

F – Figuring out Feelings

Dear: In case you think that “figuring out feelings” is a “weird” concept, you’re in good company. As my wonderful daughter so frequently repeats: “Father, you’re weird!”

Maybe so, but even “weirder” is that, although I probably have the usual array of human feelings (although some may disagree!), I usually have substantial difficulty figuring out my feelings. That is, I usually have difficulty (or more accurately, my left brain has difficulty) first in describing and understanding my emotions and then in explaining them – even to me!

Such may seem weird to you, if you can easily “get in touch with your feelings”, but many times my left brain doesn’t even recognize that my decisions are based, for example, on anger. Consequently, after I’ve made, e.g., a quick comment or decision, and then have some quiet time to think, I’m frequently perplexed by: “Why did I say that?” or “Why did I do that?”

All of which is my way of introducing the statement that, this chapter has been difficult to write. More significantly, probably it’ll be difficult for you to read. It’s difficult to write about what you don’t understand, and it’s difficult to read what someone can’t explain, even to himself! But I’ll push on – with the hope that, for this chapter, you’ll allot me even more-than-normal patience. What I want to try to show you is what I’ve learned that has helped me recognize and understand my emotions. If sometimes you, too, have difficulty figuring out your feelings, then maybe what I’ve learned will also help you, e.g., in your “decision-making process”, when you try to evaluate your enjoyments and figure out your feelings.

Of course, enjoyments are also feelings. Consequently, you might ask: “What’s the difference between ‘evaluating enjoyments’ and ‘figuring out feelings’?” I’m not certain of the “correct” answer to that question. To me, it’s a “difference in intensity”, with enjoyments being weak, pleasant feelings. Apparently, my dictionary agrees, for it states that a synonym for ‘enjoyable’ is ‘pleasant’. For example, I enjoy sunrises, the song of the meadowlark, and thinking that this book might help others. In contrast, ‘feelings’ are more general, not only (on an “emotional scale”) extending in one direction far beyond ‘enjoyment’, e.g., to ‘ecstasy’, but also spanning in “the opposite direction” from ‘insignificant’ to ‘excruciating’ pain.

And if you think that, with the above paragraph, I seem to be stumbling to find the right words, then you'd be starting to see what I meant that I've had difficulty writing this chapter. In turn, my difficulty follows because I still have a lot of trouble "understanding" (and "expressing") my feelings – in words! In fact, I'm not even sure what I mean by "understanding" or "figuring out" my feelings. What I "think" I mean is to have Left Brain do an analysis to try to put Right Brain's (and Body's?) syntheses (i.e., the feelings) into words. But already that concept bothers "me". Right Brain (and Body?) has performed a (usually) valuable summary (or synthesis). Why should Left Brain then try to "pick it apart", labeling everything with damnable words?!

"TOO MANY WORDS!"

Which reminds me of an astounding line from a certain grandchild, when she was about six. I was sitting on the back porch, trying to explain something to you, of course using a lot of words, and I can still see you standing in front of me, with hands on your hips, palms turned backwards, boldly and defiantly objecting: "There's too many words!"

Yes, Dear, sometimes there are too many words. For example, in an attempt to help me write this chapter, I pulled out my old copy of Roget's 200-year-old Thesaurus¹ to see how the original author organized words dealing with emotions (or, as he called them, "affections"). In my copy of his book, the scheme is shown on pages xxxix to xlii, and the words are listed and described on pages 304–386: 82 pages of words just identifying different feelings! Here, let me review just enough of his scheme so that you may see why I agree with a certain grandchild: "Too many words!"

Grandfather Roget first divided his "class of words" labeled as 'affections' into five sections: *general, personal, sympathetic, moral, and religious*. Here, I'll focus just on the two sections: *personal* (which seems self explanatory and includes such feelings as 'pleasure' and 'pain') and *sympathetic* (by which he apparently meant emotions involved with

¹ Dear, this is an astounding book, a copy of which I expect is on your Dad's bookshelf. I think that "Roget" is pronounced as in the French [Raw-shay], and "Thesaurus" [the Greek word for "treasure"] is pronounced as if it were written "the-sore-es", with emphasis on "sore". The book is a family enterprise, started by the grandfather in 1805, completed after he retired at 70, then revised by his son (who added a tremendous way to find synonyms and antonyms), and my copy was improved still more by the grandson.

interactions with others, e.g., ‘love’ and ‘hate’). Then, within each section, he has four or five subsections, and then finally, he lists the words. For example, here’s a part of the scheme he used to organize such words:

Class VI. AFFECTIONS

I. AFFECTIONS GENERALLY

Affections	
Feelings	
Sensibility	Insensibility
Excitation	
Excitability	Inexcitability

II. PERSONAL

1. PASSIVE

Pleasure	Pain
Pleasureableness	Painfulness
Content	Discontent
	Regret
Relief	Aggravation
Cheerfulness	Dejection
Rejoicing	Lamentation
Amusement	Weariness
Wit	Dullness
Humorist	

2. DISCRIMINATIVE

Beauty	Ugliness
Ornament	Blemish
	Simplicity
Taste	Vulgarity
Fashion	
	Ridiculousness
	Fop
	Affectation
	Ridicule
	Laughing-stock

3. PROSPECTIVE

Hope	Hopelessness
	Fear
Courage	Cowardice
Rashness	Caution
Desire	Indifference
	Dislike
	Fastidiousness
	Satiety

4. CONTEMPLATIVE

Wonder	Expectance
Prodigy	

5. EXTRINSIC

Repute	Disrepute
Nobility	Commonality

Title	
Pride	Humility
Vanity	Modesty
Ostentation	
Celebration	
Boasting	
Insolence	Servility
Blusterer	

III. SYMPATHETIC

1. SOCIAL

Friendship	Enmity
Friend	Enemy
Sociality	Seclusion
Courtesy	Discourteous
Congratulation	
Love	Hate
Favorite	
	Resentment
	Irascibility
	Sullenness
Endearment	
Marriage	Celibacy
	Divorce

2. DIFFUSIVE

Benevolence	Malevolence
	Malediction
	Threat
Philanthropy	Misanthropy
Benefactor	Evil doer
Pity	Pitilessness

