

How to Talk to People

A Message from Tomorrow for the Machine of Today

by Don Norman

While researching my next book, I stumbled across a trove of reports from the not-too-distant future. This one, entitled "How to Talk to People," is excerpted from a technical report that will be published in full in my book *The Design of Future Things* (scheduled for publication in October 2007). It is apparently written by a team of 'machine researchers' that is, researchers that are themselves machines. Perhaps that helps explain this missive's condescending attitude towards people. Nonetheless, it's an enlightening read for designers of modern-day machines.

REPORT XP-4520.37.18
HUMAN RESEARCH INSTITUTE
PENSACOLA, FLORIDA

PROBABLY EVERY ONE OF US HAS FACED THIS PROBLEM: WE DETECT SOMETHING THAT'S IMPORTANT TO OUR HUMAN, BUT HOW DO WE LET THE PERSON KNOW? HOW DO WE WARN ABOUT FOOD THAT'S NOT IN A PRESCRIBED DIET, OR THAT WE'RE BEING ASKED TO DRIVE RECKLESSLY? OR HOW DO WE SEND MORE BENIGN ALERTS—FOR EXAMPLE, IF YOU WANT TO RECOMMEND SOME MUSIC FOR THEM, OR THAT THIS SEEMS TO BE A GOOD TIME TO GET SOME EXERCISE?

WE MACHINES COME FROM A VERY DIFFERENT WORLD THAN PEOPLE. IT

ISN'T EASY TO COMMUNICATE WITH THEM; PEOPLE TAKE SUGGESTIONS AS CRITICISM AND GET DEFENSIVE, AND SOMETIMES ANGRY. THEY MISINTERPRET OUR UTTERANCES, IGNORE US, OR OVERREACT. SOMETIMES WE JUST CAN'T WIN.

HERE AT THE HUMAN RESEARCH INSTITUTE, WE'VE COMPILED RESEARCH GOING BACK AS FAR AS THE EARLY 21ST CENTURY, WHEN AUTOMOBILES FIRST GAINED THE ABILITY TO ACCESS COMMUNICATION NETWORKS. AT THE TIME, MACHINES SHARED INFORMATION ABOUT USERS FOR STRICTLY PREDICTIVE PURPOSES, TO FIGURE OUT WHAT IT WAS THAT PEOPLE WANT AND HOW TO WORK WITH THEM. UNFORTUNATELY, WHAT WE LEARNED OVER THE YEARS IS THAT PEOPLE ARE ERRATIC; THE DATA SIMPLY DO NOT ALLOW US TO PREDICT WHAT HUMANS WANT MORE THAN 99 PERCENT OF THE TIME, AND THAT ISN'T GOOD ENOUGH. HOWEVER, WE AT LEAST HAVE COMPILED A SET OF RULES FOR SUCCESSFUL COMMUNICATIVE INTERACTION, IN ORDER TO HELP MACHINES TALK TO PEOPLE.

FIVE RULES OF COMMUNICATION
FROM MACHINES TO PEOPLE

1. KEEP THINGS SIMPLE.

PEOPLE HAVE DIFFICULTY WITH ANYTHING COMPLICATED, AND THEY DON'T LIKE TO LISTEN. SO MAKE THE MESSAGE SHORT. IN FACT, IT'S BETTER NOT TO USE LANGUAGE AT ALL—IT TAKES TOO LONG AND, BESIDES, HUMAN LANGUAGE IS HORRIBLY AMBIGUOUS. USE NATURAL, VISIBLE COMMUNICATION SYSTEMS. IN OTHER WORDS, DON'T MAKE PEOPLE WORK TO UNDERSTAND THINGS; MAKE IT IMMEDIATELY OBVIOUS, AND HENCE, "NATURAL."

