# Content

# TPO 01

So let me tell you about my own experience with this when I was working for a computer company a couple of years ago. So one day a coworker and I suggested we should our computers a design makeover, make them look more up to date. Market research was showing that new customers said that they would be more interested in buying our computers if they looked cooler. Our technology was advanced but the outside design looked really old fashioned.

At first, more than half the group supported us. There were a few senior managers there though who did not support the design change. One of the senior managers said our focus has always been on technology, changing the look is an unnecessary cost. Almost immediately some of our supporters changed their minds. Even my coworker changed his mind. When I asked him why after the meeting, he told me he did not want to make a bad impression on the senior managers. He thought that disagreeing with them might jeopardize his chances of getting a promotion by not looking like a team player. What about me? I hated to admit it, but after a few hours discussion, I started wondering if it was worthy every one's time to argue about this. As more people sided with senior management, I started to feel like I was the only one holding up the vote. Everyone else seemed to think change wasn't necessary so I voted against my own idea in the end. So we unanimously decided to stay with the current old looking design. But this decision ended up costing us a lot of money. That same year, our competitor came up with a new design that attracted some of our customers and prevented us from profiting on potential new customers.

# TPO 02

Okay, so we said that the way we interact others has an impact on our behavior. In fact, there is some interesting research to suggest that in one type of interaction, when we are being observed, specifically, when we know we are being watched as we performed some activity, we tend to increase the speed at which we perform that activity. In one study, college students were asked to each put on a pair of shoes, shoes with laces they would have to tie. Now, one group of students was told that they would be observed. The second group, however, didn't know they were being observed. The students who were aware that they were being watched, actually tied their shoes much faster than the students who thought their were alone. Other studies confirm the same is true, even when we are learning new activities. Let's say someone is learning a new task, for example, learning how to type. When they are conscious of being observed, they’ll likely begin typing at a much faster rate than they would if they were alone. But and this is interesting, the study also showed that certain common behavior, things people typically do like making mistakes when you’re learning something new. That behavior pattern will also increase. So in other words, when we are learning to type, and we know we are being watched, we all type faster but we ’ll also make more mistakes.

# TPO 03

This is a true story, from my own life. In my first year in high school, I was addicted to video games. I played them all the time, and I was not studying enough. I was failing chemistry that was my hardest class. So this was a conflict for me, because I wanted a good job when I grew up, and I believed, I knew that if you wanted a good career, you got to do well in school. But I just could not give up video games. I was completely torn. And my solution was to change my perspective. See, the only class I was doing really badly in was chemistry, in the others, I was okay. So I asked myself if I wanted to be a chemist when I grew up. And the fact is I didn't. I was pretty sure I wanted to be a sociologist. So, I told myself my chemistry class didn't matter, because sociologists don't really need to know chemistry. In other words, I change my understanding of what I meant to do well in school. I reinterpreted my situation. I used to think that doing well in school meant doing well in all my classes. But now I decided that succeeding in school meant only doing well in the classes that related directly to my future career. I eliminated the conflict, at least in my mind.

# TPO 04

Last month, my favorite uncle paid me a surprised visit. I had not seen him in many years. The door bell rang, I opened the door and there was uncle pete. Now I am sure when I saw him, I said something like uncle pete, what a surprise, how nice to see you. Anyway, my wife was standing next to me, and according to her, I wasn't really aware of this. My eyes got really wide and I broke into a huge big smile. She said I was actually jumping up and down like a little boy. Well, anyway, later that evening, uncle pete told me how very very good he felt when he saw how happy I was to see him. But compare that with this, my daughter, she is six; we were building a bird house together last week. And I was showing her how to use an hammer and a nail. And of course, stupid me, I was not being very careful, and I smashed my thumb with the hammer. Body did it hurt, I almost felt like screaming. But I didn't want to upset my daughter, so I said "don't worry, honey. It's nothing." Meanwhile, I was shaking my hand as if that would stop my thumb from hurting and my face was contorted in pain. My voice was trembling too. So even though I told my daughter I was okay, I am sure she didn't believe me. Because she kept asking me if I was okay.

# TPO 05

Nowadays, something you notice more and more is television commercials that made specifically for certain television programs. So let's say a company wants to sell a telephone. A cell phone. Now during TV shows that young people watch, you know shows with pop music or teen series, they create a commercial that emphasizes how fun the phone is. You know the phone has a bright color and they show kids having a good time with their friends. And well, the company wants the kids watching TV at this time to want to buy this phone. This phone that's made especially for them. But the same company will make a different commercial to be shown during, say, a program about business or a business news show. Now for this group of people, business people, the company will have to show how efficient their phone is. How it can handle all business easily and maybe even save money. And here is the thing, it's basically the same phone. The company has just made two different commercials to appeal to different groups of people.

# TPO 06

Okay, the first kind of memory, we are all very familiar with this ,right? You probably remember what you had for dinner last night. You have a conscious memory of last night's dinner, so if I ask you what did you eat last night, you could tell me. But these other kind of memories, implicit memories. They work differently. Let's take an example from the world of advertising. When you are driving along a highway, you'll see plenty of billboards, you know, roadside advertisements. You certainly don't remember them all. But they still affect you. Marketing researchers have shown, well, to be specific, let's say there is a billboard on the highway advertising a car, called the panther, the ad shows a big picture of a car. And above the car in huge letters, is the name of the car, panther. A lot of people drive by the billboard, but ask those drivers later if they saw any advertisements for cars and well, they will think about it and a lot of them will say no. They honestly don't remember seeing any, they have no conscious memory of the panther billboard. So you ask the same people a different question. You ask okay, you ask them to name an animal, starting with the letter P. What do you think they will answer? Do they say pig? Pig is the most common animal that starts with the letter P. But they don't say pig, they say panther. The billboard had an effect even though the drivers don't remember ever seeing it.

# TPO 07

This happens all the time with kids in schools. Say, there is a little boy or a girl who is just starting school. Well, they are not really used to the rules about proper behavior for a classroom. So, at the beginning they might.. I don't know, interrupt the teacher, walk around the classroom when they are supposed to be sitting down. You know, just misbehaving in general. Okay, but what happens? Well, the teacher gets angry with them when they act this way. They might get punished. They have to sit at their desks when everyone else is allowed to go outside and play. And they certainly don't like that. Soon, they will learn that this kind of behavior gets them in trouble. They 'll also learn that when they raise their hand to talk to the teacher and sit quietly and pay attention during class, they are rewarded. The teacher tells them she is proud of them and maybe puts little happy face stickers on their homework. Now that their behavior gets a good reaction from the teacher, the kids learn to always act this way in class, and not behave the way they used to.