3. SPECIAL

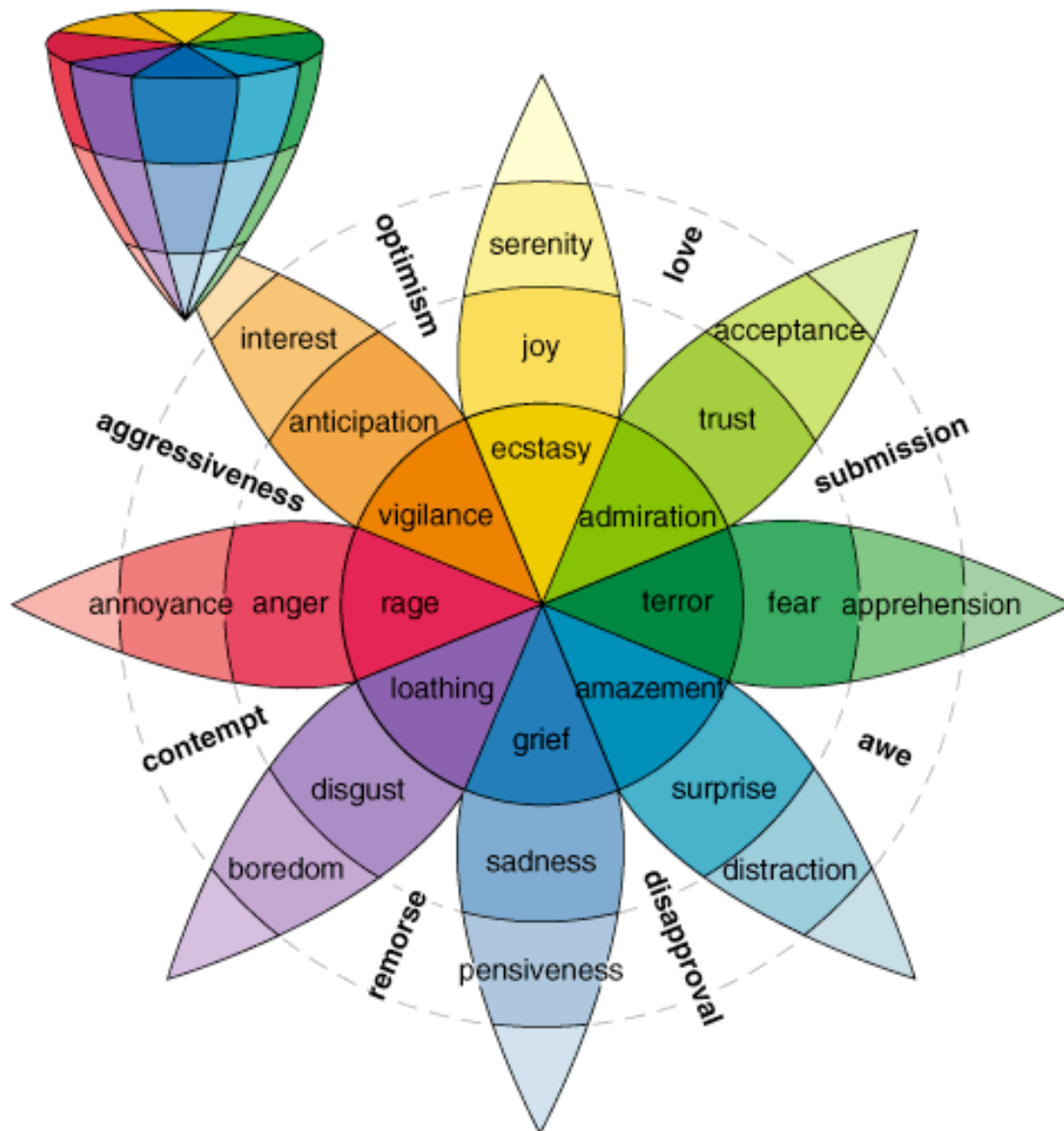
Pity	Pitilessness
Condolence	

4. RETROSPECTIVE

Gratitude	Ingratitude
Forgiveness	Revenge
	Jealousy
	Envy

Did I hear somebody say “Too many words!”? Dear, the above doesn’t even start to list the words: the above is only the scheme that grandfather Roget used to organize the thousands (?) of words (and expressions) that he proceeded to list in the 82 pages from p.304–386! Yet, although I think Roget’s scheme is amazing (and invite you to think about how he decided to organize the words, e.g., his ‘passiveness’ of ‘pleasure’ vs. his ‘discrimination’ of ‘beauty’), I’ve found that such “left-brain words” for labeling emotions don’t help much when “I” try to figure out my feelings.

For me, more helpful are pictures, plots, graphs, and schematics, such as Plutchik's:²



A lot of information is compacted into the above schematic, and if you haven't seen it before, you might want to study it for a few minutes. Plutchik's own legend for his figure is the following:

Author's three-dimensional circumplex model describes the relations among emotion concepts, which are analogous to the colors on a color wheel. The cone's vertical

² From <http://americanscientist.org/articles/01articles/plutchikcap6.html>, in turn from the article "The Nature of Emotions" by Robert Plutchik, published in the July-August 2001 issue of *American Scientist*.

dimension represents intensity, and the circle represents degrees of similarity among the emotions. The eight sectors are designed to indicate that there are eight primary emotion dimensions defined by the theory arranged as four pairs of opposites. In the exploded model the emotions in the blank spaces are the primary dyads – emotions that are mixtures of two of the primary emotions.

To follow what he's saying, notice, first, that Plutchik proposes "eight primary emotion dimensions", which he identifies as: joy, trust, fear, surprise, sadness, disgust, anger, and anticipation. Have a look at his chart to see where he positioned each one of these emotions, starting with 'joy' (pointing North on the "compass"). Also, notice that, consistent with the "complementarity of opposites", e.g., 'sadness' points South.

For each of the "primary emotions", notice that Plutchik then adds words to signify intensity of the emotion, e.g., again for the case of 'joy', he has the more intense joy, 'ecstasy', and the less intense joy, 'serenity'. Similarly for all the other primary emotion, at "all eight points on the compass". This intensity is what he depicts with the picture of the cone at the top left, i.e., the "exploded view" (with all the words) is a "plan view", looking down at the cone, and "the cone's vertical dimension represents intensity."

Next, and perhaps more surprising to you, notice that he doesn't consider 'love', 'submission', 'awe', etc. (starting at the North and going clockwise around the compass) to be primary emotions! He considers them to be "the primary dyads – emotions that are mixtures of two of the primary emotions." If so, I admit to wondering about higher-order "mixtures" [triads, quadrics (?)...] and if names for them are included in Roget's huge list. As for how Plutchik decides what emotions were primary vs. dyads, consider the following quotation:³

Plutchik's (1980) psychoevolutionary theory of basic emotions has ten postulates.

1. The concept of emotion is applicable to all evolutionary levels and applies to animals as well as to humans.
2. Emotions have an evolutionary history and have evolved various forms of expression in different species.
3. Emotions served an adaptive role in helping organisms deal with key survival issues posed by the environment.
4. Despite different forms of expression of emotions in different species, there are certain common elements, or prototype patterns, that can be identified.
5. There is a small number of basic, primary, or prototype emotions.

³ From <http://www.personalityresearch.org/basicemotions/plutchik.html>, a website maintained by G. Scott Acton.

6. All other emotions are mixed or derivative states; that is, they occur as combinations, mixtures, or compounds of the primary emotions.
7. Primary emotions are hypothetical constructs or idealized states whose properties and characteristics can only be inferred from various kinds of evidence.
8. Primary emotions can be conceptualized in terms of pairs of polar opposites.
9. All emotions vary in their degree of similarity to one another.
10. Each emotion can exist in varying degrees of intensity or levels of arousal.

Those “ten postulates” seem reasonable enough, but I admit that I continue to be surprised that ‘love’ isn’t identified as a primary emotion – along with its “polar opposite”, ‘hate’. For example, surely a lioness’ love for her cub isn’t a mixture of her ‘joy’ and ‘trust’ but a primary instinct.

And sure enough, if one searches further, one finds that other researchers have chosen different “basic emotions”, e.g., even the same website quoted above shows that Arnold chose the following eleven basic emotions: anger, aversion, courage, dejection, desire, despair, fear, hate, hope, love, and sadness, whereas Izard drops some of those and chooses ten basic emotions, including (I think importantly) guilt and shame. My (novice) conclusions are that, although it’s not yet clear what the basic emotions are, Plutchik’s scheme (and other similar schemes) is nonetheless useful for organizing emotions.⁴

MEASURING AND MODELING E-MOTIONS

Still another way to try to dig deeper into understanding emotions (besides with words and schematics) is to obtain substantially more data and to model the data mathematically. In an “Endnote” for this chapter, I try to explain what I mean. I put it there, so you can more easily skip it; maybe return to it when

⁴ If the subject of emotions interests you, Dear, you might want to read two relatively recent books on the subject. I’ve read only reviews of these books. One is *Friday’s Footprint: How Society Shapes the Human Mind* by Leslie Brothers (Oxford University Press, 1997); in the review that I read (by Ray Dolan, in the 1 Jan. 1998 issue of *Nature*, p. 35), what interests me about the book is the reviewer’s comment: “[What is distinct about emotions is their associated action tendencies.](#)” The other recent book is *What Emotions Really Are: The Problem of Psychological Categories* by Paul E. Griffiths, University of Chicago Press, 1997; the same review describes Griffiths’ proposal that “[the general category of emotion should be replaced by, at a minimum, two distinct concepts. One... corresponding roughly to vernacular concepts of surprise, anger, fear, sadness, joy, and disgust... \[all\] automatic response patterns... \[The\] second... higher cognitive emotions, which account for emotions such as envy and shame... characterized by their ability to access beliefs and desires.](#)” And beyond these tidbits of insight, what might interest you is this: these two books seem to provide a fairly good indication of current knowledge about feelings and emotions (at least, it was “current” when I wrote this, in 1998!) – and clearly, that knowledge is extremely meager. If you want to learn more, Dear, you may want to search on the internet, starting with “search words” such as “measuring emotional states” and “interpreting emotions of others”; I think that you’ll find that it’s an amazingly complicated subject-area, sorely in need of more and better data. And if you want to learn still more, Dear, then maybe you want to become a psychologist or psychiatrist!

you begin planning your second book on Mathematical Psychology! Actually, though, I hope that you'll at least glance at the Endnote, because I introduce some simple ideas about tensors, which I'll briefly use in later chapters.

