HOW TO THINK SCIENTIFICALLY
ABOUT YOURSELF, OTHER PEOPLE, AND YOUR LIFE CONDITIONS

Albert Ellis*

HOW CAN YOU apply science to your relations with yourself, with others, and with the world around you?

Science is flexible and nondogmatic. It sticks to fact and to reality (which always can change) and to logical thinking (which does not contradict itself and hold two opposite views at the same time). But it also avoids rigid all-or-none and either/or thinking and sees that reality is often two-sided and includes contradictory events and characteristics.

Thus, in my relations with you, I am not a totally good person or a bad person but a person who sometimes treats you well and sometimes treats you badly. Instead of viewing world events in a rigid, absolute way, science assumes that such events, and especially human affairs, usually follow the laws of certainty.

The main rules of the scientific method are these:

1. We had better accept what is going in (WIGO) in the world as "reality," even when we don't like it and are trying to change it. We constantly observe and check "facts" to see whether they are still "true" or whether they have changed. We call our observing and checking reality the empirical method of science.

2. We state scientific laws, theories, and hypotheses in a logical, consistent way and avoid important, basic contradictions (as well as false or unrealistic "facts"). We can change these theories when they are not supported by facts and by logic.

3. Science is flexible and nonrigid. It is skeptical of all ideas that hold that anything is absolutely, unconditionally, or certainly true— that is, true under all conditions for all time. It willingly revises and changes its

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theories as new information arises.

4. Science does not uphold any theories or views which cannot be falsified in some manner. For example, the idea that invisible, all-powerful devils exist and cause all the evils in the world. It doesn't claim that the supernatural does not exist, but since there is no way of proving that superhuman beings do or do not exist, it does not include them in the realm of science. Our beliefs in supernatural things are important and can be scientifically investigated, and we can often find natural explanations for "supernatural" events. But it is unlikely that we can ever prove or disprove the "reality" of superhuman beings.

5. Science is skeptical that the universe includes "deservingness" and "undeservingness" and that it deifies people (and things) for their "good" acts or damns them for their "bad" behavior. It does not have any absolute, universal standard of "good" and "bad" behavior and assumes that if any group sees certain deeds as "good" it will tend to (but doesn't have to) reward these who act that way and will often (but not always) penalize those who act "badly."

6. In regard to human affairs and conduct, science again does not have any absolute rules, but once people establish a standard or goal—such as remaining alive and living happily in social groups—science can study what people are like, the conditions under which they live, and the ways in which they usually act; and it can to some extent judge whether they are meeting those goals and whether it might be wise to modify them or to establish other ways to achieve them. In regard to emotional health and happiness, once people decide their goals and standards (which is not easy for them to do!), science can often help them achieve these aims. But it gives no guarantees! Science can tell us how we probably— but not certainly— can have a good life.

If these are some of the main rules of the scientific method, how can you follow them and thereby help yourself be emotionally healthier and happier?

Answer: By taking your emotional upsets; and the irrational Beliefs (IBs) that you mainly use to create them, and by using the scientific method to rip them up.

To show you how you can do this, let us take some common irrational commands and show how you can scientifically examine them.

Irrational Belief: "Because I strongly prefer to do so, I must act competently."

Scientific Analysis:

_Is this belief realistic and factual?_ Obviously not. Because I am a human with some degree of choice, I don't have to act competently and can choose to act badly. Moreover, since I am fallible, even if I chose always to act competently, I clearly have no way of realistically doing so.

_Is this belief logical?_ No, because my fallibility contradicts the demand that I always must act competently. Also, it doesn't logically follow, from
my strong preference to do so, that I have to do so.

Is this belief flexible and unrigid? No, it says that under all conditions and in all ways, I must act competently. It is therefore an un flexible, rigid belief.

Can this belief be falsified? In one way, yes. Because I can prove that I do not have to behave competently at all times. But the belief that I must act competently implies that I am a supernatural god whose desire for competence must always be fulfilled and who has the power to fulfill it. There may be no way to fully falsify this godlike command, because even if I at times act incompetently, I can claim that I deliberately did so for some specific reason and that I can always, if I will to do so, act competently. I can also say, “God’s will be done!”—and that, as God, I don’t have to explain why I acted “incompetently.”

Does this belief prove deservingness? No, this again is an idea that cannot, except by fiat, be proven or disproven. I can legitimately hold that because I am intelligent and because I try hard, I will usually or probably act competently. But I cannot show that because of my intelligence, my hard work, my aliveness, my desire to succeed, or anything else, the universe undoubtedly owes me competence. That kind of obligation, deservingness, or necessity clearly doesn’t exist—or else, once again, I would always be competent.

