. Get a start at Tsinghua, and then branch out to two or three other places. I have a pretty good idea of what those other places should be.

But, the focus for all of this is to accelerate the global development of the next generation of leaders who can be boundary-spanners from the university to practice. My guess is, some of them will be primarily consultants, some of them will be primarily university people, but all of them have to be good at both. That's what we will try to design into this program.

The U School lays out the big vision, but we haven't been able to get it off the ground because Dave – after he inquired, he got really enthused about it – he said, "Well, there could be a doctorate, not a PhD but a doctorate." Harvard started this in the Ed School. The model for this has been established in the Ed School, they call it a Doctorate of Practice. Bob Keegan set it up, and we studied it, we know Bob really well. It was the first new doctoral-level program created at Harvard in 30 years. It's for training superintendents. All these superintendents have to have PhDs, but they're not going to be researchers, that's a total waste. They said, "No, there's a different niche." They had 2,000 applicants for 20 positions the first year!

B: It's only in the second year or so, isn't it?

P: Yes. They graduated their first cohort, they are three years into it.

That's the model. We'd like to have that for systems change.

But Dave came back after his first cycle of checking out around MIT and he said, "I think it would take at least $20 or $30 million to get this launched." [laughing]

We said, "We don't have $20 or $30 million right now!"

My feeling is, if we can get it started in China, and we are AT MIT, I think we will find a donor or two. The idea of an MIT/China partnership, building on the MIT-Tsinghua history of partnerships, with this global network of people who will be their next generation. It's got to get embedded in the cultures, right? The way it's going to be done in China is going to be totally different than in the US. The way it's done in India – it's got to be culturally embedded. That's why the vision of this global network of hubs, each of which is culturally embedded, is the only way it will ever happen. I think if we can get that started, we will find some people with the money to make it happen.

B: Was Dave using that big number because we were going to go up to scale in China and go to all the schools that we had partnerships with?

P: No, we were looking just at MIT. I've mushed together a couple of timeframes. We had a conversation with Dave two or three years ago. At that time, we were trying to get started at MIT. We had the idea of China, but the fact is now, in the interim, China is doing it. I think we're getting close to being able to come back to MIT. I don't know, Diana Walsh would be a great champion. She's on the Executive Committee of The MIT Corporation. She's a former president of Wellesley, a close friend, and we've worked closely on a lot of different things.

We have it established now. We just have to get this program going. And we have to get some money put up to create the Chinese hub. We're pretty close now. Then we get a few million to get a Cambridge Hub. This is the way Otto and I are thinking right now. All this will probably be, at best, approximate. Get it started in Cambridge, but unofficially connected to MIT. There is a Beijing hub in China, and a Cambridge hub. We know what we want to see going on, we've started to identify the young people to get involved. Then somehow have Tsinghua and MIT start talking.

MIT should really be officially connected, because Otto really wants to have a degree-granting program, and he's right, there should be a degree-granting program. It's just that we know that to design the program it has to be really different. It will dovetail with so many things we've all talked about for years.

G: Singapore is also a very innovative, accepting place that is....

P: Singapore would actually be low-hanging fruit, in a way.... Singapore would be very open to it. But they don't have – if we are going to do it in Asia, we have to do it in China. And since we have this ridiculous open door in China right now – when we tell people that the champions for this, the head of the talent program, his predecessor is now the vice president of China – this is a Central Committee guy who is extremely influential. And the other big champion who is organizing all the Ideas programs is the Vice Minister for Organization. China has a Ministry of Organization. Mao Tse Tung was a vice minister of organization. Chou En Lai was a vice minister. China just gets organization! That's a critical part of the Party's stance. The Party's view was always that organizations are critical. How people work together. The Party is an organization.

B: That's the only way they've maintained order in their role is to focus on – how else can a country that size be governed unless you worry about organization?

P: Yes! The Vice Minister of Organization is a super-influential guy. And we have these two guys who have opened this huge door for us. Our big sticking point is they want us to be six months a year in China, and we can't do that. But we're trying to work our schedules, for Otto and me, to be there at different times.

We're both in this program now. I don't think there's ever been a social scientist in this program. This is called The Talent Program, and they recruit people from around the world to help China to develop its critical talent. When China wanted to start a space program, this is how they did it. Almost all the people they recruit are Chinese nationals whom they can bring back to China. Occasionally they will recruit a non-Chinese person, but it's always been in engineering science or arts. It's science, engineering, and the arts. This guy says, "Well, systems

change is going to be a new science, and China should be a world leader," so they've made us part of that program. Basically, we can do anything we want. It's an amazing opportunity.