# TPO 08

There is a large tropical insect called the peanut bug. Yes, like the peanuts that you eat. Um, and the peanut bugs' front wings are colored so that they blend in with their surroundings. But its back wings which are usually closed and hidden have these bright colorful spots on them. And when the peanut bug is attacked, it suddenly opens its back wings and out pop these big bright colors. And that surprises the predator and gives the peanut bug a chance to get away. Um, and then you have a butterfly called the morpho butterfly. And parts of the morpho buttery 's wings are very shiny. They reflect a lot of sunlight. When this butterfly is resting, this shiny part of its wings is hidden. Now morpho butterflies are often attacked by birds. So when a bird approaches, the morpho flies away. And when the morpho flaps its wings, all the bird can see are flashes of light reflected from the morpho's wings. Those flashes of light make it very difficult for the bird to follow the morpho. And the morpho is usually able to get away.

# TPO 09

The other day I went to this great new movie and one of the scenes in particular I thought was really set up nicely. At the start of the scene, before the action and talking and things started. You saw, on the movie screen, an image of a city. You could tell that it was a big city. There were lots of buildings, tall ones, skyscrapers. And the cars and signs on the city streets looked old fashioned. Like they were from the past, like the 1940s. The other thing I noticed right away from this first image just when the scene started, was that the city seemed, gloomy. You couldn't see much because it was, well, there was mostly darkness rather than sunlight. And there was only just a little bit of light from the street lamps. On top of that, it was raining and a kind of foggy. All of these details worked together to create a dark gloomy, mysterious of feeling. So then when the action started, and it showed detectives talking to each other in an office. I already knew that the office was located in a tall building in a big city sometime in the 1940s. And I had a good idea that the evens that would be taking place, would be pretty dark and mysterious because of the shot, the image I saw at the beginning of the scene.

# TPO 10

Okay, so I've actually got a few different examples of this. You know, when I was a kid, a character named action hero was really popular with my friends and me. We would always watch the action hero program on television every week and play games pretending that we were as strong and powerful as he was. Then pretty soon, we began seeing this small action hero figures in all the stores and well, we all just had to have them, I mean we'd been watching the television show for so long that it seemed only natural to want to own the toys, too. Well, I finally grew up and left the action hero television program and toys behind. But now, I have a seven year old daughter who watches television a lot and also likes to play with her toys, and lately her favorite toy is a cute little baby doll with a big round face and lots of curly hair named Rosa. All my daughter's friends have Rosa dolls too, and they enjoy going to each other's houses to play with them. Then a few weeks ago, my daughter came running up to me all excited, because she had just heard there was going to be a new television program on every week with the doll, Rosa, as the main character. So, naturally, she and all her friends have begun watching the show. And it's already very popular, as popular as the toy doll.

# TPO 11

All right, so let's consider the work of the outsider artist Henry Darger. Darger lived by himself in a tiny apartment in Chicago in the 1900s. He had no friends and spent all his spare time there alone creating hundreds of paintings and drawings. He had never formally studied art, and kept his work completely private, so no one ever saw it or responded to it during his lifetime. And so when you see Darger 's work, you notice how unique it is. It doesn't remind you of anything you 've ever seen before. It's very much his own. For example, one piece, it's a water color painting. In this piece he illustrates a story, about the adventures of seven children. But see, Darger had a really hard time drawing human figures. Yet, he managed to come up with his own rather unique solution for the problem. He simply cut out pictures of children from newspapers and magazines and pasted them into his own painted illustration of trees, flowers, and grass. The results look ..um a little strange. Darger's picture looks more cluttered, more crowded with details than the pictures of other artists because its entire surface is painted and there are no spaces left empty. It's also a lot longer than the pictures of most other artists, about nine feet long

# TPO 12

Consider this experiment, two groups of people were asked to watch TV. And while they were watching, a picture flashed on the screen. Less than a second, very quickly, so it was barely noticeable. The picture was of a boy with a birthday cake. Now, like I said, there were two groups and each group saw a slightly different version of the picture. One group got the boy looking angry, in fact he was actually throwing the cake on the floor. The other group got a picture of the boy smiling, happy, holding out the cake like he was offering it. Same boy, same cake. But different emotions expressed in each picture. Every one was then asked to look at a different image. Now this is a third image, right? Again, it's the boy and the cake. But this time the image stayed on the screen. In this picture, the boy is just holding the cake. Basically, no emotion on his face, everything very neutral. Now, remember, no body knew they 'd already seen a picture of this boy. After a minute, every one was asked to describe the boy 's personality. Those who had been exposed to the image of the angry boy, they generally described the boy 's personality negatively. Those who 'd early seen the happy boy described him, well, positively.

# TPO 13

Let's take an everyday example. An ordinary round plate like you 'd find in a kitchen. If you hold the plate directly in front of your face and look at it. What shape do you see? A perfect circle, right? Suppose you tilt the plate to a different angle, to a horizontal position. Like you are planning to put food on it, still a perfect circle? No, the circle is now stretched out, flattened into an oval. Do you conclude the plate has actually changed shape? Or that it's a different object, not the same plate? Of course not, it looks different, but we perceive it as still being the same. Here is a different example. This classroom we are in, it's fairly large, right? Now, from up close, from the front row, I appear to be relatively big, bigger than if you were in the last row, right? But let's say you are sitting in the front row today, but tomorrow you are sitting in the back row. From back there, I am going to look smaller, but you don't think I 've actually gotten smaller. You don't think you are seeing a different professor, a guy who looks like me except he is smaller. No matter where you are, up close or far away, you understand without even thinking about it, that I am the same size, the same person.

# TPO 14

Okay, so this comes up a lot when people make career decisions. A friend of mine from college always wanted to be a film reviewer. He was a film major and he loved movies. Most of all, he loved to write about movies. So when he graduated, he looked for a job as a film reviewer for a newspaper, because as a film reviewer, he 'd get to see films for free and would be paid to write about them. That's what he loved. But he couldn't find a job as a film reviewer, so he took a position as a news reporter instead, for a newspaper, investigating stories, writing about events, what news reporters do. Now, at first, my friend was not sure he'd be at any good at this. He 'd never been a news reporter before. But eventually, he adjusted and gained confidence and he got used to the job. And he realized he was actually a pretty good reporter. Anyway, here is the thing, after a few years, the film reviewer for the newspaper where he worked quit and my friend was offered her job. This was his dream, right? His opportunity to be a film reviewer had finally come, and the new job would actually pay more, too. But did he take the job? Nope, he turned it down, he told me he'd gotten used to being a news reporter. And he just didn't want to try something else. It seemed like too big of a change since while there was a chance that the new job might not work out.

