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Welcome to Brainfluence, where author and international keynote speaker Roger Dooley has weekly conversations with thought leaders and world class experts. Every episode shows you how to improve your business with advice based on science or data.

Roger's new book, *Friction,* is published by McGraw Hill and is now available at Amazon, Barnes & Noble, and bookstores everywhere. Dr Robert Cialdini described the book as, "Blinding insight," and Nobel winner Dr. Richard Claimer said, "Reading Friction will arm any manager with a mental can of WD40."

To learn more, go to RogerDooley.com/Friction, or just visit the book seller of your choice.

Now, here's Roger.

Roger Dooley: Welcome to Brainfluence. I'm Roger Dooley.

Today we're going to speak about a topic we're all familiar with, but may not know very much about. Anyone in marketing, and in particular content marketing, knows about rankings, ratings and lists. Headline writers can get more clicks to an article if they title it, The Top 10 or Best 20. We try and rate and rank everything, even those things that are very difficult, if not impossible, to compare. Just before recording this, the Westminster Kennel Show is broadcast and it's fascinating to watch all those dogs, but can a dog show judge really make an impartial case for ranking a poodle higher than a Chihuahua or a Great Dane? And we want to know which colleges are best, and students wait every year for the US News College Rankings to see who moved up and who moved down. Did anyone fall out of the top 10? All of these ignore the

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fundamental truth that these rankings are pretty close to meaningless when it comes to the quality of education that the student will receive.

Roger Dooley:

Fortunately, we've got an expert today to help us sort out why our brains respond to rankings, ratings, and lists. Péter Érdi is a professor of complex systems studies at Kalamazoo college. He's also a research professor in his hometown in Budapest at the Wigner Research Center of Physics. Beyond complex systems, Péter is an expert in cognitive science, neural networks and computational intelligence. His past books have focused on mathematical modeling of chemical, biological, and other complex systems. And, Péter's new book is, Ranking: The Unwritten Rules of the Social Game We All Play. Welcome to the show, Péter.

Péter Érdi:

Thank you, Roger. I honored to have the chance to be with you today. Really, thank you.

Roger Dooley:

Péter, I want to get to rankings, rating and lists, but first a question, what kind of problems does a professor of complex systems work on?

Péter Érdi:

A professor of complex system is interested what are the similarities among seemingly different fields. For instance, I'm interested between the analogies between epileptic seizures and stock market crashes and eruption of earthquakes. And however these phenomena are studied in very different departments, for us, it's very interesting that is possible to learn from one field and to transfer questions, techniques, and possibilities or solving problems to other fields. This is what I try to teach to my students.

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Roger Dooley: Well, that's really a core concept of innovation, isn't it, that

it seems like most great inventions don't just spring from nothing, but often they're applying knowledge from one

field in a new way in a different field.

Péter Érdi: Yes. This is what complex systems should do. We make

so much lip service to interdisciplinary. What we tried to do is really to teach students to understand one discipline and then to be able to utilize this concept to other fields

and problems. This is the real issue with the

interdisciplinary science, specifically with complex

systems

Roger Dooley: Yeah. Moving onto rankings and ratings and such, is it fair

to say that humans need to compare themselves, their situation, their possessions or pretty much everything else

to other people, other situations? Is this a biological

imperative?

Péter Érdi: Roger, you started your question with humans, but what

is very important that this whole problem of social ranking

is not restricted to human communities. And it is of course, as many other things in humans, has an evolutionary root. Very famously, scientists in Oslo, Norway, more than hundred years ago, actually he was

about 10 years old and spent the summers close to a poultry farm. And here, he noticed that the community of chickens and they notice the existence of hierarchy

among chickens. He coined that term pecking order, which means that the chickens accept their places in the ranking. And as it prescribes that priority of access to

resource, and especially food and meat.

