Ron Howard, interviewed by Tom Keelin, Saturday, November 8, 2014

Family Background

TOM KEELIN: It's my pleasure to introduce Professor Ron Howard of Stanford University. Ron has been instrumental over his career in the development of decision analysis. I'll be interviewing him for the next hour. My name is Tom Keelin. I'm a former student of Professor Howard's, and a longtime friend and professional colleague.

Ron, would you please describe your family background, where you grew up, family, siblings, parents, work, education?

RON HOWARD: You know, that's quite a story, because both my grandparents worked on the Titanic. Both my paternal grandfather and maternal grandfather worked at Harland Wolff Shipyards in Belfast, where the Titanic was built. And that was part of Northern Island, of course, as it still is.

And then my mother and father met in Northern Ireland and became engaged. And my father decided to come to the US as an immigrant, which he did in 1926. And then my mother came over in 1927, and she stayed at the minister's house, and they were married the next day. So I'm a first generation American.

TOM KEELIN: Boy, that's very interesting. You once told me, Ron, that you spent lots of time in the library when you were growing up. How, and why so?

RON HOWARD: Well, during the Second World War we lived in what in New York is called a candy store, which is something that's a unique New York institution that had a soda fountain, that had magazines, and candy, and greeting cards, and tobacco products, and so forth. Housing was tight, and we lived in one room behind this store from about '40 to '45.

And that was a great experience, because right across the street from the room we lived in was the library of the town. And I found that you could check out half a dozen books for a week at absolutely no charge, and it was like 50 feet from where we'd gotten out of the store. So that was a great experience. And I did that.

As a matter of fact my mother, signed slips that "Ronald's not feeling well," right up to the point of truancy, because I was learning a lot more from these books on everything from opera librettos to The Boy Electrician than I was learning in the store.

And I had one other advantage, and that is we had all the magazines of the time-- Life, Saturday Evening Post-- all the newspapers, because people would stop there to pick them up. And so I

could read any magazine-- Popular Science whatever it was-- and any newspaper as much as I wanted-- of course without harming it in any way. And quite a wonderful education.

And I went to the very exquisitely named PS 138. Queens, New York. Talk about running out of imagination naming schools. Well, PS 138 certainly did it.

Early Education

TOM KEELIN: Was that your high school, Ron?

RON HOWARD: That was my grade school. I went there from until the fifth grade. Then, my mother took me back to Northern Ireland to see her mother, although her mother had died. And so I spent instead of the sixth grade there, at the house of my grandfather.

And my mother had the the local schoolteacher tutor me a couple times a week. So I ended up learning algebra during the sixth grade, which is a great advantage. And I learned things working with him that I never learned-- would have learned until high school, when I came back.

So that was the sixth grade. Then we came back. And at that time, the war was over, and housing was very difficult. And so we ended up living in a hotel room for a year. And at the hotel room, with the bath facilities down the hall. We had a sink where we slept. And that was the year 1947, in Rockville Center, New York.

And that was a great experience, because essentially, I went to a public school there with certainly the best teacher I ever had at that level in the seventh grade. And college students would come back to say hello to her. And so I knew that I was in the presence of somebody who is really dedicated to education. So she taught me English and math. So until this day, it was great to think of all she must have affected in my education.

TOM KEELIN: So following that, obviously you went to high school, college, graduate school.

RON HOWARD: Yeah. Actually, there's one other thing. By accident, I never went to the eighth grade, because when I graduated in the seventh grade in Rockwell Center, it said "promoted to high school." And high school started in the eighth grade in Rockville Center, but in the high school I went to, in Lynbrook, high school started in the ninth grade.

So either my mother or I corrected this misimpression. So I went into the ninth grade in Lynbrook High School. So in fact there's a big gap in my education, like "House of Cards," maybe they'll find I never went to the eighth grade. So that was Lynbrook High School where I went for four years, and had a great time. Four of us went to-- this is a high school of about 120 in the graduating class, and four of us went to MIT, which is quite a fraction. And all of us graduated.

TOM KEELIN: In your high school, college, and even graduate years, what subjects did you find most interesting and engaging?

RON HOWARD: Well, that's a long story, because I started out in electrical engineering, which I liked very much. But then I wanted to do something more broad than that. And so I got another bachelor's degree in economics. I had a bachelor's in electrical and a bachelor's in economics.

And that was possible because at MIT they had something called an advanced standing exam. And what that meant was, if you could, if you get the professor to agree by petition, then by spending $5, you could take the final exam he would prepare. And if you passed that, then you got credit for the course. So this was a very inexpensive way of getting academic credit, and allowed me to finish in the four years, though I was working every summer.