# TPO 15

For example, I recently read about a case in which researcher was given two groups of monkeys and he was asked to train these monkeys to pick up a ball and put it in a box. And he was told to record how many hours it took to train each monkey to learn to do this. Now, before he started the training, the researcher was told that one group of monkeys was highly intelligent. And that the other group was less intelligent. In truth, there was no difference between them. All the monkeys were actually very similar in terms of intelligence. But the researcher didn't know that, he thought one group was smarter, so he expected that that group would be easier to train. So, what happened? Well, the researcher trained the monkeys to perform the action and it turned out that on average, it took him two hours less time to train the supposedly smart monkeys than these supposedly less intelligent monkeys. Why? Well, it turns out that with the supposedly smart monkeys, the researcher smiled at them a lot, gave them a lot of encouragement, talked to them a lot, worked hard to communicate with them. But with the monkeys he thought were less intelligent he wasn't as enthusiastic. He didn't try quite as hard, wasn't quite optimistic.

# TPO 16

Now a study was done that illustrated this phenomenon. In the study, people were given an ordinary task that everyone has probably done before. They were simply asked to peel potatoes, and to peel as many potatoes as possible in a given amount of time. Okay, so some people worked alone and they were told that the number of potatoes they each peeled would be recorded. Others peeled potatoes together as part of a group and they were told that only the total number of potatoes peeled will be recorded. So it would be impossible to tell how many any one person had done. Then, researchers compared the results of the people who worked alone and those that worked together to see if there was any difference, that is, they took the average score of the people working alone and compared it to the average score of the people working together in a group. And they did discover a difference, it turns out that people working as a group peeled significantly fewer potatoes than people who worked alone.

# TPO 17

Let's start with an example you may be familiar with. What's one thing dogs typically do when they feel threatened when they want to protect themselves? That's right, they show their teeth. And when we see this, we know this behavior means basically stay away. Now, here is how this behavior became a recognizable warning. A long long time ago, a dog sensing danger would get ready to bite whatever animal was threatening him. It started by baring its teeth, but the purpose of doing this was something very simple. The dog instinctively was making sure it wouldn't bite its own lips when it bit the other animal, okay? But what happened? Other dogs, other animals, overtime, they learned that this teeth bearing always came before a dog was going to bite. And so they started to read it as a signal to be careful. To keep away or risk getting bitten. This scenario repeated time after time, also led to the dog 's awareness that by simply showing its teeth. A lot of the time, that was protection enough. What had been a simple physical preparation to bite had developed into a kind of defense mechanism, in and of itself. The dog learned it did not need to actually attack. But could get the right result from just communicating the possibility of an attack, through showing its teeth. It started to use this behavior as a warning signal.

# TPO 18

Okay, so a good example of this, found right here in north America is something an animal called the American pronghorn does. Pronghorn as you may know, are a kind of deer like animal. They live out on the open grassy plains. Somewhat in the middle of north America. And they are super fast. Pronghorn are in fact noted for being the fastest animal in the western hemisphere. Once a pronghorn starts running, zoom, none of its present day predators like the bobcat or coyote can even hope to catch up with it. It's off in a flash, okay, so why then do pronghorns run so fast? That's the question. Well, it turns out that quite a long time ago, I am talking tens of thousands of years. Things on the grassy plains used to be very different for the pronghorns. Because back then, lions used to live on the plains, chasing and preying upon the pronghorns and lions, of course, are a very swift moving mammal, much faster than the bobcat and coyote or other predators that you find on the plains today. But now, hoWe’ver, lions are all extinct in north America. There are no longer a predator of the pronghorn. Tens of thousands of years ago, though the lions were there chasing the pronghorns, so back then, the pronghorn’s speed was critical to its survival.

# TPO 19

Okay, so an example to illustrate this. You often see this happen in families. Let's say there are these two kids, a sister and a brother. Let's say the girl is six and the boy is four. And one day they are all out shopping with their mother, and they are in a store and the girl sees a toy she wants. She asks her mother to buy it, to buy the toy for her, but the mother says no, so what does the little girl do? She starts crying and screaming, you know, mummy I want this. And finally, mum gives in and says okay, fine, you can have it and buys the girl the toy. Now, don't forget, the little brother is there and he is watching all this happen and maybe he sees this sort of thing happen a lot as mother giving in when his sister cries and screams, what do you think he is going to start doing when he wants something from mum? He'll probably cry and scream, right? But what if the opposite had happened? Say mum didn't give in and didn't buy the girl the toy, in fact say mum instead disciplined the girl for screaming and crying when they got home, she didn't let the little girl watch her favorite TV program. Again the little boy is watching, now, what's the little boy likely to do if he finds himself in a similar situation and he wants mum to buy him something. Chances are he is not going to cry and scream, right?

# TPO 20

Okay, so we've been talking about starting a business. Let's say I want to open up a pizza restaurant. Well, I know how tough it is to make a new business succeed and I want to a sure thing. So I contact a big company that owns a chain of pizza places. Let's say it's called Pizza Town and I pay for the rights to call my restaurant Pizza Town and to sell Pizza Town 's special one of a kind pizza. Now since everyone has heard of Pizza Town, it's really popular. I don't have to worry about whether people will want to eat my pizza or not. I already know this pizza will sell well, because it's a known thing. And that means that there is a better chance my business will succeed. Now in exchange for being able to call my restaurant Pizza Town, I have to agree to run the business the Pizza Town way. And Pizza Town trains me to do this. They show me how do everything. How to make my pizzas taste like Pizza Town pizzas. How to advertise, even how to make my store look like a Pizza Town. Now this means that I don't have a lot of freedom or choice in the way I run my business. But in a lot of ways, this is great for me. After all, Pizza Town 's way generally works, they sell a lot of pizza.

# TPO 21

So I used to teach a class of eight year olds, and one problem I sometimes had was getting the kids to raise their hands when they wanted to answer a question. Like lots of teachers, I had the rule that if a student wanted to answer a question they needed to raise their hand in the air and wait until I call their name before speaking, that gave all the students a chance to participate, which helped everyone get more out of the discussion. But some kids had trouble following the rule. I remember there was one girl, Sarah, who didn't raise her hand when she wanted to answer a question. She would just call out the answer, and this was frustrating for the other children who were waiting patiently with their hands raised. So one day, when Sarah called out, I asked her if she knew that calling out was unfair to the other students. I said to her, "Sarah, do you realize that when you call out your answers without raising your hand, you are not being fair to the other students. You are not giving them a chance to answer questions, too." And I didn't wait for her to answer, I just continued teaching the class. And after that, anytime I asked the class a question, Sarah didn't call out the answer. She raised her hand along with everyone else.