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Péter Érdi:

Of course, I cannot deny there is a huge step from chicken to humans, but we see independently, whether we like it or not, as we know, there is an increased demand for transparency, accountability, comparability of institution, individuals, they should make ranking. Whether or not we should, but ranking begins with comparisons. We like to compare ourselves with others and determine who is stronger, richer, better, cleverer. I'm very old, so I attended a number of high school reunion. These are fantastic places to provide wonderful opportunities to compare our standing in any aspects we like, who is nice career progress, intelligence, family's success against the standing of our former classmates. It turned out that my head became grayer later than the others. My other classmates were envy, "Oh, Péter, still you don't have gray hair."

Roger Dooley:

Yeah, well, we simply have to compare each other. And I think obviously, we all have those experiences when we see somebody else, we compare ourselves. We compare our cars and who knows what else. But your class reunion reminds me, I mentioned college rankings in the introduction, Péter. And they're, to me, a wonderful example of rankings that look quantitative and objective, but at least according to most experts, are pretty close to meaningless. There probably is a difference between school number 10 and school number 300 in, say, how renowned the professors are and perhaps the facilities and resources that the schools have. But even then, that difference doesn't necessarily mean that an individual student will get a better education at number 10 than at the much worse ranked school. It's a much more individual thing. But despite this, people put massive faith

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in these things. They look every year to see, "Wow, who's moving up? Who's moving down?"

Roger Dooley:

And we say these things are meaningless in some ways, but they aren't meaningless to the institutions because a school that breaks from, say, a number 23 to suddenly in the top 10 which doesn't happen often, but it has happened. That means a big difference for that school. They get more applications. They might get 20 or 30% more applications, which means they can be more selective and so on. Why do people, despite the fact that every expert says you really shouldn't pay attention to rankings, why do people put so much faith in those? Why do they look at them so much?

Péter Érdi:

I would like to answer in two steps. Number one, before I'm speaking about university ranking, first of all, I should tell this is my opinion. Nobody likes it, but everybody uses it. Nobody likes it. But we do it. We use it, and if you do it. Why it is interesting for us? We have this notion, objective reality, which refers anything that exists as an independently of any cautious perception. And that is something which could assume subjective reality, which depends up to some cautious awareness of some perceiver. And it hope to be objective. But we know that ... For instance, objectivity ranking the tallest building in the world, more or less easy. Of course, I never measured this building, but generally believe in the information that that is more or less objective.

Roger Dooley: Well, e

Well, even there Péter, you have buildings that put

decorative spires on the top that-

Péter Érdi:

Exactly.

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Roger Dooley: ... account in their height. But if they have an antenna on

the top, that's also a metal structure that does not count in

their Heights. Even there, there's a little bit of

gamesmanship.

Péter Érdi: Actually, it's totally true that even when we're just

speaking about the physical quantity, it's still not totally

clear how to be fact. As universities, first of all, the

university, the college is a very complex institution. Now we have a question. Are we able to quantify a complex

institution with one number, what is its rate, a single

score. I think it is impossible. And then we try to make

some ordered rank among these schools. Well,

symbolically, our modern obsession with university

ranking is represented with the appearance of the ranking

of the US News World Report. It started in 1983. That was the marking the entrance of mass media onto the

scene.

Péter Érdi: Then US World Report discriminates between ranking for

the best quality versus best value. How to calculate best

value? Qualities given ... Then you should give some

weight. Since we have different features, first we should

decide, or the evaluator should decide, what are the

features which matters. Number two, what are the

weights, how important are. These weights are generally

totally subject, totally subjective. And of course if we have

different weights, we can different results.

Roger Dooley: I think that's why it's important for them to adjust the

weights periodically because that way they get new results, even if the schools themselves didn't change at

all.

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Péter Érdi:

For instance, recently, I gave a talk about this topic in Kalamazoo College and asked our president, Jorge Gonzalez ... Generally, the academic reputation contributes 22.5%. I asked him, "How do you give the reputation of 50 college in total?" And he said that maybe five of the 50 ... Previous reputation matters. There is a self-amplifying mechanism. If you have a better reputation at the beginning, there is a better chance that your reputation will increase. That is basically a positive feedback. Other institutions use different features. For instance, teaching is 30%, research 30%.