If you read the Endnote, perhaps all you'll get from it is: not only are there "Too many words!", there are "Too many numbers!" My summary is that it may be useful and appropriate to recognize our emotions as a second-order tensor in an "n-dimensional psyche space". Further, we seem to be capable of modifying our "emotion tensor" by operating on it with our (fourth-order tensor) "personality tensor". But, I know, I know: "enough already!"

So, Dear, what I'd like to do, next, is get closer to what I review with 'F' when I'm walking. As already mentioned, I usually have difficulty figuring out my feelings. Perhaps the reason is the burden that our society places on men (although some of it may be natural). Thus, especially when I was a kid, it was "manly" not to show emotions; now, maybe that's changed some. Common taunts from other kids were "Nah, nah, cry baby" and "Crying like a little girl" (both of which were conveyed with the same "lilt", as if part of a nursery song). Even elders would solemnly advise: "Big boys don't cry" and "Girls are the emotional ones."

Maybe such "societal pressure" on boys (and on girls) at least partially explains why women seem to be "more in touch with their feelings" than are men, but maybe most of it is natural. On this "nature *versus* nurture" question, I have insufficient data to reach a defensible conclusion – and, in truth, I don't find the question sufficiently interesting to seek more data, then formulate a hypothesis, deduce predictions, and then test the predictions!

But I do have adequate data to defend the hypothesis that I have difficulty figuring out my feelings. The first major difficulty is "simply" to recognize that I have a particular feeling! That may seem silly to you, Dear, but sometimes I don't seem to realize that what's "driving me", at a particular instant, is my anger or frustration or fear or... And even when I do realize that I'm, say, angry, then many times I don't understand what's causing my anger. Without such knowledge, it's common that I react inappropriately, as in the old adage about kicking the dog instead of confronting the boss.

Further, when trying to figure out my feelings, I frequently encounter another major problem: my emotions rarely seem "clean" – I rarely find that a single word adequately describes them. For example, I might have a

feeling that seems to be a complicated mixture of pain, fear, resentment, and revenge! Moreover, I find that the strength of each feeling can be highly variable: at times I've had feelings of hopelessness so powerful that I've considered suicide, while at other times, I've laughed so uncontrollably that it really was painful! That is, I commonly find that my emotions are not only a mixture of many feelings, but the intensities of each feeling seem to be separate (even, independent) variables.

And not only do my emotions seem mixed up (intertwined and tangled), many times they seem to keep moving on me: as soon as I think I understand them, they shift on me! In some cases, "I" totally can't comprehend my emotions, especially those emotions that I've hinted may be from "Body" (which maybe means instinctive), especially those dealing with sex (which, I'm sorry, I don't feel [!] comfortable describing to you). If you think that, in total, this seems to be quiet a mess, Dear, I would agree. But I've found that the following ideas have helped "me" (Left Brain) to understand "my" (Right Brain and Body?) feelings.

One idea was the realization that essentially all my feelings are *survival signals, warning me of dangers and rewarding me for successes*. With that realization (i.e., that left-brain analysis), I can then skip trying to label a feeling (or a mixture of feelings) with one or more words (e.g., from Roget's or Plutchik's schemes). Instead, I proceed directly to trying to understand what the feeling is saying about my trio of survival goals (i.e., about my own survival, the survival of my extended family, and the survival of my values).

I've found that this works for essentially all my feelings, save perhaps for what Roget calls "discriminative emotions", e.g., the feeling that something is "beautiful". But, by describing a feeling as 'discriminative', maybe Roget is acknowledging that Left Brain is involved with its analysis – and, too, maybe there's a large cultural component to this feeling. Maybe this cultural component explains, for example, why people from different cultures seem to enjoy such dramatically different music.

In any event, I've found that trying to understand the significance of some feeling to my trio of survival goals has helped me "figure out my feelings". Additional help came from the realization that my feelings are *commonly a mixture and can be measured using an "e-motion" scale*. What I mean by an e-motion scale is something like this: sometimes it seems that we need a scale (similar to the Richter scale, used to measure earthquake strengths) to

measure the strengths of each “feeling” in the mixture, as well as the overall strength of the emotion. That’s my e-motion scale – which I trust that you’ll pronounce as ‘emotion’, but with emphasis on the (hard) ‘e’!

For example, Dear, at this instant my overall e-motion scale, recording my feelings about writing this chapter, reads 3.5 (on a scale running from –10 to +10). It’s composed of 4.4 from my hope that what I’m writing will help you carry our genetic code farther, 3.3 from my hope that it might also help others, 2.2 from the satisfaction that not only does this writing conform to my values but it even promotes them, 1.1 from the relief that I’m finally slugging my way through all this “junk”, –7.7 from the pain of writing it, and 0.2 from my delight in this (silly little) e-motion scale – and my expectation that you realize that, at least in part, I’m just “fooling around”!

But actually, Dear, I’m not totally fooling around. One way to evaluate feelings is to use numbers, such as with my e-motion scale. That is, according to my dictionary, one definition for ‘evaluate’ is “to find the numerical value of; express in numbers”. You might have already done this on some occasion, only partly in jest. For example, you might have said that, “on a scale running from –10 to +10”, your “affection” for such-and-such (or so-and-so) was +9.3 (i.e., you loved it), whereas your affection for something else was –9.8 (i.e., you loathed it). Yet, Dear, if ever you do evaluate your emotions with a single number, then you know that you’re engaging in a gross oversimplification.

A similar oversimplification is to “evaluate” a person’s IQ (Intelligence Quotient) or even a person’s “Emotional IQ”, with a single number. A more realistic “measure” of a person’s intelligence, for example, needs the evaluation of a huge number of components: not only how many words a person knows but also how skillfully the person can convey ideas using words, not only how well a person can solve math problems but also how well a person can solve personal problems, and so on, covering a huge list of components that deal with mechanical abilities, spatial visualization, art, music, etc., etc., including “emotional intelligence”! Therefore, Dear, when in the previous chapter I mentioned that Maslow’s IQ was 195, I hope not only that you weren’t overly impressed but also that you now realize I must have been kidding! Similarly, don’t take my e-motion scale too seriously, because undoubtedly it’s a gross over-simplification.

SURVIVAL FEELINGS

Nonetheless, my e-motion scale has features that I find useful. One such feature is that, using it, I've again noticed that most of my feelings are "just" survival signals – as you can check by noticing that essentially all my "current feelings" (listed a few paragraphs ago, associated with writing this book) are "just" survival signals. Another realization is that, I've found that my "most moving" emotions, on my e-motion scale, generally seem to be instinctive (i.e., "Body talk") – by which I mean that sometimes I've had enormous emotions, which I really don't understand and wonder if they're derived from "Body" (Instinct?). I'm sorry that I don't "feel" comfortable giving you details. To give you a hint of what I mean, I'll provide the barest sketch of an example.

Once, when your father was a teenager and caused your grandmother and me enormous difficulties, difficulties that overwhelmed me, "Instinct" (or "l'autre moi" or "Body" or whatever "it" should be called) showed "me" (my left brain) a possible way to save your father. I don't plan to describe any more of this to you, but I do want to add that later "I" (Left Brain) saw that, although my emotion was incredibly powerful, I was grievously wrong to be guided by it. If I could live that part of my life over, then next time, I'd know that the better choice would be to accept the possibility that your father would die: it was a case where running the system (me) on autopilot (Body or Instinct) was a serious mistake; the pilot (Left Brain) should have overridden the autopilot and regained control. In other words, as I tried to explain to you in **B** and **C**, sometimes – no matter the strength of Right Brain's emotions or Body's instincts – Left Brain should take control and force the abandonment not only of one's own survival but also the survival of one's genetic code, to "preserve, protect, and defend" one's values.