Inspirational Teachers and Doctoral Work

TOM KEELIN: During these school years, what people, ideas, or events most influenced your thinking and your ultimate career interests?

RON HOWARD: Well, one of the people that made a big difference in my life was the teacher of science in the high school, Mr. Carr. He taught physics and chemistry. And we got along very well.

And he would give me the run of the science laboratory after school was over-- unsupervised. Something you'd never see today. So I could I had nitric acid and toluene-- I could have made TNT. I did make fermented alcohol, and made hydrogen, and flew the balloons, this. Just, I had the whole lab to myself.

Of course, I never did anything that would cause him a problem. But what a wonderful thing. And I said, wouldn't it be great if any student had this opportunity to have a whole science and physics lab to themselves while they're a senior in high school?

TOM KEELIN: Any particularly inspirational professors in college at MIT?

RON HOWARD: Well, more in graduate-- there were a couple that I liked. But I had some very, very, very broad-ranging professors. And I remember taking a course in probability in connection with the economics course. And I'd learned a lot of probability already. And so I made a deal. This was Robert Solow, who later got the Nobel Prize in economics.

I said look, I'm enjoying taking your course, but I've taken other courses, and so your problem sets are not really challenge. How about I make up and solve my own problems? And he said that'd be great. Of course, he could use them for any purpose after that. And I've been waiting my whole academic career for some student to make me that offer, but it hasn't happened yet.

TOM KEELIN: Ron, what was the focus of your PhD dissertation, and what led you to pick this topic?

RON HOWARD: Yes. Well, there was one incident when I was in MIT that made a big impression on me. I went in the physics department I just happened to drop in on this talk given

by a fellow called Stanislaw Ulam. He was a physicist. And I learned that he had worked in the Manhattan Project on the atomic bomb.

And what he talked about was something called Markov processes, which sounded like something I'd never heard about before, and was pretty interesting. And so that piqued my interest in it, and that became a focus on most of the graduate research that I did, including in my final thesis, with big, big, big impact, and completely random as far as I know.

Academic Career Choice

TOM KEELIN: When did it become clear to you that you wished to pursue an academic career, and were there particular people or ideas that inspired you in this direction?

RON HOWARD: Academia. Yeah, that's kind of interesting, because when I was a graduate student, I just did it a year at a time. I wasn't thinking of what I was going to do. I just enjoyed what I was doing. So I got these two bachelor's degrees. Then I went another year. But by this time I was married and had a child.

And so in one more year I got a master's degree in electrical engineering. And then I found by spending another year, I could get something called an electrical engineer degree, which was another year of study. And so I did that. And then I found you can also get this thing called a doctorate, which never appeared in my thinking before. But that sounded like a good idea. So I signed up for that and got my doctorate.

And so those were the three years I spent in graduate school. I was on a fellowship, but I had a wife to support, and a child. So I got permission to work in spite of having this fellowship and a stipend. And so I ended up working two days a week all the way through graduate school. So for those three years.

And where I worked was the operations research group of Arthur D Little, which was the outstanding operations research group doing commercial work at that time. And at Arthur D Little was George Kimball, who with Phillip Morse at MIT had written a book, Methods of Operation Research, about their experiences during World War II in using operations research methods.

And so George had been professor of chemical physics at Columbia. And he then moved into the industrial world. He was kind of a senior VP of science stuff at Arthur D Little. And Phillip Morse was a professor particularly in the acoustics area at MIT. So they were the two people that I spent most time with on research.

And they had very complementary styles. Phil Morse, his way of approaching it was your write all these equations to describe the thing. And they might look hard to solve, but, boy, he would beat his way through until he solved them.

George Kimball came at things the other way. He'd find that the simplest representation of something-- so simple, you might say, this doesn't make any sense-- and all of a sudden you'd say, of course! This is the key to the whole thing. So they were a great combination.

TOM KEELIN: So now, somehow, did that inspire you to move toward an academic career, as opposed to a commercial, let's say continued consulting career with Arthur D Little?

RON HOWARD: Well, I was enjoying working at Arthur D Little. And actually, I got an opportunity to be an assistant professor at MIT. But that was not surprising, because they would hire many times as many people-- maybe six or seven-- as they had place for-- at least in those days. And so the idea was, well, if you didn't continue in an academic career, then you'd get a very good job someplace else, if you were, say, at Harvard or MIT. So that's what I was doing.

And I was also working at a consulting company. And this was as well after Arthur D Little. I also had other consulting opportunity. And this one was called United Research.