Péter Érdi:

But we have what is called rank reversal. If we change the weights, we get different results. They should know there is a limit in terms of having an objective rank, all that. But I believe it's better than nothing, better than purely verbal qualification. Recently, there are some attack that we want to quantify everything and we can't. And still, I grew up behind the Iron Curtain, and I appreciate that now we have a system which tries to make objective and it's much better than a evaluation, say, based on political reality.

Roger Dooley:

Yeah, I think one reason there's hunger for this, in general, as your whole book describes, our brains tend to want to rank things. But that particular problem, the college admissions problem, the college selection problem in the United States, and this may seem kind of strange to people outside the United States, we have an bewildering array of choices here. There are 3,000 plus institutions of higher education of all types, nonprofit and for profit and some certificate-oriented, others granting advanced degrees.

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Péter Érdi: No, yeah.

Roger Dooley: Yeah. And the selection, the number of possibilities, is so

huge. This is beyond paradox of choice. It's like where do you even begin with that? People start using what I guess scientists might call heuristics, where they started coming

up with rules like, "Okay, I'm going to limit myself to

schools within a two-hour drive of home," for example. And there isn't necessarily a good reason for that, but at least it knocks out a bunch of choices from consideration and makes the numbers smaller. And so when somebody like US News posts a list of good schools, this may not

make that much sense to people.

Roger Dooley: And I think that probably even many of the people who

use the list acknowledge that it's not that great, but it's a

way of cutting down the number of choices to a

manageable size when you figure that an average student might only apply to a few schools or if they're applying to very selective schools, now applying to maybe 10 or 15 is common, which even a few years ago it wasn't quite that common, but now more so. But even then, that's a very

small number out of the total number of choices.

Péter Érdi: Yes. I have a couple of comments on it. Number one,

obviously, there is a demand for ranking transparency, accountability, comparability. There is an increase

demand for transparency and comparability in institution of higher education, most from the politicians, from the

public. There's a question. Do we have any ranking methodology and people wants to get something result, which is easy to interpret. We know that we have features

and weights and then we need measures. What does the

banking measures, and have indicators and weights.

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What really matters? Occasionally matters what type of resources you have, faculty resources. USWR uses 20% student selectivity, what type of students you have, financial resources. Then there are some measures which characterize the output of the system, graduation rate or what happens with the students who graduate.

Péter Érdi:

My general advice is together with many others, create your own ranking as you measured. As we have something that's personal, we have something that says personal system. And exactly as you told it, one of my students told that, "Okay, I don't like the very sunny weather, so I would like to go to the West." And actually, he went to Seattle. Was an important tool.

Péter Érdi:

Number two, ranking give some reflection for the past, but it is also a driving force for the future. I liked very much a book Engines of Anxiety written by Wendy Espeland, Michael Sauder. They clearly demonstrated that school ranking provides not only a passive mirror but then driving force for change. And of course, there are different types of change. Number one, look, we cannot ... Generally, ranking reflects three differences, it is very important, the reality, the illusion and the manipulation of the objectivity. Number one, we would like to get real evaluation, but of course, we knows that is just occasionally just illusion because we cannot do exact ranking.

Péter Érdi:

And of course, it's not a shame. We don't mind if we have a better image that it deserved. Occasionally, there is a college or university policy to improve your ranks. Actually, I've heard that in my home country, my native country in Hungary, there is a political intention that now Hungary needs a university to be, I think, in the first 300

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or so. But we are far from it. Is it a unique goal to improve your rankings? And of course, there is one mechanism that self-fulfilling prophecy, that is a mechanism of self amplification of small differences. And one year, having a small difference in ranking one year, it influences. If you are 10th and not your 11th, you might get much more student. And this small difference will be subject of amplification for the next year. Consequently, the selective scores will be different. It has a causal effect in computation of ranking. We should be very, very cautious with it.