But that's enough (more than enough?!) introduction to my "twisted tale of tangled feelings". Now, I want to turn to what I review with 'F' when I'm walking. Yet, before I showing you details, I probably should try to clarify something. I expect that I've left you with the impression that I start out on my daily walk in the desert with 'A', and then proceed calmly and enjoyably through to 'Z'. In reality, that almost never happens, especially before I retired and was involved in the daily challenges of my job. (Well, I should say that better: usually I "enjoyed" the scientific "challenges" of the job; it was the damn "politics" of my job that "drove me to distraction"). Frequently it would take me half my walk (going out), just to "unwind":

addressing current problems, examining available options, evaluating the potential actions of others, etc., etc. Sometimes, clearing this “clutter” was (and sometimes still is) no simple task, and during this task, various “feelings” would enter.

For example, Dear, frequently I’ve been angry. One of the most common causes of my anger is when I am “forced” to deal with stupidity (a characteristic of essentially every bureaucracy: “designed for the general case – whereas special cases are all that ever occur”). So, in my search to figure out my feelings, I would ask: why am I angry at this stupidity? The answer would depend on details of its source.

If I’m angry because some person has behaved irrationally, I commonly perceive it as a threat (to my survival and/or the survival of my family and/or the survival of my values). Similarly, if I’m angry with some bureaucracy, I again find that my anger is derived from my perception that its stupidity is somehow threatening my trio of survival goals, by wasting my time, constraining my actions, or similar. Admittedly, sometimes I’m angry at my own stupidity – but then commonly try to console myself, trying to understand why I did what I did (examining both how I felt at the time and historical reasons for why I felt that way) and trying to see how I could use this experience to act more wisely in a similar situation in the future.

Actually, when I developed my “meditation” I was in the midst of some of the most difficult times of my life, not only associated with my trying to save your father, but also, first from fighting with the “tyrant Dean” (mentioned in the previous chapter) and then from fighting off attacks from “the traitor” (also mentioned in the previous chapter) who was making my life hell – until I encountered the idea “the best revenge is to live well”. During that period of my life, when so frequently I was angry, I reviewed the following as a part of ‘F’; it deals with “fencing off foes”; these days, I normally don’t remember it (but sometime it just pops back into my mind):

Faced with foes, fence them off: the fools, cowards, liars, thieves; the lazy, the crazy, the ingrates, the traitors, and the power mongers. Faced with fools, avoid anger, don’t fight the feeble, don’t flee from fanatics, fence them off, protect your family.

I’m sorry to report that I wrote another “poem” associated with this part of ‘F’, but I’ll skip showing it to you. The main thought in the poem (and in the above) is that to claim one’s life, sometimes it’s necessary to “fence off”

some horrible people from your life. And of course I realize that fences both keep some people out and others in (recall the connectedness of opposites); yet, Dear, there are some people in this world that you just must keep your distance from: in one way or another they can enfeeble you.

FENCING OFF FOES

Now, Dear, I doubt if there's much value to you in my describing details about the people I decided to "fence off", but maybe I can make some generalizations that might be useful to you. Yet, I want to leave some of these generalizations until later chapters (for example, in **P**, dealing with Power Mongers), which in turn, I'll delay until after I've shown you some features of desirable interactions among people (e.g., in **M**, dealing with Morality). In this chapter, therefore, what I'd like to do is comment just on some general ideas about "fencing off" certain people, as well as some characteristics of such people.

First, "fencing". As I'm sure you know, a common feeling or instinctive reaction of humans (as well as other animals) to many stresses is either "fight or flight". In many cases, such instincts serve us well: if someone attacks you with a knife, then your instincts will tell you to either fight or flee. In other instances, however, neither fight nor flight may be appropriate – especially in modern societies, when (many times) neither is a "socially acceptable" option. The consequences to you can be severe, physical and mental, chemically-induced stress (which, by the way, can be relieved by meditation, i.e., *via* Zen). In other cases, when you have time to think and time to react differently, you may find that it's best to "fence off" certain people – which also can entail substantial stress.

For example, consider "fools". No doubt you've already encountered foolish people, and I trust that your reaction has been similar to my normal reaction: to treat them with kindness, try to help them, but make sure that their foolishness won't cause me excessive difficulty. But there are cases I've experienced (and undoubtedly, you will also experience) when, for one's own safety, there is no reasonable alternative but to "fence off" some fools.

Some characteristics of such fools are not only that they make absurd errors in reasoning (for example, judging people by the color of their skin), but they absolutely refuse to be guided by data (on, for example, correlation

* Go to other chapters *via*

between accomplishments of people and the color of their skin). There are many other examples of such fools, who might more accurately be described as fanatics (such as the fascists and many religious fanatics), but I'll delay describing them until later chapters. For now, let me try just to give you some general guidance for how to deal with such people.

First, Dear, please realize that, in general, ideas are cheap: “a dime a dozen”, “a penny a pound”, “a token a ton”, or even cheaper! For those fools who present only ideas, if they provide no data to support their ideas, then I strongly recommend that you dismiss both the ideas and their advocates. When you encounter such people (whom you can't influence by showing them either errors in their reasoning or data that conflict with their opinions), then give up on them: distance yourself from them; for your own safety, fence them off from your life.

More generally, Dear, please never “buy into” the fallacy that “all ideas deserve to be heard”. At most, what all ideas deserve is to be tested against data – but you won't have time to perform the needed tests of all ideas promoted by other people. If people want you to listen to their ideas, then it's their job to provide details of both the data and the tests that support their ideas. On the other hand, Dear, I do strongly recommend that you consider all relevant ideas that have supporting data: you're far too young to reject ideas because of your prejudices; I hope that even I'm too young for that!

But enough about fools (at least for now); next, consider cowards. I'm certain, Dear, that at times, everyone is afraid, and I suspect that everyone is cowardly in the face of certain fears. In most cases when we encounter cowards, we again behave kindly and “make allowances” for their behavior, for example, “It's understandable: she doesn't want to come, because she doesn't know how to swim” or “No, he won't join, because he's afraid of being fired.” On the other hand, Dear, I have experienced cases (and you will probably experience cases) when, for your own safety, you should “fence off” some cowards: their failure to face their fears can endanger you. For example, if an acquaintance of yours is too afraid of losing friends to say “No!” to drugs or “No!” to excessive alcohol, then distance yourself from this acquaintance: his or her cowardice could cause you great harm.

Similarly with liars. On the one hand, I'm certain that all of us lie. Sometimes we lie to make another person feel better (saying, for example, that the other person “looks great”); other times, we lie to protect ourselves

* Go to other chapters *via*

(saying, for example, that we weren't bothered by something that someone said). But on the other hand, Dear, I have encountered people (and if you haven't already, then you probably soon will) who lie so frequently that they can no longer be trusted – you won't be able to trust even that they're lying! Why they lie so frequently, I don't know; perhaps some experience in childhood taught them to avoid confrontations at any cost. Whatever the causes of their lying, Dear, if ever you identify such people, then fence them off from your life: they can't be trusted; therefore, your involvement with them could endanger you.

Then, there's a huge variety of thieves and a huge range of thievery, even when this range is restricted to exclude cases in which the thief ends up in jail. On the "mild side" of this restricted range are, for example, those people who "steal a little lime-light" from the accomplishments of others; you might have experienced such people who gladly shared some praise for work that you did essentially by yourself. And on the more severe side of this restricted range are those thieves (such as I've encountered, even in science) who literally steal your ideas, the results of your work, and (through a number of tricks) even steal your research contracts. At this severe extreme, such people belong in jail, but it's essentially impossible to prosecute them; therefore, Dear, should you ever encounter such thieves, then by yourself, you'll need to do the next best thing to putting them in jail: fence them off from your life.

And so on, for the others in my list: the lazy, crazy, ingrates, traitors, and power mongers. But enough of that for now, except, maybe I should mention at least one point about "power mongers". In particular, I'm not unmindful of the possibility that I'm one of the people that you might decide that you should "fence off", for it may seem that I seek to influence your life too much, as if to seek power over you. In case you feel that way, I'd like to mention two thoughts. One thought is that, although there's no doubt that you're you, you're also me, going on! So, while you take these genes forward, I'm trying to provide you with some advice for how you should live "our" future life! And second, Dear, is this: although I'm trying to show you some of what I've learned about life, in hopes of helping you to have a better life, I do so only to show you another way from the "religious way" in which you have been indoctrinated.