Does this belief show that I will act well and get good, happy results by holding it? Definitely not. If I act competently all the time, I may actually get bad results—because many people may be jealous of me, hate me, and try to harm me for being so perfect. And if I rigidly believe that “because I strongly prefer to do so, I must act competently,” I will at times see that I do not act as well as I presumably must, and will therefore tend to hate myself and the world and make myself anxious and depressed. So this idea won’t work—unless I somehow manage to always act quite competently!

Irrational Belief: “I have to be approved by people whom I find important, and it’s awful and catastrophic if I am not!”

Scientific Analysis:

Is this belief realistic and factual? Clearly not, because there is no law of the universe that says that I have to be approved of by people whom I find important and there is a law of probability that says that many of the people I would prefer to approve of me definitely will not. It’s not awful or catastrophic when I am not approved of; because only uncomfortable (but hardly dreadful) things will happen to me when I am not approved of. When something is “awful” it is (a) exceptionally bad; (b) totally bad; or (c) more than bad. Being disapproved of by important people may not even be exceptionally but only moderately bad. It is certainly not totally bad—for it could always be worse. And it cannot be more than bad, or 101 percent bad. So this belief doesn’t by any means conform to reality.

Is this belief logical? No, for just because I find certain people important it does not follow that they must approve of me. And even if I find it highly inconvenient when important people do not approve of me, it doesn’t follow
that my life will be catastrophic or awful. Indeed, if someone I like does not quickly like me, I may actually gain: for this person might first like me and later frustrate or leave me.

Is this belief flexible and unrigid? Definitely not, because it holds that under all conditions and at all times people whom I find important absolutely have to approve of me. Quite inflexible!

Can this belief be falsified? Yes, because important people can disapprove of me and I can still find life desirable. But it also implies omniscience on my part, since I am commanding that people whom I find important must under all conditions approve of me; and even when they don't approve, I can view them as approving or contend that they really do approve, even when the facts show that they most probably don't. I can always claim that I am omniscient and that I know people's secret thoughts and feelings; and this kind of belief is unfalsifiable.

Does this prove deservingness? No, I cannot prove that even if I act nicely to important people that there is a rule of the universe that they ought to and have to approve of me. Deservingness is another unfalsifiable belief.

Does this belief show that I will act well and get good, happy results by holding it? On the contrary. No matter how hard I try to get people to approve of me, I can easily fail - and if I then think that they have to like me, I will most probably feel depressed. By holding the idea that at all times under all conditions people whom I find important must approve of me I will almost certainly fail to work effectively at getting their approval and also hate them, myself, and the world when they do not do what they supposedly must.

Irrational Belief: "People have to treat me considerately and fairly, and when they don't they are rotten individuals who deserve to be severely damned and punished."

Scientific Analysis:

Is this belief realistic and factual? No, it isn't. It commands that under all conditions and at all times other people have to treat me considerately and fairly. Obviously, they don't and the facts of life often prove that they won't. It is also not factual that they are rotten individuals - for such people would be rotten to the core, would never do good or neutral acts, and would be eternally doomed to act rottenly. No such totally rotten people seem to exist.

This belief also implies that people who treat me inconsiderately and unfairly always deserve to be severely punished and that somehow their damnation and punishment will be arranged. This is not what happens in reality.

Is this belief logical? No, because it implies that because people sometimes do treat me inconsiderately and unfairly, they are totally rotten individuals and always deserve to be punished. Even if I can indubitably prove that, by usual human standards some people treat me badly. I cannot prove that therefore they are totally rotten and therefore always deserve to be punished. Such conclusions do not follow from my empirical observations
that people treat me badly.

Is this belief flexible and unrigid? No, because it states and implies that in every single case all people who treat me inconsiderately and unfairly are totally rotten and invariably deserve to be severely damned and punished. No exceptions!

Can this belief be falsified? Part of it can be, because it holds that people who treat me badly and unjustly are totally rotten individuals and it can be shown they often do some good and neutral acts. My belief in deservingness and damnation, however, cannot be falsified, because even if no one else in the world upheld me and believed it to be true, I could always claim that all the other people in the world were sadly mistaken, that my view of punishment and damnation is unquestionably the right one, and that punishment for those who treat me unfairly should exist, even when it doesn't. When people who wrong me are, in fact, not severely punished, I can always contend that there are special reasons why they have not been penalized so far, and that they indubitably will be in the future or in some afterlife.