Roger Dooley:

Right. Well, yeah, actually in my book Friction, I talk about how the University of Chicago, which is an excellent school to be sure improve their ranking process by making it easier to apply. They originally had a very difficult application process with unique, very challenging essays, which is in certain ways a good thing because it ensured that applicants were serious about the school and it also required a measure of literacy and creativity beyond perhaps the simplest applications. But it also meant that they got relatively fewer applicants. This hurt their ranking. When they made it easier, those metrics improve. They got more applicants and they appeared to be more selective because they accepted the same number of students, which as you described, Péter, ended up moving them higher in the ranking and that in turn attracted yet more applicants. And to the point where they finally, I think, in the last tally moved up to number three in the nation. And this was not a single year process, but it was exactly the sort of process that you're talking about.

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Roger Dooley:

And I'm going to throw out another thought here Péter, and that is if you are, say, a business and are not on whatever the most popular ranking is, one other approach is to popularize a different ranking. Your own school of Kalamazoo College years ago appeared on an alternate list of schools. It was sort of the US News antidote. It was called Colleges that Change Lives. And it was not meant to use the same metrics at all as the US News, which would be research faculty and this sort of thing. They were mostly liberal arts colleges, as I recall, and they used a very different set of criteria to include these schools. That way, smaller liberal arts schools got a lot of attention and indeed they got more applicants and prospered because of this very different ranking systems. There's a message there. If you don't see any way of cracking whatever the prevalent ranking is in your space, maybe create a different one or try and popularize a different one.

Péter Érdi:

Yes. Roger, speaking about higher education institution, recently there are 18,000 institutions in the world higher education database. It means only 0.5, a half percent of them can make the top 100 cut. And so I'm inclined to believe that it's not true that there is only one game in town. But competition is a positive driving force. It's not true that all universities should go to the same starting line. There are newer and smaller universities, especially from emerging economies. Generally don't have the massive financial resources. It's almost impossible for these institution to improve their ranking status. Of course, there are different categories. US World News Report ranks national universities, liberal art colleges, regional universities, colleges.

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Péter Érdi:

But we need ... I believe the society needs the middle and lower ranked universities and colleges, too. But it might be to their benefit to concentrate on helping students earn credentials and employment rather than spending too much to earn a better image in the ranking game. I might be wrong. The message is there are more games in town, and small colleges don't have to compete and can't in the larger, but they might be excellent in their own categories.

Roger Dooley:

Right. And I don't want to turn this into a higher ed discussion only because most of our audience is not involved in higher ed. Let me move onto content and content creation. In your book you talk about listicles, top 10 lists or best 10 or 10 crazy ways to do something, all these things people seem to love. And I know that if you look at the statistics of what gets clicked on, I know that occasionally someone will publish a result from a major website and show commonalities in headlines, like which words got clicked the most. Typically, these lists, top 10 lists or seven ways to lists, those sorts of things are much more attractive than basically the same content presented without that enumeration. What is it about having a number in there that lights up our brain apparently, makes us click?

Péter Érdi:

Yes. Basically, I'm a neuroscientist. I'm very interested in this topic, what's the computation in neuroscience. First of all, we have an inherent love of order list. It may be older than it seems. The 10 Commandments appeared first to be unranked list. However, as I asked recently a rabbi, there are different interpretation of whether some items are more important than the others. It's very ancient this list. Much later in the history, Martin Luther wrote the 95 thesis published as a poster on the door of the

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Schlosskirche in Wittenberg, and that is initiating the Protestant Reformation. And of course, very important that the print was possibility ... German and that was printed and circulated.

Roger Dooley:

We should probably either give God or Moses the credit for the first listicle. He could've called it important rules to follow, but instead we have the 10 Commandments. Although, maybe today somebody might suggest the top 10 would have been even a little bit more persuasive.

Péter Érdi:

Journalists and book writers like very much. I spend just five minutes, but I spent at thecnn.com. And during five minutes I collected about 10 things, the best Istanbul hotels, seven best places to stay in Napa Valley, eight tips for surviving long flight, 10 of the best beaches near the airports. That is just eye-catching and we like very much. And it is easy and it gives us the feeling that we have something subjective. We have a love of lists, and there are many reasons why we love lists. First of all, we know exactly what we are getting. Then we obvious know, if you see that six reasons and you are six reasons, then you know that you will have four other reasons that you will get. You feel, when you see this list, that you feel definitive.