FEELINGS DURING FAIRER TIMES

But the above was what I reviewed for ‘F’ when I was “in the thick of things”, seemingly finding foes whichever way I turned. After about five years, after I got out from under first the tyrant and then the traitor, and after your father seemed to get back on track, ‘F’ changed. Although I still “feel” as strong a desire as ever to be free (a subject that I’ll get to, later in this chapter), I no longer feel that my freedoms are being attacked so forcefully. Consequently, now when I’m walking, I usually try to “figure out my feelings” with the following.

F: Feelings:

- *There are threats to my survival, and signals telling me that I am surviving;*
- *Exhilaration when I succeed and despondency when I fail;*
- *Constraints on my freedom and relaxation of those constraints;*
- *Frustrations at ingratitude and furiousness at stupidity;*
- *There’s joy in living and somberness of thoughts of dying. But: “Death, you’ll find, you’ll never know” – you can’t be aware of a lack of awareness.*

When I’m walking, if I’m “in the mood”, I then try to understand what I’m feeling at the moment and why.

Now, you might “feel” that the above list of my “feelings” is rather pathetic. You might think that, if you made a list of your feelings, your list would continue for pages. So, now I feel defensive and will try to explain – not why my list is so short, but why it’s so long! That is, Dear, I’ve made long lists of my feelings, but then I saw (as I already mentioned) that “most feelings are survival signals, warning me of dangers and rewarding me for successes; usually they’re a mixture – and most-moving may be instinctive.” That is, as I review, *There are threats to my survival, and signals telling me that I am surviving...* and this single summary obviates most of the remainder of what I review!

In particular, I know that most of the feelings that I review, namely *exhilaration when I succeed and despondency when I fail; constraints on my freedom and relaxation of those constraints; frustration at ingratitude and my furiousness at stupidity; there’s joy in living and somberness of thoughts of dying...* are just “survival signals”. Therefore, if I sought succinctness, I wouldn’t review them separately. For example, I could omit recalling feelings related to “constraints on my freedom and relaxation of those constraints”, because “I” know that I “feel” more capable of promoting my

trio of survival goals when I'm free. Yet, I've found that separately identifying such feelings is useful, since they seem to be so common for me.

But enough of my feeling defensive about what I review when I'm walking; now, I "feel obliged" to try to explain a feeling (another defensive feeling!) related to what I plan to write for the remainder of this chapter. In particular, for the remainder of this chapter, I plan to skip explaining *There's my joy in living...* not because I consider it unimportant, but because I consider it so important that it'll be the central topic of the next chapter. For the current chapter, in addition, I plan to address only a part of what I mean by *Death, you'll find, you'll never know...* again not because I consider it unimportant, but because (as I'll eventually try to show you), it's an idea missed by all religions, and therefore, it's a central concept of this entire book, a concept that I won't finish addressing until the final chapter!

Stated differently, the above are two more examples of what I tried to explain earlier: in an attempt to present ideas to you in a more coherent fashion, on occasion I plan to break free of the "alphabetical straight-jacket" that I use only as a mnemonic device when I'm walking (where, as you may know, a 'mnemonic' is any mental technique for making information easier to remember). And if that still doesn't make much sense to you, don't worry about it: let your old grandfather do what he feels he must in an attempt to defeat all the technical dragons and monsters he imagines are trying to drown or devour him; meanwhile, you just "go with the flow."

In the remainder of this chapter, I want to convey some general ideas about two feelings that I've found are especially powerful for me, namely, fear and freedom. I'll try to relate these ideas to at least a part of what I review when I'm walking, that is, *there are constraints on my freedom and relaxation of those constraints* and "*Death, you'll find, you'll never know*" – *you can't be aware of a lack of awareness.*

In fact, Dear, the last line of what I review (including *Death, you'll find, you'll never know*) really isn't a feeling but an analysis, the quoted part of which comes from another one of my "versifications" – which I'll show you in a later chapter (even though it's "bad" – but it would seem even worse if I showed it to you before explaining some of the ideas it contains). After trying to convey some of these general ideas to you, I want to focus on the key idea of the need to face our fears to gain our freedom. To start, I want to provide a few comments about the much-overused word 'freedom'.

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FREEDOM!

I say that ‘freedom’ is a “much-overused word”, because it’s a word that people “bandy about”, seemingly not understanding what it means. As I’ll show you in a later chapter (L), ‘love’ is another such word. The ambiguity of such words – derived from the complexities of the associated feelings – provides wonderful (or better, “horrible”) ammunition for hucksters of the world, who can then “con” people to join them (of course, with the hucksters in control!) as “freedom fighters” or “true believers” or similar.

As with the word ‘love’, the word ‘freedom’, alone, is so general that it’s essentially meaningless. For example, a lonely beggar on the street might claim that he’s found “freedom” if the billionaire Bill Gates gave him a million dollars. Bill Gates would probably claim he had found “freedom” if he could have the beggar’s solitude! Shucks, if he gave away all his money, Gates might then even start singing Bobby McGee’s lyrics: “Freedom’s just another word for ‘nothing left to lose’.”

In any event, Dear, maybe you see that ‘freedom’ is one of those “dangling words” that’s essentially meaningless without more explanation. In particular, both the noun ‘freedom’ and the equally ambiguous verb ‘free’ (from which the noun ‘freedom’ is derived) should be used only as adverbs to modify such verbs as: think, speak, fear, want, and so on, as in freedom to think, freedom of speech, freedom from fear, freedom from want, etc.

To see more, consider the following analysis by the psychologist Erich Fromm (from his 1959 book *Freedom in the Work Situation*):

Freedom means many things to many people. Do we mean by freedom, a freedom from – freedom from drudgery, from monotony, from the stupidity of manual work, freedom from the irrational authority of a boss or foreman, freedom from exploitation? Or, on the other hand, do we mean a freedom to – freedom to participate actively in the work process or freedom to enjoy work? Actually our concept of freedom today is essentially a negative one. It is freedom from and not freedom to, because we are mostly concerned with what we are against and not what we are for – against whom we should defend ourselves rather than what we are living for.

Alternatively, rather than use the phrases “freedom from” and “freedom to”, one can use the words ‘security’ and ‘liberty’, respectively.

Also, notice that some freedoms conflict, as illustrated powerfully and perceptively by Robert Ingersoll (1833–1899):

I am not so much for the freedom of religion as I am for the religion of freedom.

But such complexities understood, Dear, for what follows, please permit me to use the words ‘free’ and ‘freedom’ – as abbreviations for what I really mean! For example, when I remind myself of the “category of my feelings”, *there are constraints on my freedom and relaxation of those constraints... I might then review particular constraints on particular freedoms. For example, for a period of time, “the traitor” demanded (as a condition of employment) that he review all my letters before I could send them – a constraint on my freedom to communicate with my scientific colleagues that damn near drove me crazy. I felt like a trapped animal. Eventually I broke free from this constraint, but at considerable cost.*

CONSTRAINTS ON FREEDOM

You probably have felt similar (but, I hope, not so intense) constraints on your freedoms: it’s called “the parent-child relationship”! Parents, however, aren’t normally so vindictive as “the traitor” eventually admitted he was (because, when I had been his supervisor, I had encouraged him to be kinder to a co-worker – an encouragement that he strongly resented). Instead, as you probably realize when you have time to reflect, parents (with their typical incompetence!) try to promote your survival by constraining your freedoms. And though at times you may understandably question their “ridiculous assessments” of your abilities to make appropriate decisions, yet I hope that, when you reflect on the situation, you take pleasure in seeing some of the benefits to you in the relationship: having someone else (besides yourself) adopt as a prime goal the promotion of your survival! Kid: it doesn’t get any better than that!

In other cases (probably in most cases!) most people resent constraints on their freedoms. Thus, convinced that no one (with the exception of one’s parents and, one hopes, one’s spouse) is so committed to our own trio of survival goals as we individually are, and convinced that, in general, we need to be free to promote these goals, then in pursuit of those goals, we desire freedom. Stated differently, just as I’m certain that all humans pursue their trio of survival goals, I’m certain that all humans almost always want

their freedoms – and I’m equally certain that all humans will eventually be free from all dictators, including all clerics.

As far as I’ve been able to discern, the most important exception to the principle that achieving our trio of survival goals is enhanced if we are free is the following. Sometimes we conclude that our survival goals will be enhanced if we join some group and accept associated constraints on our freedoms. That is, with our trio of survival goals being our prime goals, then sometimes we willingly accept constraints on our freedoms in exchange for enhancing the possibility of achieving our trio of survival goals.