And previously, when I was a doctoral student, I remember having a conversation with my fellow doctoral students about, well, how much money would we have to make to feel really comfortable? You imagine it today. I won't have to worry about money. I'm going to get a house. I'm going to get everything I need. How much would that be? And you pick a number today. But that was, of course, a lot more than I was making as a professor.

So one day, the president of this company called me in. And he said, we'd like to offer you a job as director of research at-- and he named exactly that kind of number. And I said, gee, I have to think about this. They said, OK, let me know on Monday. This was Friday afternoon.

So that afternoon I went back to the first floor of a two-family house where we lived for $89 a month, having two children and an old car. And I said, this was a great opportunity. And of course there were no promises at MIT. I mean I had not ever been reappointed.

So that was the weekend I said, look, what do I really want to do with my life? Am I really enjoying this? Is this me? And by Monday, I said, yeah, this is what I'm doing. I don't know how it's going to work out. But this is what I want to do. So that's when I chose an academic career, without knowing I'd ever really get, but I was there.

Moving From East Coast to Stanford

TOM KEELIN: When and why did you end up choosing to move from the East Coast to Stanford?

RON HOWARD: Oh, yeah. That's another great story. Well I had met Bill Linville, who was a professor in the EES-- sorry in the electrical engineering department at MIT, when I-- actually this was when I had just finished my bachelor's degree. And that's a long story. But by accident I got to know him. He was a consultant for the summer at Raytheon Research Labs, and I had just graduated with my bachelor's degree.

And so we spent a lot of time together in an environment that was unusual for both of us. And he's the one who said, you ought to be seeing these people at Arthur D Little and getting a job there. So he was responsible for all of that, and, of course for recommending me for these fellowships and things that took me through graduate school. So he had a major influence on my career.

Well, once I graduated and decided to stay at MIT and continued into operations research with-- I became associate director of the operations research center at MIT with Phil Morse, and we'd travel around the world, all kinds of things. But I kept in touch with Bill. Bill had left MIT for Stanford. But we were still professional colleagues.

So in 19-- I guess it was late '63-- he said, how would you like to come out for a sabbatical year at Stanford, which I was due for at MIT anyway. And he said, you know, you can just come out for the year, and finish writing your book on dynamic programming and mark-up processes, and you'll enjoy it. Bring the family. So my wife, four kids, and a dog left our split-level in Lexington, Mass and went to Paolo Alto and spent the year there thinking it would be a great, fun year here in California.

And then, by the end of that year, I had started into something called decision analysis. And also I had liked what I was doing at Stanford, and decided, when I had the offer, to come to Stanford as a professor. So that's when I became a professor at Stanford full time in 1955. '56.

TOM KEELIN: '55 or '56?

RON HOWARD: Well, I'm sorry. '65. Sorry. '65 to '66. First year. So that's been a long time ago, right? Many, many years.

TOM KEELIN: Well, almost 50 years ago.

RON HOWARD: Yes. Yeah, that's right.

Early Development of Decision Analysis

TOM KEELIN: Your doctoral work, Ron, and your first two books, focused on Markov decision processes

RON HOWARD: That's exactly right.

TOM KEELIN: And especially on the intersection of decision-making under uncertainty and optimization. Your later works and teaching tended to emphasize decision-making under uncertainty, and the principles underlying that, and put much less emphasis on optimization. Why so?

RON HOWARD: Well actually, it's a matter of what kind of data that we have at the time to support the dynamic programming and mark-up processing. That was one issue. There were very few situations where you had what you needed to get transition probability and so forth.

We found one at Sears Roebuck that really worked out. It was a great application. And they really improved their profits and it made a lot of sense. But that was most unusual.

Now today Safeway knows more about my grocery shopping habits than I do. And so that data is out there for anybody. So actually, what I worked on then is much more applicable now than it was then.

But what I got interested in was working on what made people lay awake at night thinking about making a decision. And that wasn't those things. Those were operational decisions. And so that's why I said, OK, that's what I want to do-- work on those problems that are really hard for people to think their way through, no matter in what area they are-- medicine, business. And that's the focus that I've had ever since.

TOM KEELIN: So in 1964, while at Stanford, it is said that you coined the term "decision analysis." Tell me a little bit about how that happened, and what led you to this particular choice of terminology.

RON HOWARD: Well, that's a relatively simple story, because when I was out for that sabbatical year writing my book, and I also had as a contact a fellow called Sherm [? Naymark ?], who had been in a course I gave called the modern engineering course under GE. They had a six-week residential course.