Péter Érdi:

And then we have the to-do lists, what are the most important thing to do. Everybody has now to-do list. Does it help us to prioritize our daily activities? And so when we have these listicles, which is very important now, and of course we have different lists about the recommendation systems. Each day, what are the top hotels that you want to visit. I open Amazon, you will get these are the 10 best book to be and so on. And this recommendation system

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could basically a part of the electronic commerce. And my understanding is that the audience of this podcast, or half of them, might come from the business world.

Péter Érdi:

And so how these recommendation systems work? Basically, they recommend products to the potential costumers based on a number of different reasons. That type of ... And I'm just an academic, but I believe that the seller has two different problems. First, it is a new product, say, a lawnmower. The goal is now to identify potential buyers. How? You bought a mower last year. You don't need another next year, probably, but obviously you have a garden. You might need some gardening hand tool. Second, he is a user. Then you might try to find out what to sell him or her.

Péter Érdi:

And there are three different mechanisms. Show me the stuff that my friends like. Show me the stuff that I liked in the past. Show me stuff that fits my needs. These are huge recommending systems are built based on these simple, simple rules.

Roger Dooley:

Yep. Péter, let me ask you, we're talking about e-commerce and Amazon and so on. Something else that they do on their site that is generally pretty valuable, we as consumers consider pretty valuable, is ratings where buyers after they purchase a product can rate it. And we know that these ratings sometimes can be manipulated, but if there are hundreds or thousands of ratings, probably they are legitimate. But what I've noticed is that there seems to be even a psychology of rating things where people tend to rate in a very narrow band for one. And also, sometimes there's a protocol. There's sort of an expectation. If you rate your Uber driver less than a five,

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you're a jerk. Unless there's a really major problem with a ride, nobody rates their Uber driver, or hopefully the passenger, under five, which is a perfect rating.

Roger Dooley:

I know a long time ago I used a freelancer site. I was buying freelancer services for coding and design and there was an unwritten protocol that if somebody completed a job, both parties rated the other a 10. There was a social pressure. I remember seeing one freelancer really complaining about a buyer that had rated his work a nine, which in most cases a nine is pretty good. And that was what the buyer thought. It was probably one of his first jobs there. But from the freelancer standpoint, that was a terrible rating. I wonder if you could comment on the psychology of that, both the sort of social pressure that it drives ratings and also there's sort of a mean rating. If you look at a wine ratings, it seems like most wines fall somewhere in the 80s even though there's theoretically a much bigger range, and it's just sort of where things tend to fall.

Péter Érdi:

This whole system is based on reviews. And now I guess you mentioned just how reliable these reviews are. They're fake reviews. And I generally believe they happen but can be filtered. Recently, I show a data that maybe 14% of reviews are fake, which means that it 86% ... In the travel industry, we have TripAdvisor, is a one of the leader. And of course, there were some found very interesting and amusing story that there was a hotel Glasgow, which turned out to be the number one. But that was just a joke since the hostel served about 150 mostly homeless unemployment men, some of whom had different social problems. He didn't have a wonderful reputation, but they played a game and the number of

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jokers gave it a five-star rating, that a certain point this hotel made the top 100 of TripAdvisor best place to stay. But that was the implication because later the Glasgow City Council improve the quality of this hostel. And of course, there are benevolence and hoax.

Péter Érdi:

There's well-known story that in a small Italian town called Moniga del Garda, a restaurant Italia Tavola became the top restaurant in the city. And it turned out this restaurant does not exist. Other the restaurant owners wanted to make a demonstration that the whole system doesn't work. But I don't believe that it's really benevolent. And generally, we should understand that except that we use algorithms and softwares. They are what we call in the computer science language permanent beta state, so never correct. Beta originally refer to the final stage of software development immediately before the product was launched to the market. And normally, there's many products remain in this stage. And it gives us some help and we use algorithm. And there is huge question whether or not these algorithms or good or not.