For example, most of us willingly pay our taxes (although not without complaining about their complexities and about how some of our tax dollars are used!), provided that, in the main, our taxes are used to promote our trio of survival goals (e.g., to fund the military and the police, the schools and our justice system, public works, scientific research, and so on). Similarly, we willingly obey most laws; that is, we accept constraints on our behavior (e.g., we agree to drive only on the right-hand side of the road), because our own trio of survival goals is promoted if we all accept the constraints on our freedoms dictated by our laws.

I apologize if the above “civics lesson” was totally obvious, Dear. I “belabored the obvious”, because I wanted to contrast it to other constraints that some people accept on their freedoms – to avoid fear. For example, a part of why we accept constraints on our freedoms by agreeing to abide by our society’s laws follows from our fear of lawlessness (*viz.*, anarchy). In fact, during times of great insecurity (such as during riots or wars) people in many societies have accepted severe constraints on freedoms (of movement, of assembly, of the press, and so on). But, Dear, some people willingly accept even more stringent restrictions on their freedoms to avoid much more intense and much more personal fears.

FREEDOM & FEAR

I trust you agree, Dear, that fear is one of our most powerful feeling – if not the most powerful (i.e., fear may be “most moving” on most people’s “emotion scale”). When Body senses fear, adrenaline starts pumping; when Right Brain feels fear (for example, associated with noises in the night), all sorts of horrifying pictures (of everything from burglars to monsters) can

appear. In such cases, Left Brain usually takes a back row seat: Body takes over with its “Just do it: fight or flee!”

The number of different fears that people can have is enormous. These are all the “phobias” that people can have (where ‘phobia’ is from the Greek word *phobos* meaning ‘fear’). To review some, search on the internet for “list of phobias”; some such lists have well over 200 entries, ranging from *acrophobia* (fear of heights) and *arachnophobia* (fear of spiders) to *xenophobia* (fear of what’s strange, where *xenos* is the Greek word meaning “strange, foreign, a stranger”) and *zoophobia* (fear of animals).

Meanwhile, I know that you have few such “fears”, and you may even “feel” that most of such fears would be “silly” – for you! But, Dear, I trust that you’ll never casually dismiss other people’s fears as silly: their fears may be “totally incomprehensible and unrealistic” to you, but their fears can be as realistic to them as being attacked by a blood-thirsty screaming demon.

If our own fears are not too intense – or even if they are intense, then after some of the initial intensity has subsided – then our Left Brain can become involved, to try to analyze the cause of the fear and to examine alternative, rational responses. As I already mentioned, in many cases we chose to constrain some freedom to avoid some fear; for example, people with fear of crowds (cenophobia or ochlophobia) will constrain their activities to avoid crowds, people with fear of travel (hodophobia) will constrain their freedom of movement, and so on. An example of my willingness to constrain a freedom to avoid fear is that, at least temporarily, I yielded on my freedom to communicate with my colleagues for fear of being fired (that is, losing the ability to feed my family). For similar reasons, many workers put up with similar (or even worse) “abuses” at their jobs.

But this isn’t the place to go into details about any of what could be an enormous number of examples. Instead, because a certain grandchild asked me why I didn’t believe in God, I want to show you how some people willingly accept constraints on their most important freedom (the freedom to think) to alleviate their most intense fear (fear of death). Stated differently, such people rate freedom from fear of death (necrophobia) as more important than freedom to think.

FREEDOM OF THOUGHT

First, Dear, maybe I should defend my statement that the most important freedom is freedom to think (or freedom of thought). If we can't think for ourselves, it's hard to claim that we're still alive: even animals (even trees!) think for themselves! Meanwhile, fortunately for us, it's very difficult to constrain people from thinking for themselves. No matter what your parents say, you still think that...! As the poet Richard Lovelace (1618–1658) wrote (when perhaps “hermitage” was pronounced differently!):

Stone walls do not a prison make,
Nor iron bars a cage;
Minds innocent and quiet take
That for an hermitage...

That is, even when one's body is imprisoned, one's mind can still be free. Yet, in every society, various groups go to substantial efforts to try to constrain our thoughts. In many cases, such efforts promote each person's trio of survival goals: your parents (even certain grandparents!) try to influence your thoughts in ways that they think will help you, your teachers' prime job is to influence your thoughts, and so on, including a huge number of other people (from police to politicians and from counselors to clerics).

In many cases, though, people try to constrain your thoughts not for your benefit but for their own. An obvious example is most advertisers (who seek your money), but other examples include most politicians (who seek money and power) and (as I'll show you in later chapters) essentially all clerics (who seek money, power, and prestige and/or relief from their own fears, e.g., of death).

Because so many people have gone (and still go) to such enormous efforts to try to constrain your thoughts, Dear, it's commonly extremely difficult for your thoughts to be free. Each of us has been inundated with indoctrination or propaganda almost every waking hour essentially since we were born! Even when we walk alone, say in a desert or along a lonely beach, it's extremely difficult not only to break our thoughts free from the influences of others but even to know which thoughts are our own.

One of the best ways – if not the single best way – to free our thoughts is to gain exposure to opposing ideas. Thereby, there's Thomas Jefferson's wonderful summary:

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The basis of our government being the opinion of the people, the very first object should be to keep that right; and were it left to me to decide whether we should have a government without newspapers or newspapers without a government, I should not hesitate a moment to prefer the latter.

And of course Jefferson's point should be generalized: not only to more modern forms of communication (such as the internet) but also for all ideas. That is, Dear, except for those few brilliant humans who are truly able to think for themselves, the rest of us (as a practical matter) require freedom of communication if we are to experience freedom of thought. Stated more succinctly, Dear, please expose yourself to other thoughts.

Meanwhile, those intent on constraining your thoughts will attempt to constrain your exposure to other ideas. The most notorious examples are all the political dictators who have polluted the world: by constraining what the people were (and are) able to learn, dictators constrained (and still constrain) what most of the people of their countries were able to think. Similarly for the clergy of all organized religions, as I'll show you in later chapters.

And similarly, even for those who want to help you. Thus, your parents have constrained your exposure to certain ideas (and certain emotions and other experiences) because they thought that you were "too impressionable". That is, your parents sought to increase your exposures in a balanced manner, so that your personality would remain balanced after each new exposure – which is a part of the difficult "balancing act" of being a parent. Meanwhile, believe it or not, even a certain old grandfather has been working on his own balancing act, trying to convey certain ideas to certain grandchildren. In fact, sometimes even you will want to constrain your thoughts (e.g., constraining "day dreaming"), but while you're reading this book, I hope that you'll give yourself the opportunity of freedom of thought.

FEAR OF DEATH

That assumed, I'll now return to the main point that I was trying to make. In pursuit of our trio of survival goals, sometimes we willingly abandon our most important freedoms – if we are convinced that, thereby, we eliminate some terrorizing fears (i.e., unquestionable threats to our survival). In particular, some people constrain their most important freedom (their freedom of thought) to avoid their most terrorizing fear (the fear of death). In fact, abandoning thought in the face of terror is quite common – even

* Go to other chapters *via*

“automatic”. Thus, when you’re terrorized, your adrenaline flows, your (Left Brain) thoughts are discontinued, and your instincts automatically take over: without thinking, you automatically “duck”, “slam on the brakes”, or do whatever your Body demands be done (with its: “Just Do It!”).

But the cases that I want you to consider are those when there’s time to think about some terror – and the conscious choice is made to constrain further thinking. I don’t know how common this is – in fact, I’ve never spent much time thinking about the number of terrors to which humans are subjected – but there’s the old adage: “If you can’t do anything about it, why worry about it?” For example, I remember when I was a youngster (maybe between the ages of 8 to 12) walking home at nights through the woods, really scared of cougars that I knew were there. Therefore, as I walked (rapidly!), I’d whistle and sing as loud as I could, in part because I thought that the noise would scare the cougars away, but mostly because, while I was “entertaining the trees”, I couldn’t think of what was terrorizing me!