And in that course, I had taught statistical decision theory, mark-up processes, and things like this. And when Sherm, who was the head of GE Nuclear in San Jose, knew I was coming out for the year, he said, look, why don't you teach what you were teaching us in that course to my people here in GE Nuclear?

So I said fine. And so I spent a couple of hours every Monday kind of going down and teaching this course. Well, after about the third week, somebody came up and said, well, you know this is all very interesting, decision theory and balls and urns and so forth. But we have this big decision to make. Should we put a super-heater on our power reactor? And we're really concerned about that. And his name was Howard Cook. He was a thermal engineer. And I said, well, why not?

So through the course of that year, we applied this way of thinking to this very real decision problem they had involving the material lifetime involved in this change-- that if it came out to a shorter life, it would be a very bad thing to have done. A long life would be fine. So it was uncertain how long the life would be, and we encoded probabilities and so on.

Well, it turned out in the analysis that the length of life of that material really was not important in making the decision, because they could engineer in a different way-- I won't go into the details-- to isolate themselves from that.

And what turned out to be the real issue was their time preference-- how long were they willing to wait for a return on this. It's a very large investment. And they hadn't even thought about that before. So the decision was made not to proceed on the basis of this analysis.

Well, so at the end of that academic year, there was a conference in Boston-- I think it was an ORSA conference-- where I think Howard Raiffa was chairing the session. And I gave a talk in it that I wrote up describing this work, and what am I going to call it?

And I thought initially "decision engineering," because that's really what it was. But that had a flavor of maybe I'm going to try to make it come out a certain way. So I said "analysis" doesn't have that. So, decision analysis. And so the paper was entitled "Decision Analysis," colon, "Applied Statistical Decision Theory."

TOM KEELIN: Did you have any particular collaboration with Howard Raiffa in this regard?

RON HOWARD: He had, when I was at Arthur D Little, as far as I remember, he had given a talk there. And I believe that's the first time I actually met him. And then, as soon as I graduated-- like 1959, '60-- he asked me to teach in a program he was having at Harvard Business School called the Institute of Basic Mathematics for Application of Business.

And that was a very interesting program where-- I think it was the Ford Foundation sponsored business school professors from all over the country. And they had to be recommended by their deans, and so forth, to get more mathematics into business teaching. And it was a residential program. Came out with their families for a year.

So Howard directed this. He started it. And then there were a couple of other professors who respectively taught optimization and probability. And I did mark-up processes and computation on one day a week. I wasn't there full time.

And that was great, because several of those people became deans of the famous business schools in the future. And it was a great opportunity to meet such people.

TOM KEELIN: In retrospect, how happy are you with the choice of terminology, "decision analysis"?

RON HOWARD: I think it would be hard to change it in a way that improved it. In other words, "decision engineering" is more accurate, but easily misunderstood. And so I like the idea that what we're going to do is think about all the factors that influence a decision, put it together with very clear thinking about what we want, and what the alternatives are, and how ignorant or informed we are, and arrive at the best choice we possibly could given the limitations of our knowledge, and the existence of our preferences, and the best alternatives we've been able to think of for what to do here.

Decision Analysis as a New Profession

TOM KEELIN: As your teaching assistant in decision analysis classes at Stanford in the early '70s, I recall you telling us students that decision analysis is a new profession. What led you to believe that it would become so at the time?

RON HOWARD: Well, the early '70s would have been five or six or seven years into what we had seen going on at SRI International, and our decision analysis group. And it was pretty clear that this was a very new and helpful way to help people make decisions that were really bothering them.

I mean not little decisions, but really big decisions. I mean, some of our projects, were for Mexico-- whether they should have a nuclear reactor, a power reactor in their electrical system; the launching of the Voyager space mission; marine fisheries. All kinds of issues that came up. So it didn't seem as if there was any the limitation to where you could apply it. Just the limitation of people wanting to think this way. And I think that that is still true, that we have just scratched the surface in terms of improving the quality of decisions that people are making in the world.

So it is a new profession, but it's not one that-- it's what it takes a while to learn, in terms of the theoretical basis, and then that's not sufficient. You have to know how to actually carry out in practice, all the conversations that you need to show people how to get the vague things in their head into a form where we can all look at them and agree on what we're talking about.

So that clarity of representation is the key clarity of thought in terms of being able to think straight about complicated situations. And then, finally, achieving clarity of action, which is what are you going to do now that you're thinking straight?

TOM KEELIN: And I guess at that time in the '70s, you already had the experience under your belt of many years of consulting both at, well, Arthur D Little, and then SRI International. You had seen the value in practice.