# TPO 22

So I have a personal example, some years back, my wife and I were looking for a house to buy. We found this great old house out in the country, but my wife had her doubts about it, she noticed the house wasn't in very good condition. It was a little run down and probably needed some repairs. But I really fell in love with the architecture of the house, the unusual way it was designed and built, so I convinced my wife that we could hire people to fix it up and you know, make the house nice. We decided to buy it and live there after the repairs were finished. Well, the workers we hired to repair the house soon discovered things were worse than I thought. It turned out that the roof was damaged and needed expensive repairs. After the roof was repaired, the workers discovered that the house had electrical problems. Most of the wiring was bad, and would have to be replaced at a huge cost, well, at this point, my wife reminded me of her earlier doubts about the house and wondered if we could ever get it in good shape. But I just became more determined than ever. I paid for all the wiring to be replaced by an electrician. But it gets worse, the electrician noticed that insects had eaten into some of the walls and they would also have to be torn out and replaced. This was going to be more expensive than all the other repairs. But, by this point, I felt determined to keep going. I kept thinking I have to do it, if I stopped now, my wife will think I was wrong for not following her advice.

# TPO 23

I have an example from my own life that illustrates this. When I first began my university studies, I became friends with a butch of arts students. They were older and fun and very creative and I thought they were really cool, and they all liked to dress really casually, in T-shirts and jeans and sneakers, that's what they wore all the time, to class, to the library, to dinner, everywhere. T-shirts, and jeans and sneakers, so that's what I started wearing too. And I fit right in and I felt really cool. But then I graduated, moved to Chicago and got a job, and I started working with some really bright young people who'd already been working at the company for a few years, who were already handling major responsibilities for the company. Really impressive, and sometimes, some of us would get together on the weekend maybe for a concert or a baseball game or something. And at first, I just wore a T-shirt and jeans and sneakers, that was, you know, how I was used to dressing. But I soon noticed that my coworkers preferred to dress up a little bit. The men would wear a nice pair of pants, bottom up shirt. The women might wear a fashionable dress and some nice shoes. They dressed in clothes a lot nicer than what I was used to wearing. And I started thinking, you know, that looks really classy, really sharp, and so I started to dress the same way they did, you know, nicer, a little more formal. And I don't know, somehow my T-shirt and jeans and sneakers didn't seem as cool to me anymore.

# TPO 24

So one example of this is the macaw, the great green macaw, now the great green macaw is a beautiful bird, a fairly large sized parrot known for its colorful feathers. Gorgeous green feathers with some red and blue feathers, too. The macaw lives in the South American rainforest in a part of the rainforest where a lot of trees have been cut down. Trees that the macaw relies on for its food and nesting. So the macaw was in trouble, and of course along with the trees, a lot of other animals were in trouble, too. Lots of birds, bats and frogs also lived in these trees. So when the trees were cut down and cleared away. These animals also didn't have a place to live in any more. And their populations drastically declined. So what a concerned group of people in the area did was they started spreading the word about how the macaw you know this really beautiful bird needed help, they made little books with information about the macaw. With pictures, full colored pictures of the macaw that showed off its beautiful feathers. And they passed out these little books these information brochures, they distribute them to people in schools and community centers in the area. And a lot of people responded, they contributed money and helped the group set up some protected land, a special area where no one could cut down the trees. So the macaw would be safe. And the macaw 's population started to increase and other birds and bats and frogs came back to the area too. Their numbers increased along with the trees.

# TPO 25

Now, the invention of the telephone was revolutionary. It was a much easier and faster way of communicating than anything else available of the time. HoWe'ver, when the telephone first became widely available towards the end of the nineteenth century, only businesses used telephones because businesses realized how telephone could benefit them, how it could help them be more productive. But a lot of people in the general public didn't think the phone should be used for personal communication. Some people didn't like to listen to someone's voice without being able to see them. Also, a lot of people thought that it was rude to call someone on the telephone instead of visting them in person. They missed the sense of personal connection they got from meeting someone.

HoWe'ver, as we all know, people gradually changed their minds about the telephone. It took about thirty years. But eventually, most homes came to have telephones and everyone came to depend on them. Talking to someone you couldn't see began to seem more and more normal. Friends began to call each other just to chat, just for fun. And after everyone agreed on certain rules of politeness, such as not calling someone late at night, no one consider it rude anymore to make personal phone calls.

# TPO 26

OK. So a good example of this type of plant common to the rain forest is the urn plant.

The urn plant wraps its roots around the branches of the trees or sometimes around the trunk near the upper part of the tree. They use the trees for support. And this allows them to reside high in the trees, in the canopy, where they can get plenty of sunlight.

Now, the urn plant has an unique shape. It got its name because the formation of its leaves creates a kind of urn or bowl where it can store water. The urn plant has rather long stiff spiky leaves. The leaves are slightly overlapping and are tightly rolled into a kind of cone shape or a funnel shape. Its flowers are held on a single stem in the center. Anyway, as I mentioned, the arrangement of the leaves forms a kind of receptacle or bowl at the base, so that as rain water collects on the leaves, it rolls down into the bowl, where it can be stored.

OK. So its unique shape helps it gather and store water, it also helps it to gather other nutrients. This is because insects, dead leaves from other plants or other debris land on the leaves and then get washed down into the stored water. Gradually, they decompose, the chemical breakdown creates a nitrogen-rich food source in the stored water. So the water supply contains a kind of liquid fertilizer, that can be released to the plant whenever it needs it.

# TPO 27

OK. We can see a great example of this with ants. Ants live in large groups called colonies. They normally move together to get to food sources. And sometimes when ants are moving toward a food source, they'll encounter or find an obstacle in their path. So for instance, let's say a large number of ants are walking on a tree toward some food on a branch. But when they reach the end of the branch they are walking on, there's a wide space between that branch and the next one, the branch with the food on it. Now, none of these ants alone can cross this wide space to get to the other branch with the food. So how do they solve this problem?