More significantly, there’s substantial evidence to support the statement that most people have always chosen to abandon their freedom to think about their most basic and most common terror, their own death. Now, Dear, maybe you’ve never been terrorized by your own death. Therefore, let me suggest why, and let me try to describe this terror based on my own experiences. The first idea that I want to convey to you is that, if the religious propaganda (to which you’ve been exposed since you were a baby) has been effective, then your ideas about your own death have been modified to conform to “the party line” or to “group think” (i.e., to conform to your indoctrination). And the second idea that I want to convey is that our ideas about our own death change with age.

Let me start with how our ideas about our own death change with age. Although I’m certainly no expert on the subject, I expect that young children rarely think about their death in abstract ways; instead, as with my experience with the cougars (and with various other things that went “bump in the night”), young children are afraid not of death but of whatever it is that might harm them. For older children and young adults, especially males, it seems to be common not only to be unafraid of death but even to defy dangers – and thus the “stunts” that even they will later agree were foolish, such as the way I would roar down the road in my motorcycle, exceeding the speed limit, lying down with my stomach on the gas tank and my feet hooked over the tail light. What an idiot!

Then, sometimes as a part of their “middle-age crisis”, people commonly come to the stark awareness that they’ll die. As far as I recall, my first experience with this “death terror” wasn’t until my late twenties or early thirties. This experience, which occurred maybe a total of ten times in my life, is of an overwhelming fear of death. I especially remember the several times that I would wake up in the middle of the night suddenly “realizing” I would die. It was an overwhelming emotion, followed by thoughts such as: “What am I doing wasting my life on... when soon I’ll be totally gone?”

In truth, I don’t know the origin of such feelings. Because I would wake up with this feeling, I assume it was coming from my subconscious mind (i.e., from Instinct or Body). And unfortunately, when I’ve had such feelings, I’ve never had “the presence of mind” to examine “the picture” that my mind displayed of “death”. That is, I don’t know how Right Brain is involved, although I have the faint impression that “the picture” is one of infinite depth without any details... if that makes any sense!

During the past decade or more, the frequency of occurrence of my “death terror” (or whatever it should be called) has greatly subsided – so much so that, now, I don’t remember when it last happened. Maybe with age, “programmed into our genes”, we “instinctively know” how to “come to terms” with our death; that is, maybe the evolution of these experiences has been natural. But maybe this death terror has subsided (or disappeared) because, as I’ll now try to show you, my left brain has had time to “figure out this fear”. And since I don’t know which of those two alternatives dominated, let me add some comments about both.

As for the possibility that the dominant factor has just been my aging, let me mention that I have some experience with the thoughts of people when they were near death. On his deathbed, my father-in-law, who was quite religious, said to me: “I’m not afraid to meet my maker.” And on her deathbed, my mother (who was very religious) said to me: “I’ve lived long enough – probably too long.” Thus, when near death, at least two of your great grandparents had no fear of death.

In general, Dear, I’m sure that your ideas about death will change as you age. In particular, when you become very old (similar to certain people whose names it’s best not to mention!), I guarantee that your ideas about death will be different from the ideas of a youngster. Even while you’re

young, when you're tired, do you shun lying down to sleep? When you're in pain, do you shun the time when the pain would stop? When you're bored, do you shun an end to the boredom? And when you know you're a burden to others, do you wish that you weren't? That is, Dear, regardless of your feelings about death, now or when you're older, I guarantee that you will feel differently about death when you're old.

On the other hand, maybe my own fear of death didn't subside just with age, but subsided because many years ago, "I" (Left Brain) did "confront" my "death terror". After not too much thought, "I" realized that fear of death was totally ridiculous! Starting from the premiss that my death would mean my total lack of awareness, I concluded the obvious (which I still remind myself when I'm walking with F's): *death you'll find you'll never know: you can't be aware of a lack of awareness*. That is, Dear, no one can know about one's own death (i.e., a total lack of awareness), for it's logically inconsistent to be aware of being totally unaware.

Subsequently I found that others had reached a similar conclusion. In particular, approximately 2300 years ago the Greek philosopher Epicurus (341–270 BCE), whom I mentioned in the previous chapter and about whom I'll be writing more in later chapters, wrote the following.

[It follows that] death is nothing to us. For all good and evil consist in sensation, but death is deprivation of sensation. And therefore a right understanding that death is nothing to us makes the mortality of life enjoyable, not because it adds to it an infinite span of time, but because it takes away the craving for immortality. For there is nothing terrible in life for the man who has truly comprehended that there is nothing terrible in not living... [Death should not] concern either the living or the dead, since for the former it is not, and the latter are no more.

That is, in my own words: *Death, you'll find, you'll never know*.

In summary, Dear, please don't be afraid of death. Definitely try to avoid it by being careful, definitely try to postpone it, so you can enjoy as much as life as possible, but don't be afraid of death. As near as I can guarantee you anything, Dear, I guarantee you that you'll never experience death, because you can't be aware of a lack of awareness – you can only be aware of the fear of lack of awareness.

And while I'm at it, let me provide a summary, also, of all the above, because I want to end this chapter with something far more important than what I review with 'F' when I'm walking. I review:

F – Figuring out Feelings

Most feelings are survival signals, warning me of dangers and rewarding me for successes; usually they're a mixture; most moving may be instinctive; to analyze them, use an "e-motion" scale (!), but some are clear: there are threats to my survival, and signals telling me that I am surviving; there are constraints on my freedom and relaxation of those constraints; there's my anger at stupidity and my irritation at ingratitude; there's exhilaration when I succeed, and despondency when I fail; there's joy in living and somberness of dying. But: "Death, you'll find, you'll never know" – you can't be aware of a lack of awareness.

FACING FEARS FOR FREEDOM

First, though, some apologies to you. I expect that all of the above hasn't been of much value to you, in part because the topics were so much derived from my own experiences and in part because I know that I can't express my thoughts well, especially thoughts about my feelings. Of course I hope that you'll find something of value, but I'm skeptical. Instead, should you follow a path similar to mine (digging into your feelings and trying to gain your own freedom), I wouldn't be surprised if you find that you'll need to spend substantial effort coping with the indoctrination to which you have been subjected, i.e., your parents' religion.

For example, if you think you're immune from all thoughts about death, then I'm sorry to feel the need to object: not only are you not immune from such thoughts, you have been immersed in them ever since you were a baby. That is, you've been continuously subjected to propaganda training you to come to terms with death in a specified way (eternal life). You never even had a chance to decide if you wanted your thoughts constrained; because of your indoctrination, your thoughts were never free.

That is, if all of what I review seems "weird" to you, if death seems to be something that "old people worry about", if death seems to be "totally irrelevant" to you, if you've never given fear of death much thought, then I suggest that you skip church next Sunday and, instead, give some thought to one of the "cornerstones" of your religion. Similar cornerstones support the

foundation of essentially all organized religions (certainly including all varieties of Christianity and Islam), namely, the “promise” of “eternal life”.

In later chapters, I’ll try to help you dig into the idea of “life after death”. There, I hope you’ll be willing to see how primitive this idea is, almost certainly starting before writing was invented (~5,000 years ago), well illustrated with the purpose of the Egyptian pyramids (built ~4500 years ago), and perhaps first conceived more than 50,000 years ago! That is, it’s an idea that originated when humanity was “in its infancy”, when the most advanced thoughts were comparable to those of a little child of today.

Further, Dear, I hope you’ll be willing to see the complete absence of even the tiniest shred of data to support the idea of “life after death”, well illustrated by one of the earliest samples of writing, namely, *The Song of the Harper*, written in Egypt ~2650 – 2600 BCE:

There is no one who can return from there [i.e., “the afterlife”] to describe their nature, to describe their dissolution, that he may still our desires... No one goes away and then comes back.

More significantly, I hope you’ll be willing to consider other thoughts. For example, there’s the thought of Bertrand Russell:⁵

Fear is the main source of superstition, and one of the main sources of cruelty. To conquer fear is the beginning of wisdom.

Moreover, not only is conquering fear the beginning of wisdom, it’s a foundation for freedom of thought.