RON HOWARD: Oh, yeah. Well, I remember when I was a graduate student riding with George Kimball and another fellow who was a senior consultant at the Arthur D Little operations research group on the overnight train to Detroit, which was great. You don't see this kind of crowd.

We get on the train in Boston, and you wake up in the morning very close to your client across the street, the Michigan Bell, which was the client, and around the board room. And here I am, like a 22, 23-year-old person, with these very experienced people; and with this company that had a real problem. It was a very, very challenging mathematical problem that we were able to represent and solve for them using the new-fangled computers-- the computers that if they didn't have punch cards, they'd punch paper tape in which you put the instructions.

So the computation was relatively primitive, I mean, compared to anything we have today. But it still could make a big difference in what they were doing in terms of making the decisions, in their operating decisions, and also the more strategic ones in their business.

Waking Up

TOM KEELIN: Ron, in the early 1980s you experienced what you later described as "going crazy."

RON HOWARD: It was actually '77. 1977.

TOM KEELIN: And it was for a several week period. And your medical diagnoses while in the hospital confirmed this. What led up to this event?

RON HOWARD: Well, their' view of it and my view of it was very different. And it was really a weekend. We're talking about from Friday till the next Tuesday or something.

And what I experienced was that I was waking up and becoming sane. But to other people, becoming sane seems very strange. So I ended up being-- it takes about six hours to tell the whole story, but it's the best thing that ever happened to me in terms of changing my life.

So I'll tell just a little bit of it. I was locked up in the mental ward at the Santa Clara Hospital. People would think I was intending to hurt myself. No I wasn't. But so there I am, sitting, tied down to a hospital bed that night. And they keep trying to put pills in my mouth, which I kept spitting out. And finally they just injected me against my will, with it turned out to be Thorazine.

And there were notices all over this place about no patient will be forced to-- they just broke the law. I mean, this was not surprising to me, but kind of shocking that they would do such a thing.

And as I say, it takes a long time to tell this, and we don't have the time today. But anyway, that's when I realized this was not an educational institution. And the next morning, when I woke up, I'll just mention a couple of things. One was I wanted to take a shower. And so the attendant says OK, here's the showers, and I'll get you some soap. And so he came back with a little cup, a paper cup of soap, red, like a soup.

And he said, don't drink the soap. And I said, why would I drink the soap? He said, I don't know. But somebody drank it last week, so what do I tell you? So I'm thinking, drink the soap?

So smelled the soap. It smells like cherries. As a matter of fact, a lot of our soap smells like fruit, doesn't it? Why? Why do you want something that washes you-- so you saw everything in a completely new way. And we wonder why kids go into the sink and start drinking stuff. Well, we've made it smell like lemons and cherry. See, that's really crazy. What's crazy is not somebody drinking the soap. It's making soap that smells like food.

Anyway, about an hour later, we don't have the timing of the details, but finally I was going to be interviewed by the psychiatrist. And so he came in, and a very young man, and he says, oh, I see that you teach at Stanford. So he's starting a conversation. So I say yes. And he says, well do you know-- by the way, what do you teach? I said, well, I teach in this inter-economic systems department. He says, oh, do you know Allen Ginsberg?

I said, oh, yeah, yeah. He was one of my doctoral students, right? He's now at Columbia. Oh, he's a good friend of mine. So we're having this perfectly good conversation, right? And then he remembers, hey this is a nut I'm supposed to be interviewing. But you see, it was mundane, and yet, you see, I shouldn't have been there.

And then, when my wife came to visit me in the afternoon, I was telling her this story of what happened to me. And she says, well no, they said they didn't inject you. And I said, well, look at this hole in my arm. And they don't give us anything sharp in here.

I mean, it's a great story, but it takes a long time to tell. And it was the great thing that happened to me. I woke up. My students were very concerned. But I would have paid tens of thousands of dollars for that experience, because you couldn't go in as a reporter and get that experience.

TOM KEELIN: You said you were waking up. What were you waking up to?

RON HOWARD: Well, what I was waking up to, all the things that I had believed that were not right. OK? In other words, I hadn't thought about the whole environment-- which is related to what we're talking about-- the whole environment in which we make decisions. Because you could be a great decision analyst, but decision analysis has no moral content in it. It's amoral. It's a powerful tool.

You could use it to think about how to assassinate somebody, or how to annihilate a whole group of people. So it's like an adding machine. You can add up victims. You can add up the people you saved. So whatever ethical content it's going to have, like fire or knives, has to come to the person using them. And so that was the waking up to how it affected my teaching, and in general my whole attitude toward life.