Péter Érdi:

I belong ... And we have a huge, huge, huge fashion. We are trying to navigate in the web and to find useful information. Computer scientist designed ranking algorithms. And of course, computers cannot process huge datasets using these algorithms. Who has the last word, the human or the computer? You know that we have this age old question, what came first, the chicken or the egg? But now we have the question, who has the last word, the human or the computer? Do we need human curators to modify the results of this soulless algorithms or not? Some people are very, very much ...

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Péter Érdi:

And it might be partially true that we need human editors to correct the results of the algorithms. Credit scoring is very sensitive. Who gets credit, who doesn't get it, and generally, reputation. And so we humans constructed these ranking algorithms. You now why Google he became Google? Google became Google because they came out a very famous algorithm, what we call the page rank algorithms which are able to rank the huge amount of website very well based on their competence, based on their relevance to our query. And then Google search program was much, much better than previous one. It don't know whether you remember what you used 25 years ago, Roger, AltaVista.

Roger Dooley:

Oh, yes, yes. I was involved in search in the very early days. And the difference in Google's algorithm was like night and day compared to their competitors at the time.

Péter Érdi:

That was a huge difference. The previous algorithm used citations. If the website is cited by others, that's good. However, Google realized that important citations matters much more. If my website cites Google, doesn't have any sense. If Google website would point to my website, it will be a huge difference. But this is not easy to calculate. And Google came out with an algorithm, we call technical and iterative algorithm, to take into account the citations which came from more important citations. I use this algorithm for analyzing the patents in the USPTO system, the United States Patent and Trademark Office System. We analyze these citations in order to try to predict the emerging field of technologies. That was the technical reason that my interest was oriented to where is a general problem of ranking, which led to somehow I wrote this book, Ranking. And the unwritten rules of the social gave

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you all play, but it's not unwritten anymore because you wrote it.

Roger Dooley:

Right. Well, Google really, I think, can attribute all of its success to its ability to rank things by quality. And even though it's far from perfect and people have been gaming Google for years, they produced a better ranking quality than their competition did and they've prospered ever since. And one last note too, it's something that we did not get ... I was going to chat about a little bit, but I think we'll wrap up here. ... the process of reviews and human reviews and getting them. We did publish an article just a few months ago on my neuromarketing blog about medical reviews. And these days, getting good reviews for a medical practice is increasingly important because people are choosing their doctor that way. When in the past they might've gone by a personal recommendation or simply taken the recommendation of their primary care physician to find a specialist. Now what are they doing? They're going to different websites and looking for star rankings, is this a doctor three out of five or four and a half out of five.

Roger Dooley:

Anyway, but this is probably a good place to wrap up. We'll link to that in the show notes. Let me remind our listeners that today we are speaking with Péter Érdi, author of Ranking: The Unwritten Rules of the Social Game We All Play. Péter, how can people find you online?

Péter Érdi:

I believe that this Ranking book can be found at the website of the Oxford University Press and a couple of other places. And so generally, I do believe that is a huge problem. There's the general question, should we play or

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not play this game. My general message is that we should do it with trust, but with some cautious trust. Every day, we rank many options, the success of the system depend on our trust. We all know that somehow we should combine human intelligence with computational intelligence. How? I leave you this problem for the next generation, the generation Z and Z+.

Roger Dooley:

Great. Well, we will link to the book and to any other resources we spoke about on the show notes page at RogerDooley.com/podcast. And we'll have a text version of our conversation there, too. Péter, your book is definitely in my top five books on the psychology of comparison. Thanks for being on the show.

Péter Érdi: Thank you very much.

Thank you for tuning into this episode of Brainfluence. To find more episodes like this one, and to access all of Roger's online writing and resources, the best starting point is RogerDooley.com.

And remember, Roger's new book, *Friction*, is now available at Amazon, Barnes and Noble, and book sellers everywhere. Bestselling author Dan Pink calls it, "An important read," and Wharton Professor Dr. Joana Berger said, "You'll understand Friction's power and how to harness it."

For more information or for links to Amazon and other sellers, go to RogerDooley.com/Friction.