Here's how. One ant walks forward until it reaches the end of the branch and then it automatically holds onto the branch with its back legs. Then it stretches its body forward into the open space. Now, this comes naturally to ants and it's a simple action. So then the next ant walks to the end of the branch and right across the first ant's body. Then it holds on to the first ant and then it stretches its body out into the open space, just a little bit closer to the branch with the food on it. Then one after another, other ants do the same thing, until enough ants connect together to form a bridge between the two branches. Pretty amazing, huh? The connected ants hold this position, allowing the rest of the ants in the group to cross over this bridge of ants to reach the food.

# TPO 28

All right. So I actually saw a good example of this just the other day. I watched an advertisement on television for a well-known company's pots and pans. And in the advertisement, there was a woman, a professional cook, talking about how she uses the company's pots and pans in her own kitchen.

Now, the woman in the advertisement began by saying that this company's pots and pans were expensive. She just came right out and admitted it to the audience that they cost a lot more than most other companies' pots and pans. And she also said she realized it when people went shopping for a new cookware, they might feel that they just didn't want to spend all that money on such expensive pots and pans since there were so many others in the store that cost a lot less.

But then she went on to explain that the extra cost was worthwhile because although these pots and pans cost more to begin with, they actually save you money in the long run. How? Well, they came with a special lifetime warranty, which meant the company would replace them free if anything ever went wrong. And that's something most companies that make pots and pans couldn't say about their products.

# TPO 29

OK. So we sometimes see this with animals that live in parts of the world where it gets very cold in the winter. For example, in the Northeastern United States, there's a species of squirrel that does this. This squirrel, like many species of squirrel, loves to eat nuts. Nuts are one of its primary sources of food. Now nuts are very difficult to find in the winter, but in the autumn they're lying all over the place because that's when they fall from the trees. So what this squirrel does is: in the autumn, it spends a lot of time finding nuts. After it finds a nut, it prepares it. It takes off the outer shell and cleans it. This preparation may in some way help preserve the nut and… or may make it easier to eat later on. The squirrel then digs a little hole in the ground and buries the nut. In one autumn, this squirrel may bury hundreds of nuts. But it doesn't just dig a big hole and put all the nuts in it and cover them up. No. It digs hundreds of holes all over the place and it puts just one nut in each hole. Now, why would it do that? Well, probably, primarily because even if other animals happen to find some of the holes, some of the nuts, the squirrel will still have a lot of other holes with nuts in them. So it'll still have enough food to survive the winter.

# TPO 30

So here's an example. My daughter had a friend over to our house recently and they decided to watch a movie together, only they got into an argument because they couldn't agree on what movie to watch. My daughter started to get quite upset during the argument, which wasn't like her at all. But then my daughter stopped and thought about why she was so upset, she realized her reaction was inappropriate and she also realized she wasn't really upset with her friend. There was something else bothering her. You see, she'd just gotten a summer job as a camp counselor for children and she was feeling a lot of worry and stress about how well she would do since she'd never worked with children before. So she figured out that she wasn't upset about what movie to watch with her friend, but about starting her new job. She really wanted it to go well. She wanted the kids to like her. And when she understood this, she stopped arguing with her friend and apologized to her. She told her friend how anxious she felt about starting the job and how sorry she was about getting upset with her. And her friend encouraged her saying she'd do great at the job, so my daughter felt better. And they relaxed and had fun together, the same as always.

# TPO 31

So a good example of this is something that happened to me. When I was younger, I had an office job and I worked there every day during the week. And I made a regular salary from that. But also I worked as a waiter at a restaurant each weekend, so I made some money from doing that.

Now, around this time, I decided I wanted to buy a house. So every time I got my regular paycheck from my job at the office, I'd save as much of the money from it as I could after I bought the basic stuff I needed. But with the money I made as a waiter that was another story. Somehow I guess that money seemed separate from the money I earned at my regular job. So I used the money I made at the restaurant to go out to dinner, to buy videos or CDs, things I didn't really need.

But the thing is, it ended up taking me a really long time to save up all the money I needed to buy the house. And looking back now, I realize I could have bought the house a lot sooner if only I had saved more of the money I made working at the restaurant.

# TPO 32

OK, so an example of this from my own life: five or six years ago, I was helping a friend of mine decide on a house to buy. He had been in the market to buy a house and he had it narrowed down to this one house that he was interested in. What he really liked about this house was it had an excellent location. It was in a great place that was actually in the same part of town where he was working right up the street from his job. So he wouldn't have far to drive to get to work which he really liked.

HoWe'ver, the down side of this house was that it was smaller than what he was hoping to buy. He wanted to buy sort of a big house and this house just wasn't that big. So it was a tough decision. But my friend eventually did decide to buy the house. And a few years after he made the purchase, I remember, we were talking about the decision and why he decided to buy the house. He told me, well, of course, it was because of the house's location. He told me how happy he was with the fact it was so close to his work, how great it was only few minutes from his job. I said, "Yes, but, what about its size? Do you still think the house is kind of small?"And he looked at me kind of surprised, "Small? What do you mean small?"Like he didn't know what I was talking about. The house's size, a couple of years after buying it, just didn't seem to be on his mind anymore.

# TPO 33

OK, so let’s talk about what happened to a certain type of insect, a moth, a red-and-black moth that lives in Europe. These moths eat a plant called Ragwort and they live in fields where the Ragwort plants grow. Now, there was a group of moth that lives in one of these fields and, for many years, there was a lot of Ragwort growing there. So the moth had plenty to eat and the total number of moth in the field stayed pretty much the same.

But then one year it rained a lot less than usual and the Ragwort didn’t grow as well. The result was that the moth didn’t get enough to eat and many didn’t survive but even the ones that did survive didn’t lay as many eggs as before. So that year the moth population in the field was quite a bit smaller. The next year, though, the amount of rainfall returned to normal and again many more Ragwort plants grew and, once again, there was a lot available for the moth to eat. So that year the moth population increased and the female moth laid many more eggs than the year before.

And now, after all that rainfall and plant growth, there were just as many moth in the Ragwort field as there were before.

# TPO 34

Some researchers did an experiment related to this. What they did was they assembled a group of subjects, a group of students, and they showed these students a series of geometrical shapes. These were very distinctive shapes, a little unusual, not the kind of shapes students often see. But they only showed the students the shapes for a very short period of time, about a second. They also lowered the light in the room to make it even more difficult for the students to see the shapes. So the shapes were there for a split second in dim light and then they were gone.