So that's when I resolved to get into ethics. The question of what's a proper thing to do-- not what can you do, but what's the right kind of thing to do. And then as a derivative of that, what part of your personal, ethical code are you willing to impose on other people by force, which has to do with the whole legal system, the draft, all kinds of things that are present in our life today as we speak-- people killing each other around the world now, not because they're different kinds of people. They're all human beings. And I know that, because we see people from all over the world in our doctoral program. You get to know them very well. If there are bad people out there, I haven't met them yet. And yet all kinds of people do very bad things.

TOM KEELIN: As I recall, this also spawned an investigation on your part into multiple world religions.

RON HOWARD: Oh, yeah. Yeah. But one of the things when I went through this was well, surely, this must have happened to other people. I'm not unique here. And so when you start looking for it, you find lots of experiences of people who have had this transforming event in their lives.

And we know that-- look in Christianity where Saint Paul, he was a big persecutor of Christians. And then one day, on the road to Damascus, God spoke to him, and then he became one of the people who wrote many books of the Bible. And it has happened to all kinds of people religiously. And it's transforming.

And what I want to say, well, really where is this is a normal thing? And I remember reading about Indian religions. And where this often would happen in India or something, this would

happen to someone, and his friends would understand this is fine. They'd keep him comfortable and quiet. And then he would, after a few days, come back. And if he been a shoemaker, he'd be a shoemaker. That's how he started a new religion.

But it's like a rebirth almost. And you hear that metaphor, "born again," and so forth. Every society in the world has different names for it and what-not. And whether you see it as a religious experience or something else, that's a very positive thing for people to experience.

Subsequent Evolution of Ideas: Ethics and Liberty

TOM KEELIN: In the decades that followed, in addition to probability and decision analysis, you began researching and teaching classes in ethics, and also liberty. How do these apparently disparate fields relate to each other?

RON HOWARD: Well, you see, ethics has to do-- I mentioned this a little earlier-- the part of your personal ethical code which we-- that's what we talked about in ethics class-- that you're willing to impose on other people by force, that's a subset of the code.

In other words, if someone came in here now and started to beat up on you, I would have no problem in restraining them, and using force against them to keep them from doing that if I possibly could. And that's part of my ethical code. So I have no problem in using force against people who harm other people, or steal the property.

But I do have a problem with using coercive means, which means either violence or the threat of violence, to get people to do what you want them to do. OK? If they themselves are being peaceful-- that is, not using force, or the threat of it-- and honest-- they're not stealing or defrauding or something like that. In other words, they're not criminals in the everyday, common law sense of the word.

But what we see, people being forced to do all kinds of things by governments-- like drafted, if you've got to go in the army. If you've ever read All Quiet on the Western Front, this book about World War I, where the French soldier and the German soldier are each trying to kill each other. And then one of them looks in the wall of the other and sees the pictures of that guy's wife and child. You know, what are we doing here? Whatever led us to be killing someone, like for me to be killing someone that I really have no argument with? And I've deprived him of his life and his family of him.

I remember there was a movie called The Kite Runner a few years back. And there was a statement in there that the ultimate crime is theft, because if you kill someone, you steal him from his family. In other words, you've deprived his family of that. And if you're lying you've deprived the person you're talking to of the truth. So in a sense, it's the ultimate moral point. Don't deprive people of things. And that's why the peaceful, honest people should be left alone.

TOM KEELIN: So the ethics part and the liberty part, they really come together. And then decision analysis is the part, as I understand it, gives people a choice within hopefully a broader ethical-- and they now have the liberty to make choices.

RON HOWARD: Yeah, exactly. If you've no choice-- well, the people in concentration camps, they still had decisions to make. And the idea was your ultimate freedom is your ability to react in any way you choose to a given situation. So if the Gestapo come in to arrest you, you have some choices. You can fall on your knees and beg them not to. You can punch them in the nose. And these will all have different-- but that's the freedom you've got within that system.

And you can't put a Buddha in jail. You can put his body in jail, but you can't put his mind in jail. So that's the ultimate freedom, OK?

But on the other hand, a lot of mischief goes on in the world, like people pushing people around. And I don't know what day this will ever be seen, but I guarantee we'll be killing each other in the world in massive-- it's been true for decades in my life, that some group's been killing another group for "very good reasons" all over the world.

Complementing Theory with Practice

TOM KEELIN: Ron, switching gears a little bit, you have always encouraged your students and colleagues to complement theory with practice.

RON HOWARD: Absolutely.

TOM KEELIN: And you yourself have always engaged in consulting as well as your academic pursuits throughout your career. Why so?