Does this belief system prove deservingness? No, even if people treat me inconsiderately and unfairly, and even when they sometimes are punished after they do so, I cannot prove (1) that they were punished because they treated me badly; (2) that some universal fate or being dooms them to this punishment; or (3) that hereafter they (and other people like them) will always be damned and doomed for treating me (and others) unjustly. I will even have trouble proving that their acts against me indubitably are bad — because in some respects they may be “good” and because some others may not view them as “bad.” The concept of deservingness for one’s “sins” implies that certain acts are unquestionably under all conditions “sinful.” And this is impossible to prove.

Does having this belief mean that I will act well and get good, happy results by holding it? Not at all! If I strongly believe that people have to treat me considerately and fairly, that they are rotten individuals when they don't, and that they then deserve to be severely damned and punished, I will very likely bring on several unfortunate results: (1) I will feel very angry and vindictive, and will consequently stir up my nervous system and my body in a way that will often prove harmful to me. (2) I will be obsessed with the people who I think have done me in, and will spend enormous amounts of time and energy thinking about them. (3) When I try to do something about people’s unfair acts, I will tend to be so enraged that I will fight with them in a frantic manner, and will often fail to convince them or stop them. Indeed, they are likely to see me as an overly enraged, and therefore unfair, person and to deliberately resist acknowledging their wrongdoing. They may even vindictively harm me further. (4) I will probably be unable to understand why people treat me “wrongly,” may unjustly or paranoidly accuse them of wrongs that they have not committed, and will often inter-
fere with my amicably and objectively discussing with them and perhaps arranging for suitable compromises.

If you resort to scientifically questioning and challenging your own irrational Beliefs, as shown in the above examples, you will tend to see that they are unrealistic, distinctly illogical, often inflexible and rigid, they cannot be falsified, and are based on false concepts of universal deservingness. If you continue to hold these unrealistic and illogical notions, you will frequently sabotage your own interests.

This kind of analysis and disputing of your irrational Beliefs is one of the main methods of Rational-Emotive therapy. If you continue to use it, you will take advantage of the most powerful antidote to human misery that has so far been invented: scientific thinking. Science will not absolutely guarantee that you can stubbornly refuse to make yourself miserable about anything. But it will greatly help!

Exercise

Whenever you feel seriously upset (anxious, depressed, enraged, self-hating, or self-pitying), or are foolishly behaving against your own basic interest (avoiding what you had better do or addicted to acts that you’d better not do), assume that you are thinking unscientifically. Look for these common ways in which you (and practically all your friends and relatives) deny the rules of science:

*Unrealistic thinking that denies the facts of life.* Examples:
"If I am nice to people, they will surely love me and treat me well."
"If I don’t pass this test, I’ll never get through school and will end up as a bum or a bag lady."

*Illogical and contradictory beliefs.* Examples:
"Because I strongly want you to love me, you have to do so."
"When I fail at a job interview, that proves that I’m hopeless and will never get a good job."
"People must treat me fairly even when I am unkind and unjust to them."

*Unprovable and unfalsifiable beliefs.* Examples:
"Because I have harmed others, I am doomed to roast in hell and suffer for eternity."
"I am a special person who will always come out on top no matter what I do."
"I have a magical ability to make people do what I want them to do."
"Because I strongly feel that you hate me, it is certain that you do."

*Beliefs in deservingness or undeservingness.* Examples:
"Because I am a good person, I deserve to succeed in life and fate will make sure that nice things will happen to me."
"Because I have not done as well as I could, I deserve to suffer and get nowhere in life."
Assumptions that your strong beliefs (and the feelings that go with them) will bring good results and lead to comfort and happiness. Examples:

"Because you treated me unfairly, as you should not have done, my making myself angry at you will make you treat me better and make me happier."

"If I thoroughly condemn myself for acting stupidly, that will make me act better in the future."

When you have discovered some of your unscientific beliefs with which you are creating emotional problems and making yourself act against your own interests, use the scientific method to challenge and dispute them. Ask yourself:

Is this belief realistic? Is it opposed to the facts of life?

Is this belief logical? Is it contradictory to itself or to my other beliefs?

Can I prove this belief? Can I falsify it? Is there any sense in my holding it if it is unfalsifiable?

Does this belief prove that the universe has a law of deservingness or undeservingness? If I act well, do I completely deserve a good life, and if I act badly, do I totally deserve a bad existence?

If I continue to strongly hold the belief (and to have the feelings and do the acts which it often creates), will I perform well, get the results I want to get, and lead a happier life? Or will holding it tend to make me less happy?