In the next step of the experiment, the researchers again showed the students some shapes, but this time they gave the students a longer time to look at them. And this time they showed the images in pairs, two at a time. In each pair, one shape was a shape the students had already seen for just a split second in dim light. And the other was some other shape that hadn't been shown to them before. After presenting each pair, the researchers asked the students to say which of the two shapes they liked better. Most of the time, the students preferred the shape the'd already seen earlier in the experiment. Now, if you asked them if they'd already seen that shape, they probably wouldn't know for sure.

But that didn't matter. They still tended to prefer the shapes they'd already seen.

# TPO 35

Okay. So an example of this is when chickens are used to prepare a field for planting.

Farmers who do this have a special kind of little house that they keep their chickens in. This little house has four walls and a roof, but it doesn't have any floor. And it has wheels attached to it so it can easily be moved from one location to another. So farmers move this little house to a field where something is going to be planted, say, bean plants. And then the chickens are placed inside the house.

Now remember there's no floor in this house. And what the chickens do is, they walk around inside the house and peck at the soil and eat any weeds or wild plants that they find. And then when the chickens are done eating the weeds in that location, the farmers move that house to the next section of the field. And again, the chickens peck at the soil and eat the weeds. So the chickens get to eat lots of weeds, which are good for them.

Now this activity is also good for the bean plants that'll be growing in the field because when the chickens eat the weeds they are improving the quality of the soil. Thanks to the chickens, when the bean plants start to grow, there won't be any weeds there to compete with them for crucial resources like sunlight and water.

# TPO 36

So for example, back when I was in college one of my roommates, Richard, was in a play I went to see and when he first walked out on stage, I have to admit I was a little distracted. Richard was dressed up like an old man. I could tell that his hair was colored gray and he was pretending, you know, to be older, so he walked more slowly; the way an older person would, but at first I only saw him as my roommate dressed up to look like an older man, but then as the play went on I began to think of him less as the guy I lived with and more as this older man who was a father; one who had worked very hard for his family, the family in the play and in the play the father gets sick and so, is out of work, which you know, caused me to become a little sad and because of the father's long illness, the family was worried that they wouldn't have enough money to pay the bills and this made me feel worried too. Well, in the end, what happened was the family all came together and everyone found jobs and started working. They all pitched in to help in the time of crisis, so the family gets by and pays their bills and soon after, the father recovers from his illness and this made me feel relieved and even rather happy.

# TPO 37

Ok, so here's a good example of this among ants. Ants live together in these large nests and certain ants, the forager ants, have a particular job to do. They go out each day to look for food items; leaves, seeds, fruit, things like that and then these ants bring them back to the nest, so all the other ants can eat them. Now, the forager ants don't just bring back whatever they may happen to find. They bring back different kinds of food . For example, adult ants normally like to eat things that are rich in sugar because they need energy to carry on other activities in the nest, so at a time when the colony is composed mostly of adult ants, the forager ants look for pieces of fruit and other sugar - rich items. They bring these back to the nest for the adult ants to eat to get the energy they need, but there is a time of the year when baby ants are born. Now, the baby ants need a different kind of food. They need food that will help them grow into adults, so their food needs to be rich in protein. So now the forager ants do something different. They start to gather more food items that are rich in protein, like certain types of leaves or mushrooms. This way the young ants get the protein they need to help them grow.

# TPO 38

So, here's a good example of this. Mites are very small, insect-like creatures. Mites live in tropical climates and feed on nectar and pollen and flowers, but these tropical flowers don't last long. They wilt and fall off quickly and so the mites need to find new flowers in order to get more nectar and pollen to eat, but the mites can't fly and they are so small that it would take them awhile and a lot of effort to climb down one flower, crawl to another one, and climb all the way up again. So, how do they get to the next flower? Well, there's a bird: the hummingbird. Hummingbirds eat the nectar from the same flowers as the mites, so when a hummingbird comes around and sticks its beak into the flowers to get the nectar out, the mites quickly climb onto the hummingbird. Well, as I mentioned, mites are pretty tiny, so the hummingbird isn't harmed in any way and all they do is stick to the hummingbird. Since the hummingbird also goes from flower to flower for nectar, it takes the mites along. Once the hummingbird gets to the next flower, the mites climb off and eat some pollen and nectar there on the new flower. Without the hummingbird carrying them from one flower to another, the mites would find it much more difficult getting food.

# TPO 39

So, okay, here's a good example. A friend of mine owns a small jewelry store where she sells jewelry. And the jewelry she sells, watches, rings, necklaces, is very expensive, thousands of dollars because it's all real gold, real diamonds and other precious gem stones. So of course when customers come into her store, well, if they are considering spending that much money on a piece of jewelry, they want to make sure ifs authentic, that the gold is real, that the gem stones are real and not just pieces of glass. But most customers don't actually know how to tell the difference on their own.

So in order to reassure her customers what my friend did is she had a jewelry expert come in and look at all the jewelry in her store. This expert had like twenty years of experience examining jewelry so he knew a lot about it. And the expert examined all the precious gem stones and certified that they were authentic, real. And then my friend put up a sign in the store saying that all the jewelry in the store had been certified as authentic by a leading expert. So her customers would see the sign and know that all the jewelry in the store was real. And since the expert didn't work for my friend's store, it didn't matter to him if the jewelry got sold or not, so customers were likely to trust his opinion. The expert was therefore able to provide evidence that the jewelry was worth the high prices.

# TPO 40

I know some scientists who were observing snakes in the wild. And they witnessed an encounter of this sort between two rattlesnakes.

Uh...as you may know, rattlesnakes eat various kinds of small animals. Small animals that live underground, in burrows, in little holes in the ground. And what these scientists saw was these two rattlesnakes had found the same hole and both wanted to eat whatever food was in that hole.

So what happened was: The two rattlesnakes faced each other and then they lifted their bodies into an upright position and made themselves as tall as possible. And then they started pushing each other, kind of wrestling with one another, each snake trying to gain control of the other snake.

And what's interesting is that during all these pushing and shoving and maneuvering, neither snake ever tried to bite the other snake. Neither snake ever tried to injure the other snake. So…after this went on for a while, one of the snakes finally gained control of the other snake, pushed it to the ground and held it there. At this point, the snake that was on top could have easily bitten the other snake. But it didn't. Instead, it just released the other snake, just let it go. The snake that had lost just slithered away, and the snake that had won went down into the hole to look for food.

# TPO 41

Here's an example from my own life. Before I started teaching, I worked as a research assistant in a laboratory for a year.

Well, during my very first week on the job, I made a suggestion to my boss on how we could improve the way we were running an experiment. My suggestion was a good one. The experiment was successful and we got great results.