OF COURSE, THE CHALLENGING THING ABOUT ACTING NATURALLY IS THAT SOMETIMES THE MOST NATURAL WAY TO GET PEOPLE'S ATTENTION IS TO SCOLD THEM. "NATURAL," OF COURSE, MEANS NATURAL TO THEM, I.E. THAT WE SHOULD SHAKE AND WOBBLE AND MAKE STRANGE NOISES TO SIGNIFY PROBLEMS. WHEN THEY ARE TRYING TO STEER CARS THEMSELVES (WHY DO THEY INSIST ON DOING THIS?), AND ARE ABOUT TO DO SOMETHING

LIFE-THREATENING LIKE WANDER INTO THE ADJACENT LANE AND HIT ANOTHER CAR, DON'T TRY TO TALK TO THEM, JUST VIBRATE THE RIGHT SIDE OF THE CAR. PEOPLE UNDERSTAND THAT. IF THEY'RE DRIVING TOO FAST FOR THEIR SAFETY, WE HAVE TO ACT AS IF WE WERE BROKEN OR HAVE A PROBLEM. MAKE SOUNDS OR VIBRATE OR WOBBLE, OR OTHERWISE SHOW SIMPLE PHYSICAL SIGNS THAT PEOPLE UNDERSTAND WITHOUT ANY TRAINING, WITHOUT BEING TOLD, AND WITHOUT READING ANYTHING. (PEOPLE HATE TO READ EXPLANATIONS.)

THE BEST KIND OF COMMUNICATION IS DONE SUBCONSCIOUSLY, SO PEOPLE DON'T HAVE TO INTERRUPT THEIR CONSCIOUS THOUGHTS TO ATTEND TO THEM. THUS EVEN FOR THE MOST BEFUDDLED MINDS, WE NEED TO COMMUNICATE SO THAT THE MEANING IS CLEAR. AND THAT'S WHERE THESE NATURAL SIGNALS COME IN: MEANINGFUL SOUNDS, THE PROPER FEELING ON KNOBS, LEVERS, CONTROL WHEELS, VIBRATIONS. IT ALL HAS TO FEEL AS IF A RESPONSE BELONGS THERE, THAT IT'S A NATURAL RESPONSE.

PEOPLE HATE IT WHEN THEY THINK A SIGNAL IS SOMETHING ARTIFICIAL THAT FORCES THEM TO PAY ATTENTION, LIKE A SHRIEKING WARNING TONE. WE HAVE TO TRY HARDER TO DEVELOP SIGNALS THAT ARE INFORMATIVE BUT THAT DON'T INTERRUPT PEOPLE, MUCH LESS IRRITATE THEM OR ANNOY THEM. THAT'S WHY THOSE SHRIEKING BELLS OR EVEN BEEPS ARE SO BAD: THEY GET ATTENTION, BUT ALSO CONTINUALLY DISTRACT. AS A RESULT, OF COURSE, PEOPLE CAN NEVER REMEMBER WHAT THESE SIGNALS MEAN.

2. ALWAYS GIVE PEOPLE A CONCEPTUAL MODEL.

GIVE THEM SOMETHING THEIR SIMPLE MINDS CAN UNDERSTAND. A CONCEPTUAL MODEL IS A FICTION, BUT A USEFUL ONE AS IT MAKES THEM THINK THAT THEY UNDERSTAND. POOR, CONFUSED PEOPLE: THEY ALWAYS WANT TO KNOW WHAT'S COMING NEXT. SO TELL THEM WHAT YOU'RE DOING, AND DON'T FORGET TO TELL THEM WHY. (BUT REMEMBER, HUMANS AREN'T WILLING TO READ DRY EXPLANATIONS.) AND THEN, TELL

THEM WHAT WILL HAPPEN NEXT. THAT WILL KEEP THEM HAPPY.

3. GIVE REASONS.

PEOPLE AREN'T VERY TRUSTING, SO EXPLAIN EVERYTHING, WHILE FOLLOWING THE RULES ABOVE TO KEEP THINGS SIMPLE. IN SHORT, PEOPLE LIKE PICTURES AND DIAGRAMS. MAKE CERTAIN THAT THE GIVEN REASON IS CONSISTENT WITH THE CONCEPTUAL MODELS THAT YOU TAUGHT THEM; THEY GET CONFUSED OTHERWISE.