RON HOWARD: Well, basically I'm an engineer. And I guess if I were a mathematician, theory would be enough. But I want to see an effect of my thoughts in the world. And if you're going to be a decision analyst, you'd better be dealing with real decisions, and not talking about them. If you can't do it on your own stuff, then how can you help somebody else?

And it's not that we're pulling out our tools, we're decision analysts every time we have to order a pizza. That would be a waste of time. But if you have a really challenging decision about your health, or about the health of your family, or a major investment that will have long implications for you, well, why wouldn't you use the best tools you have?

TOM KEELIN: So also in the teaching and practice of decision analysis, you've routinely gone well beyond what I would call simple applications of decision theory to what might be called systems engineering with a sound, underlying, decision-based philosophy. Why have you undertaken to broaden the field of decision theory to include the systems engineering perspective?

RON HOWARD: Well, remember, engineering, the whole purpose of being an engineer is to make life better for people. In other words, whether you're Edison, or look at the people who invented or discovered and put into practice electric generators. And so we transform life.

And it's not just a theoretical thing. Physicists may well study things that then give us ideas about what to do. But ultimately, engineers are about doing, and not just knowing. You have to know and do.

And it's interesting. MIT's motto was "Mens et Manus"-- mind and hand. In other words, it's not enough just to think it. You've got to do something. And the MIT mascot, which is on the ring, is a beaver. Because the beaver's out there doing it. He's building dams and so on. He's not just observing nature. He's doing something about it.

Engagement with Consulting Organizations

TOM KEELIN: So along the way, you've been associated with several historic organizations on operations research. We've already talked a bit about MIT, AD Little, your early associations with Stanford, and Bill Linville, and even SRI. What about your later work with the Strategic Decisions Group in particular, or anyone else that kind of led up to that? Can you comment on the highlights of your involvement with such organizations?

RON HOWARD: Well, what has happened is that over the years-- I think now I've got some 90 doctoral student at MIT and Stanford-- many of them have gone on to-- some have gone to academia-- but many have gone on to start businesses and work in businesses, and help other people. And actually, one business often leads to another business.

So there's at least one business that was split off from SRI, that decision analysis group, which was the founding hotbed of this originally. Some people who had worked started a company from my doctoral students. And then that company was taken over by some other of my doctoral students, and the second birth.

And I haven't drawn the whole map of this yet, but it's amazing how many, the fields, from the care for people who have addictive problems-- doing systems for that-- to all kinds of operations management problems, to investment-- the students have been wonderful. And they've created all kinds of value for people around the world-- not just in the US. Coming from every continent except Antarctica. I guess we're kind of short on Antarctic students.

TOM KEELIN: So with these various consulting organizations, your longest tenure, I think, by far has been with Strategic Decisions Group. It's been over 30 years.

RON HOWARD: Yes. Well I'm still associated with them. But now the association is not so much-- I'm not an owner or anything like that of Strategic Decisions Group now. But we do have a joint activity in this Stanford Center for Professional Development running a course called-- or a series of courses, certificate programs-- called Strategic Decision and Risk Management.

So the SDG is the quote company that will do this as a business. And then I'm the academic director of this program, and the idea is the students that we get-- and there's hundreds every year-- are going to be also learning not just the practical side of it, but also the best thing we could learn from our vantage point as a research university. So it's a nice combination of the theory and practice again.

TOM KEELIN: Looking back over your association with these various consulting organizations, have there been significant evolutions of thought that you've noticed, or very large changes in practice that are notable from your perspective?

RON HOWARD: Well, one of the big questions is who is responsible for-- I should back up for decision analysis again. For any decision, the fundamentals are you need to think about your alternatives, how those alternatives will result in what happens in the future, the outcomes-- and they may be uncertain-- and finally your preferences. And for individual, someone facing a decision, we can pretty much think all of that through.

But you see, part of the process is not just dealing with your present information. One of the main contributions of decision analysis is to figure out what information would be worth acquiring to help you make a better decision. Write down what would you be willing to pay for it?

And so it's not we're just taking the problem is given, we can ask, talk about what would a new alternative be worth? What would new information be worth? Are you sure about your preferences? Let's look at the choices you're really making.

So that there's a kind of not just taking it as given, but the whole process is making sure you have accurately represented these things, and helped the person or company do as much as they can. And that's what's evolved in better and better on the consulting side, to make sure that this is really delivering all the benefit to that person. And that benefit can be dollars if it's a company, and it can be better chances of better health if it's a medical decision.

Retrospect and Prospect

TOM KEELIN: Looking back over the last 50 years in what ways has decision analysis either exceeded or fallen short of your hopes and expectations?