Anyway, that first week, because of that one experiment, my boss decided, perhaps without even realizing it, he decided I was a great research assistant and he never changed his mind. After that first week, I was...l was okay, you know, average. I was a good worker, but I also made mistakes.

Everyone does. But whenever my boss introduced me to someone, he'd say, this is John, our star research assistant.

But a co-worker of mine, she wasn't as fortunate, her first week at the lab, she made a big mistake and the lab lost some important data. We recovered the data, but it cost of the lab time and money. Well, our boss concluded that week that my co-worker was unreliable, incompetent.

And he continued to think that. But, actually, after that week, she turned out to be a good research assistant, probably better than me. She made some other small mistakes, like I said, everyone does. But our boss thought of her as unreliable cuz he only noticed her mistakes.

# TPO 42

Prairie dogs are small animals you're likely to find on wide, relatively flat, grassy areas of land in North America. They tend to live together in large numbers. Now, generally these animals don't come into contact with human beings, but every now and then, they do. So let's assume that some prairie dogs happen to live in an area where human beings frequently come and go.

Now the first time the animals would see a human being, they'd instinctively react by making a sharp barking sound like a dog and jumping up and down, essentially warning or alerting other prairie dogs that are nearby of this potential threat, exactly the same way they'd react if they came upon or were threatened by a snake or a hawk, an animal that preys on them. Their instinctive reaction would be one of fear. They'd keep an eye on the human beings until these scary, possibly threatening individuals are gone. And…they're likely to react this way every time they see a human being.

HoWe’ver, if people pass through the area day after day without threatening them or trying to harm them, well, it turns out that the prairie dogs will gradually stop barking and jumping up and down when they see a human being passing through the area. At some point, they'd stop reacting to humans as though they were a threat.

# TPO 43

Imagine there is a group of mice living in a large field and owls living nearby. Now owls eat mice.

So the number of mice there are in any given time depends upon on the number of owls in the area, because the more owls there are, the more mice get eaten, right?

Now imagine one year there are more owls than usual. Since there are more owls in the area to eat the mice, what do you think will happen to the number of mice? As you can imagine, the number would drop. There would be fewer mice.

As far as the other factor, we can use rabbits to help understand this one. Imagine a population of rabbits living in an area. These rabbits usually start having their young at the end of winter, after the cold winter weather is gone. And they keep reproducing until the following winter when they will stop again while the cold winter weather lasts.

But let's say this year the winter season is very short, and you know, it starts getting warm much earlier than usual. Since winter this year is so short, the rabbits can start reproducing much earlier. That means the rabbits in that area will have at least one extra reproductive cycle, so of course one extra litter of baby rabbits. So the number of rabbits in that area would increase a lot.

# TPO 44

OK, so, for example, I have a friend who owns a company that does construction. His company's often hired to make improvements to someone's house or yard. So, recently, this woman hired him to build a fence around her yard. She said she wanted a wooden fence running all the way around her backyard. She and my friend quickly settled on a price for the job. They basically just made a verbal agreement about the work that will be done without putting any of the agreement in writing.

And so my friend got to work building the fence. So when my friend was almost finished building the fence around the woman's yard, the woman told my friend that she wanted the fence painted white. My friend was surprised by this, because he did not think that he had been hired to also paint the fence. He told the woman this, that he had just been hired to build the fence, not paint it. But the woman said she thought when she hired him to build the fence that this also meant the fence would be painted. They ended up arguing and eventually my friend finally agreed to paint the fence without charging extra just to be nice, but he wasn't happy about it.

# TPO 45

So how would this work?

Well, let’s say you need to learn the names of the planets, in order, by distance from the Sun. So, first, think about the landmarks you pass as you walk from, say, your dormitory, to the student center. The first one might be the front door of your dormitory, then the big tree in front of the dorm. The next landmark you pass might be the statue in front of the library.

Next, the steps to the science building. You get the idea.

You memorize the major points along the walk, imagining yourself going from the first landmark to the second, the third, and so on. Now, the next thing you do is assign one planet to each of your landmarks in sequence. Since Mercury is the closest planet to the Sun, you assign it to the first landmark, the front door of your dorm. The next planet, Venus, to the tree in front of the dorm. The third planet, Earth, you assign to the third landmark, the statue in front of the library, and so on and so on. And each time you picture the association in your mind as vividly as possible.

Then later, say you are sitting in the classroom taking a test, and you have to write the order of the planets from the Sun. What do you do? You imagine yourself on that familiar walk to the student center, passing each landmark as usual. When you think about walking out of the door of your dorm, you are reminded of Mercury. When you see the beautiful tree in front of the dorm, you’d think of Venus. At each landmark along the way, you recall the next planet and write it down.

# TPO 46

We have a good example of this with the skunk. As most of you know, the skunk is a furry little mammal that can be found throughout North America. Skunks have a very distinctive marking. Their body is mostly black, and they have a big white stripe that runs from the top of their head all the way down their back and along their big bushy tail. So they're very easy to see and very easy to recognize even from a distance. Skunks also have special glands under their tail that produce a terrible, smelling liquid. And when skunks are approached by a predator, they lift their tail and spray the predator with this liquid. For example, let's say a wolf is preparing to attack a skunk. As the wolf approaches, the skunk lifts its tail and sprays the wolf. That's very very unpleasant for the wolf because it's now covered with this repulsive, foul-smelling liquid. The wolf doesn't want to be sprayed again, so it backs off and leaves the skunk alone. And from then on, whenever that wolf sees a furry, little black body with a big white stripe running from its head to its tail, it'll recall that terrible smell and it'll be sure to stay far away.

# TPO 47

Think about when you were a kid. Imagine you like this one playground. You play there a lot, have lots of fun, you know. Okay. Now imagine that one day, for no apparent reason, your parents decide that they don't want you playing there anymore. You are not allowed to go there anymore. Of course you're not gonna like that one bit. It's not fair. And now that you are not allowed, you want to play there even more than before. So you sneak over there anyway. You go to this playground despite your parents' rules.

Here`s another example.

There was a town that passed a law that banned the sale of a certain kind of soap. There was an ingredient in this soap that was harmful for the environment. So stores weren't allowed the sell the soap anymore. Keep in mind that this ingredient had no effect whatsoever on this soap's ability to clean things. None, but people found out about the upcoming restriction and got upset. They thought they should be able to buy whatever soap they wanted. It wasn't right to take this soap away. And a week before the law went into effect, what happened? People went and bought a whole lot of this particular soap, way mare than they would have in another circumstance.