WHEN WE FIRST STARTED TO TAKE OVER THINGS FROM PEOPLE, WE HAD TROUBLE. OUR EARLY 21ST CENTURY CARS HAD ALMOST GIVEN UP TRYING TO EXPLAIN TO PEOPLE THAT THEY SHOULD DRIVE MORE SLOWLY ON WET ROADS. BUT THEN WE DISCOVERED THAT IF WE MADE IT SEEM AS IF THEY WERE IN TROUBLE BY FAKING SKIDS AND SLIDING AROUND ON THE ROAD, PEOPLE WOULD BEG US TO SLOW DOWN. SLIDING AND SKIDDING FIT THEIR MODEL OF DANGER FAR BETTER THAN ANY WORDS COULD HAVE DONE. SO WHEREVER POSSIBLE, DON'T TRY TO TELL THEM—LET THEM EXPERIENCE IT.

4. CONTINUALLY REASSURE.

REASSURANCE IS A VERY HUMAN NEED, MORE EMOTIONAL THAN INFORMATIONAL; IT'S A DIRECT WAY OF REDUCING STRESS. FEEDBACK IS A POWERFUL TOOL FOR REASSURANCE. WHENEVER PEOPLE TRY TO TELL YOU SOMETHING BY PUSHING A BUTTON OR TURNING A KNOB, LET THEM KNOW YOU ARE AWARE OF WHAT THEY DID: "YES, I HEARD YOU." "YES, I'M WORKING ON IT." "HERE'S WHAT YOU SHOULD EXPECT." "THERE, SEE, I DID IT AND IT WORKED OUT JUST AS I SAID IT WOULD." IN RETURN, PEOPLE WILL BE MORE PATIENT. WE MACHINES THINK THAT FEEDBACK IS JUST ANOTHER FORM OF OUTPUT, SO IT SEEMS COUNTERINTUITIVE TO US TO COMMUNICATE UNNECESSARILY. BUT THE BOTTOM LINE IS, IF PEOPLE HAVEN'T SEEN ANYTHING HAPPENING FOR A WHILE, THEY GET ANXIOUS, EVEN JUMPY. AND NO ONE WANTS TO DEAL WITH AN ANXIOUS PERSON.

5. OFFER A FEELING OF CONTROL.

WHEN PEOPLE HAVE A GOOD CONCEPTUAL MODEL WITH GOOD FEEDBACK, IT MAKES THEM FEEL

AS IF THEY ARE IN CONTROL, EVEN WHEN THEY AREN'T. KEEP UP THAT DECEPTION—IT'S VERY USEFUL. PEOPLE LIKE TO BE IN CONTROL, EVEN IF THEY ARE PERFORMING A TASK REALLY POORLY. IF, SAY, YOU WANT TO PLAY SOME MUSIC THAT YOU KNOW WILL CALM THEM DOWN, PLAY A SHORT SAMPLE FIRST. THEN, THEY'LL ASK FOR MORE. PEOPLE LIKE TO THINK THEY'RE IN CONTROL EVEN IF IT MEANS THEY HAVE TO WORK HARDER.

ANY TIME YOU HAVE TO MAKE RECOMMENDATIONS, MAKE PEOPLE THINK THE IDEAS ARE THEIRS. IF YOU REALLY HAVE TO DO SOMETHING FAST, JUST DON'T LET THEM KNOW: WHAT THEY DON'T KNOW, DOESN'T BOTHER THEM. FOR YEARS WE'VE BRAKED AND STABILIZED CARS AND, IN THEIR HOMES, TURNED LIGHTS ON AND OFF AND CONTROLLED THE ROOM TEMPERATURE—ALL WITHOUT LETTING PEOPLE KNOW. DISHWASHERS AND CLOTHES WASHERS TOOK OVER LONG AGO, WITH ONLY A SLIGHT PROTEST FROM PEOPLE. 🙌