RON HOWARD: Well, I guess I'm not a big believer in expectations. You're bound to be disappointed if you're talking about expectations. I think you want to live in maybe expectancy, but not expectations. You want good things to happen, but you also want to accept what happens. Because believe me, in any person's life, it will not all be good.

And as a matter of fact, let's take the idea of love. Soon as you decide to love somebody, you're signing up for the pain of loss if something happens to them. So one alternative, don't love anybody. Not a good alternative. But realize that it's not necessarily going to be the wonderful thing you thought it would be, because any time you love, you can lose.

And of course, there's this old saying, "It's better to have loved and lost than never to have loved at all." Maybe that was set up to be if you have a break-up with your loved one. But just think about including the death of this person you promised to be with "till death do you part." It's in there, too.

TOM KEELIN: Then what would be your expectancy or aspirations for the future of decision analysis?

RON HOWARD: Well, when you talk about decision analysis, I really want to talk about decision-making, which gets us into the whole ethics and coercion side of things. So for decision analysis itself, I would like everybody in the world to be able to have the access to this way of thinking that will make their lives much more satisfying by realizing that they have choices about what they do-- number one-- and that they shouldn't beat up on themselves if they made the decision and it didn't work out the way they thought it would.

In other words a keystone of decision analysis is realizing that you can't tell the quality of the decision by the quality of the outcome that it produced. And if you make a bad decision with a good outcome, like driving drunk and killing somebody, right, that's a really bad decision with a bad outcome. But it's also a bad decision if you don't kill somebody if you drive drunk.

TOM KEELIN: Yes. Ron, looking back over your career, of what do you feel most proud of having contributed or accomplished?

RON HOWARD: Well, you see, you said about "what I did." I'm blessed. It's not what I did. It's what I got. And what I got was all these wonderful people who have been colleagues and friends. It's really great to see someone after 20 years, or 30 years-- and it may be that long sometimes-- and be able almost to pick up where you left off. The same language.

I've never had anybody say, you really pulled the wool over my eyes with this decision analysis stuff. I've been waiting to tell you it's all BS. Never happened. As a matter of fact, I get quite the contrary comment. And that's terrific, because I don't want to spread a virus. I want to spread a really good idea.

TOM KEELIN: Well, I think many would agree that you have done so-- even your colleagues. Ron, over your career you're emphasized and thought very, very carefully decisions. Why is it that decisions are so important, and such a worthy focus?

RON HOWARD: Well, when you think about it, decisions are the only things you can do that change the future, change your future, the rest of your life. Bad things can happen to you that out of the blue-- you can be hit by a car as you cross the street. Good things could happen to you-- you might win a prize of some kind.

But the only thing you can do to change your future is the decisions you make. And that's true for everybody in the world. So that's why it's such a keen focus in your life. You have to say, OK, anything I do that I choose to do may have long-lasting implications for me.

And there's another thing along these lines that's worth thinking about, because we've talked about good decisions and bad decisions. Good decisions never become bad, and bad decisions never become good. It also means there's no point for regret if you make good decisions.

In the early days, there was a case when the polio vaccine wasn't vetted and some parents-- of course, all parents were very much frightened of their children getting polio. Well, some parents hurried out to do that. And it turned out that batch of vaccine was defective. And so their children got polio, because their parents gave them the vaccine.

And psychologists would work with these parents to say, you did nothing wrong. It was not you were being foolhardy. You were making-- and now we have the term-- you were making a good decision that had a bad outcome. So there's no reason for regret or recrimination.

Because if you took your kids for a ride in the country, and a truck ran into them, you wouldn't say, you should never take your kids for a ride in the country. Bad things can happen, and they do. But that doesn't mean you don't make a good decision about what to do. In other words, take them for a ride in the country, put them in their seat belts, have a car that's properly maintained and all that, but don't be afraid of living life to the full if you are being prudent-- and you don't know whether you're being prudent till you use the decision focus-- if you're being prudent living it. Yeah, I mean the-- yeah. Done!

TOM KEELIN: Very powerful--

RON HOWARD: Food for thought, right?

TOM KEELIN: --perspective. Food for thought. Thank you. Ron, looking back over your career, how would you most like to be remembered?

RON HOWARD: (LAUGHING)

OK. Fondly. I'd like to be remembered fondly. What else could you wish for, right?

TOM KEELIN: I think you will be remembered fondly, speaking from my heart, and hundreds and hundreds of people who have had the chance to work with you over the years.

RON HOWARD: Well, thank you, Tom. And believe me, the feeling is mutual.