# TPO 48

All right. So I've got a good example of this.

There's a bird, a species of crow, that lives near the water and it feeds on a type of shellfish that has a hard outer shell. In order to eat the shellfish, the bird has to crack open its hard shell. So when this bird feeds, what it does is: it dives down out of the air into shallow water, grabs a shellfish in its mouth, then carries the shellfish up in the air. It then drops the shellfish, lets it fall onto the rocks below. When the shellfish hits the rocks, its shell cracks and splits open and the bird can eat it.

Now, this bird, this crow, doesn't just swoop down, grab the first shellfish it sees and then fly up to any height and let it fall. Instead, it does two things.

First, it carefully selects only the biggest shellfish. That means it's going to get the biggest possible meal for its efforts. Okay?

Second, it carries the shellfish up to a specific height, about five meters, and drops it from there. If the bird dropped the shellfish from a lower height, it would have to pick it up and drop it too many times in order to break the shell. On the other hand, if the bird carried the shellfish up to a higher altitude, an altitude higher than it's necessary to crack the shell, it would be wasting energy. So this bird expends just the right amount of energy-no more no less-that it needs to obtain just the right kind of food.

# TPO 49

I've experienced this kind of thing myself. When I was a boy, I took guitar lessons. And in my first lessons, my guitar teacher, she showed me how to hold the guitar and how to place my fingers on the strings. Every day when I got home, I would play the guitar for hours. And after a couple years spending time like this playing at home, I can just pick up my guitar and play music without thinking about it.

But after college, I stopped playing. And for years, I never played or even picked up a guitar. Then the other day I found my old guitar. I was amazed to discover that when I picked it up I knew how to play, even though I hadn't played for years. I just picked it up and right away I found that I still knew where to place my fingers to play the right notes.

Now I couldn't explain to you exactly how I was moving each finger or exactly why I had to press the string at one point and not another, but I could still play my favorite songs.

# TPO 50

When I was a student in middle school, some of my classmates and I got an assignment to do a group presentation on tropical plants. Okay, and as part of this assignment we needed to memorize the names, you know, and certain key characteristics of the plants. Then on the morning the assignment was given our teacher gave us time to work on the presentation during class, right there in the classroom. So there we were, during the school day, in our usual classroom, studying and memorizing the information, and our teacher and the other kids in the class were all there too. Okay.

So then later on the night before the presentation I invited my group members over to my house to do some final studying. And there we were, it was after dark, my parents and my brother were in the next room watching TV and no one else was around. It felt pretty different from working in the classroom with all our schoolmates around, like it was on that morning when we spent time learning the information. Anyway at my house, when we tried to remember the plant information, we got a little worried, suddenly it was more difficult to remember all the names and different facts. But the next morning when we were back in the classroom, the presentation actually went very smoothly. It was easier for us to remember what we needed to talk about.

# TPO 51

You know, there are lots of different companies out there that make and sell cookies or biscuits. But there is one company, Big Bear Cookies, that has used this technique to sell more cookies than all its competitors. How? Well, the company has this animal character called Big Bear that it uses in all the advertising. The picture of the bear on its cookie boxes and the character of the bear also appears in its TV commercials. Oh, and of course, the cookies themselves are shaped like big bear. Now most people who eat big bear cookies are children and well they enjoy the bear and think it's really entertaining and fun. In the TV commercials, for example, he's always saying funny things and dancing around in a lively, comical way. So big bear makes children feel good about the companies' cookies, makes children want to get them. And you know, the real interesting thing is that the figure of big bear stays in people's minds and makes them think of cookies even though bears usually don't have anything to do with cookies. I mean bears certainly don't make or eat cookies, right? Yet, big bear is a character that people, particularly children, don't seem to forget because year after year Big Bear Cookies sells more cookies than any other company.

# TPO 52

Have you noticed how…when a student gives a class presentation, it might dress just a little more formally than usual? Eh…for example, if you usually wear jeans and a T-shirt to class, you might wear nicer pants, a nicer shirt or sweater because you know, you are dressing up, you want people to know, even before you begin speaking, that you take this presentation seriously, that you've come prepared, that you are a responsible student, that you've got a good presentation for us. You get the idea. Or, Uh, here is another example. There was this one time when I knew I was going to be giving…the president of the University a ride. It was to a meeting across town. Anyway, the day before I was supposed to give him a ride, I wasn't even aware of doing this. But the day before I was supposed to give him a ride, I took the trash out of the back seat and even had the car washed. I suppose I was thinking back on my mind that you know, if my car was neat and tidy, the president would think that I was responsible and respectful. And then to top it up, when the president got in the car, I changed the radio to a classical station. Now I don't even like classical music, I guess I must be thinking that the classic music would seem more sophisticated.

# TPO 53

I have a three-year-old daughter, and last month I decided to help her learn how to wash her hands by herself. Now we usually think of washing our hands asone action, but when you think about it, you can break hand washing down into a series of simpler steps. Step 1, you turn on the water. Step 2, you get your hands wet. Step 3, you add some soap. Step 4, you rinse your hands and step 5 you turn off the water. So I broke it down into these steps and I help my daughter learn them one step at a time. I didn't present them all at once, because that would've been too complicated. First I showed her step 1, turning on the water, that's all we practiced for the next few days. Then when she started turning on the water by herself I added step 2, getting her hands wet. And for the next few days she practiced steps 1 and 2, turning on the water and getting her hands wet. Until she could do both steps on her own, then we added step 3, putting on the soap. And she practiced steps 1, 2, and 3 for a while. Then we added step 4, rinsing her hands, and eventually step 5, turning off the water. She practiced all 5 steps in sequence for a few days until she could wash her hands all by herself.

# TPO 54

For example, I used to work for a corporation that was having problem with workers being absent a lot. To help address this problem, they hired a consultant who began by interviewing a lot of the workers, and getting to know more about them. She also researched other aspects of the company, such as the types of eating facilities and health services it offered. And what the consultant discovered was that many of the employees were missing work not for an obvious simple reason, like, say, lack of motivation, but because of health problems. Health problems that were the result of, or at least made worse by a combination of factors such as poor eating habits and lack of exercise. The consultant concluded that since the company didn't offer exercise opportunities or healthy meals, that this indirectly contributed to the workers' poor health. The consultant proposed building a gym within the company office building for employees to use to exercise, and also to offer more nutritious menu in the cafeteria, which the company did, but it took a while. And after a year or so, after the company had time to construct a gym and revise its cafeteria menu, attendance began to improve and continued to improve until it was no longer a problem.