B: That's wonderful.

P: That's a long answer to your question about next generation. I think this global hub vision is the right one because it really should be a global effort, embedded in different cultures, and hopefully we get this started in China and Cambridge.

B: That's terrific.

G: I had one question, it goes back to a comment about your dissertation, dealing with the economists and the challenge of solving problems in their context, and would that ever be an accepted methodology of Sloan? And this is really the same issue. The Doctor of Practice is solving problems in context.

P: It is. That's absolutely right. My hunch on this, at MIT, since this is our common denominator sitting around this table, is that it has to get started either in the Engineering School or MIT Central. I can't imagine this actually getting completely started in the Sloan School. You know, DUSP has a lot of flexibility.

G: I think the work that John Sterman and Bob Gibbons has done, with the support of John Reid, could really help in that direction.

P: That's interesting. I'm really out of touch with it. But is it application-oriented enough? I should go back to John and bring him up to speed. The way we have been drifting is DUSP (Department of Urban Studies & Planning) because it has a lot of flexibility, they have all these innovative systems. That's one place at MIT that's always had a strong practice orientation. And of course, the Engineering School has a strong practice history. I've always thought Sloan struggled with this, and we're still way too influenced by the economists, when you get right

down to it. And, of course, the management scientists. Individually, of course, people do a lot of consulting, but as an institution..... That's why my intuition would always be....

DUSP is SO different. It's kind of a polyglot of all these different things. But we could create a doctoral program in DUSP right away. They have a doctorate of practice sort-of program already.

G: So you don't have to go in front of The MIT Corporation....

P: I don't think so. But if we're going to do this, and it's going to be a Tsinghua, then I think it has to have an MIT imprimatur at the top level, because that's what we will be going for at Tsinghua. There's a dean of the School of Public Policy who is the main champion at Tsinghua. He's a great guy. He actually went through the first IDS program. He really gets it, he's a wonderful champion, and I think we'd have no trouble at all (I've met the new president of Tsinghua) getting that sort of endorsement from Tsinghua. If we have that at Tsinghua, we should have something comparable at MIT to really build the partnership. I think we're maybe a year away from that.

Anyway, all of that could hopefully get us to a place where we really could create this sort of doctoral program at MIT. It would be the perfect place to have it in the US, right? It's culturally right. I don't know where the Sloan School would fit into that. We'll see who has energy for what.

I should get caught up with John. I will make a point. If we are getting close on this thing....

B: I'm just trying to think of who in Engineering would be good.

G: Just to step back from MIT – if you look at the emphasis that we put on action learning, what is that but a Masters in Practice! That's a key place for them.

P: That's really true. And whole lab phenomena at the Sloan School... It's been very encouraging. It shows that old lab mindset, action mindset, hasn't died, the DNA is still there.

G: No! More than anything the emphasis is getting greater. Bob knows, they are going to be searching for an executive director for the Action Learning program.

P: Wonderful.

G: So the orientation is there; maybe the connection is not...

P: Otto has been pulled into the DUSP orbit. Dayna Cunningham has got him over there. He's just seen it to be very open, very eager. They have a big global food – I don't think they call it there. They have the Poverty Lab, with some big food initiative. We kind of got pulled in because of all the systems change. Not business change, but systems change stuff, which gets nurtured over there in DUSP. But still, I think this is management and leadership development stuff at some other level, so it could go in a lot of different ways. But right now, we're playing our China trump card, and we'll see how it goes.

B: And managing your travels to that country....

P: Yes, it's challenging, it really is. I've gotten used to it, but still, it's a long way. We have basically gotten to more or less agree that it's the amount of time we're focused on China, not the amount of time we're in China, that should really matter. And now we've got these three Chinese women in the development program, we'll be spending a ton of time. We'll be connecting them with Food Lab projects, stuff going on all around the world. So there is a real investment there in future leaders in China. Once we get that going, I think it will be easier to convince them that we don't have to have our physical bodies in China six months out of the year.

B: Well, this is terrific.

G: Thank you! We've not only caught up to the present, but we've looked into the future.

P: Catapulted into the future. Hoist on our *petards*!

END OF INTERVIEW