Persist at using the scientific method of questioning and challenging your irrational Beliefs until you begin to give them up, increase your effectiveness, and enjoy yourself more.
THE WATER PIK SHOWER

The Water Pik shower head is not just another kind of shower head that offers just another kind of shower. Water Piks try to emulate Jacuzzis and use water, in pulsating spurts, to exercise muscles and help generate good body tone. A shower is transformed into something more than a means of cleaning oneself, although this aspect of the experience is of considerable consequence.

We believe that water is connected to spiritual matters, a belief that may derive from the ritual of baptism. Water somehow helps rid us of sin and related phenomena such as dirt. But with the baptism (or its desacralized version, the bath), water is more passive. It dissolves things; it works slowly, perhaps even magically.

Mircea Eliade explains this in his book Patterns of Comparative Religion when he writes:

In water everything is "dissolved," every "form" is broken up, everything that has happened ceases to exist; nothing that was before remains after immersion in water... Immersion is the equivalent, at the human level, of death at the cosmic level, of the cataclysm (the Flood) which periodically dissolves the world into the primeval ocean. Breaking up all forms, doing away with the past, water possesses this power of purifying, of regenerating, of giving new birth (p. 194).

The genius of the Water Pik is to take this purifying ability found in water and intensify it, put it under pressure and make it even more powerful. If in our view of things we have somehow learned to associate dirt (which, as Freud pointed out, is only matter in the wrong place) with sinfulness and corruption, then what better way of dealing with it than blasting it off our bodies with powerful streams of water?

There are trade-offs to be considered when we compare the shower and

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the bath. The bath more closely approximates the baptismal experience in that there is an immersion in water. There is also the pleasure of a regression to our prenatal state, when we were surrounded by amniotic fluid and lived in a condition of purity, an approximation of paradise. By contrast, the bath water gets dirty and as we soak in it we are reminded of our “sinfulness” and corruption.

When we get out of the bath, we cannot escape a film of scum from this water, so that in a sense a bath is self-defeating. In addition, the ring around the bathtub serves to remind us of the fact of our dirtiness. Even if one is secular, this ring of dirt is unpleasant, a signifier of how dirty we were and will be, once again, later on.

How much better it is, then, to take a shower, especially one with a Water Pik, and blast the dirt off our bodies and wash it down the drain. We may not get the psychological gratification of the immersion but, instead, we get the feeling of supercleanliness and escape the reminder of our previous state.

In addition we get the benefit of exercise without effort. Technology has provided a means of our cleaning ourselves and exercising our bodies both at the same time, and with no effort. There is something remarkable here: We do nothing (except turn on the water and stand under the shower), and we emerge fully exercised. Or, perhaps, to be more accurate, massaged. We have replaced the masseur with a shower head.

Somehow, with this kind of shower, force leads to ease, power leads to relaxation—just the opposite of what we might expect. This may be because there are two kinds of pressure we experience: psychological or internal pressure (which generates anxiety and fatigue) and physical or external pressure (which generates relaxation and a sense of well-being). Physical exertion and pain yield pleasure and that health of body which is necessary (so we are told) for the healthy mind.

There may also be a masochistic element in the Water Pik. After all, a pick is a sharp, pointy instrument used to penetrate and break up things (as in ice pick or dirt pick). The name “Water Pik” is meant to suggest a shower that shoots jets of water that are like picks, except that they don’t penetrate the skin the way real picks do. Instead they function like pinpricks and stimulate the flow of blood as they massage the body. Here we are back to the Puritans and their notion that things that are unpleasant are good for you. There may be an element of pain connected with being “picked” by a powerful shower; but this pain leads, we are led to believe, to a higher physical and moral stage.

Once again we find that there is a sacred or spiritual dimension to a technological device—one that we may not be aware of but that we may sense in our subconscious mind. The feeling of well-being we get from a shower, which is magnified and intensified by the Water Pik, is connected to both physical and psychological matters.
In the book of Genesis we read, “Dust thou art, and unto dust shalt thou return.” We know this is true but feel that if we can take enough showers and wash the dust (dirt) down the drain, we can both keep this realization from our consciousness and, perhaps, prevent our returning to the dust for a bit longer. Water, Eliade has suggested, “nullifies the past,” and provides a sense of renewal and rebirth. And the Water Pik not only nullifies this past but blasts it to smithereens. It may not be the “fountain of life” that exists, we are told, in some magical place, but it is as close an approximation of it as we can find.