To conquer fear, Dear, you must confront it. For example, in the case of my overcoming my fear of death, maybe what happened is that my Left Brain examined my fear of death, and with this examination (like examining if there truly is a “boogie man under the bed”), my fear has dissipated. If that’s what happened, then probably there’s a lesson here of wider significance and of value to you: if you wish to “conquer fear”, then first try to understand it. Yet I know that, instead of trying to understand their fears, many people try to live with their fears, try to ignore them, or “wish them

⁵ Quoted from *The Conquest of Happiness*, p. 135, a Signet Key Book, for which I can’t give the publication date because the binding of my copy is broken and the copyright page is lost, but I see that Russell wrote this little book when he was 58, so the copyright date must be in the 1930’s. Russell lived from 1872–1970 and was still very active in his 90s!

away” with some belief – where, with *lief* the Anglo-Saxon word for ‘wish’, *be-lief* means, “wish to be.”

Now, of course it’s understandable why people want to constrain their thoughts when their thoughts turn “unpleasant”. To avoid facing problems, many people seek escape by “numbing” their minds with other activities, such as watching TV, going to movies, or going “out” in other ways (i.e., “going out” of one’s thoughts). We prefer not to think about sickness, illness, and death. Certainly most people wish to avoid thoughts about the terror of their own death; many curtail such thoughts by entering into a state of denial; they deny the existence of death; they “believe” that they will have “eternal life”. But this denial of death can come at an enormous cost: the acceptance of constraints on freedom of still other thoughts and the acceptance of our being manipulated by power mongers. Thus, Dear, as I’ll show you in later chapters, replacement of the real (instinctive) fear of death with a fictitious fear of the Lord (or fear of “eternal damnation”, or whatever) leads to loss of freedom.

In later chapters, I’ll sketch some of the history of our ancestors’ struggles to achieve various freedoms. Here, I’ll address just an apparent contradiction in the behavior of so many humans: 1) the obvious desire of so many humans to be free, and 2) the obvious ease with which so many humans abandon their freedoms! The contrast between these contradictory behaviors seems especially stark when the immensity of the dangers that people have faced to overcome to achieve their freedoms (think of those who fought in the American Revolutionary War) is contrasted to the ease that so many people abandon their freedoms – typically to alleviate some fear.

At first thought, this contradiction may seem to be derived from the difference between brave leaders and cowardly followers, but closer inspection shows that many of the “bravest freedom fighters” derived their “bravery” by abandoning their freedom to think – so that they could avoid the frightening prospect of death. Thus, it takes no bravery to put your head in a lion’s mouth or strap explosives around your waist – if you’ve been convinced that, thereby, you’ll be rewarded with “eternal life”. The difference, then, is not so much in “bravery” as it is in the ability to think and in the commitment to rely on data.

FREEDOM FROM RELIGION

And it's not just a constraint on freedom to think about death (which most people don't want to think about anyway!), but a huge collection of associated constraints on other freedoms: you can belong to a specific group only if you believe [such and such]. Such constraints are the common fare of all organized religions, with the clerics defining the constraints on your freedom to think – and to add insult to horrible injury, they charge you for the “privilege” of having your thoughts and actions constrained!

In later chapters (e.g., **X2**), I'll address the complex topic of why people choose to be religious. Here, I'll just mention that, many people will go to surprising extremes to satisfy the need that they “feel” to belong to a group. As Eric Hoffer wrote in his 1951 book *The True Believer*:

People whose lives are barren and insecure seem to show a greater willingness to obey than people who are self-sufficient and self-confident. To the frustrated, freedom from responsibility is more attractive than freedom from restraint. They are eager to barter their independence for relief of the burdens of willing, deciding, and being responsible for inevitable failure. They willingly abdicate the directing of their lives to those who want to plan, command, and shoulder all responsibility.

Stated differently, many people seem to desire not only to be members of some group but also to be followers. The desire to belong to a group seems to be part of the “herd instinct”, whereby people (similar to animals) instinctively know that they're safer if they become members of a herd (because a herd is normally attacked by predators only at its edges). As for why some people seem to want to be followers, maybe the tendency has evolutionary support: in any group of animals, all can't be leaders! So, did evolution favor groups that had have many followers? Otherwise, would there be chaos in the herd or tribe?

But even if most of us are “genetically designed” to be followers, it's still our choice of whom to follow. In your case, I hope you'll choose to follow the free thinkers. But I strongly expect, Dear, that your genetic inclination is to lead. If so, then I hope that you'll become a leading freethinker. In either case, I expect that you'd profit from studying the ideas of Robert Ingersoll (1833–1899).

As an example of Ingersoll's writings, and in contrast to my clumsy writing, what follows is his description of how he felt when he broke free from his

own religious indoctrination. I'll end this chapter with this quotation (save for my "Endnote" on tensors), because I don't want to pollute what he wrote by my writing anything more. Besides, every time I re-read what he wrote, tears well up in my eyes, and then, I want my mind just to be still, relishing the feelings stimulated by what he wrote and how he wrote it. After you've read it multiple times, Dear, maybe you'll understand why he's frequently referred to as "Ingersoll the magnificent."

When I became convinced that the Universe is natural – that all the ghosts and gods are myths – there entered into my brain, into my soul, into every drop of my blood, the sense, the feeling, the joy of freedom. The walls of my prison crumbled and fell, the dungeon was flooded with light, and all the bolts, and bars, and manacles became dust. I was no longer a servant, a serf, or a slave. There was for me no master in all the wide world – not even in infinite space.

I was free: free to think, to express my thoughts – free to live to my own ideal – free to live for myself and those I loved – free to use all my faculties, all my senses – free to spread imagination's wings – free to investigate, to guess and dream and hope – free to judge and determine for myself – free to reject all ignorant and cruel creeds, all the "inspired" books that savages have produced, and all the barbarous legends of the past – free from popes and priests – free from all the "called" and "set apart" – free from sanctified mistakes and holy lies – free from the fear of eternal pain – free from the winged monsters of night – free from devils, ghosts, and gods.

For the first time I was free. There were no prohibited places in all the realms of my thought – no air, no space, where fancy could not spread her painted wings – no chains for my limbs – no lashes for my back – no fires for my flesh – no master's frown or threat – no following another's steps – no need to bow, or cringe, or crawl, or utter lying words.

I was free. I stood erect and fearlessly, joyously, faced all worlds. And then my heart was filled with gratitude, with thankfulness, and went out in love to all the heroes, the thinkers who gave their lives for the liberty of hand and brain, for the freedom of labor and thought – to those who fell on the fierce fields of war – to those who died in dungeons bound with chains – to those who proudly mounted scaffold's stairs – to those whose bones were crushed, whose flesh was scarred and torn – to those by fire consumed – to all the wise, the good, the brave of every land, whose thoughts and deeds have given freedom to the sons of men. And I vowed to grasp the torch that they had held, and hold it high, that light might conquer darkness still.

ENDNOTE ON E-MOTION TENSORS

First, I should define what a tensor is. Actually, though, you're already aware of the simplest two types of tensors: what your math and physics teachers have called a 'scalar' (i.e., a positive number) is more completely called a "zeroth-order tensor", and what they've called a 'vector' (i.e., something with magnitude and direction) is more completely called a "first-order tensor".

In what follows, I'll identify vectors using boldface, blue type, i.e., I'll type the vector "A" as **A**. If "unit vectors" (i.e., of unit length) are defined along a particular coordinate system, e.g., unit vectors **i**, **j**, and **k** respectively along the usual (Cartesian) coordinate system (x, y, z), then as you know, a 3-dimensional vector **A** can be written as $A_x\mathbf{i} + A_y\mathbf{j} + A_z\mathbf{k}$, in which A_x , A_y , and A_z are the components of **A** along the three perpendicular (or "orthogonal") coordinates x, y, and z.

More generally and using alternative notation, if the basis vectors of a coordinate system (not necessarily of unit length or orthogonal) are \mathbf{e}^i (with $i = 1, 2, 3, \dots$ continuing for as many dimensions are appropriate, and notice that 'i', here, is used as an index, not to indicate squaring, cubing, etc.), then any vector **A** can be written as $\mathbf{A} = A_1\mathbf{e}^1 + A_2\mathbf{e}^2 + A_3\mathbf{e}^3 = \sum A_i\mathbf{e}^i = A_i\mathbf{e}^i$, in which the sign expressing the summation over i, \sum , is suppressed in the last equality through the use of the convention that any repeated index is to be summed.

Recall, also, that your teachers defined the "inner product" (or "scalar product" or "dot product") of two vectors, say **A** and **B**, namely $\mathbf{A} \cdot \mathbf{B}$, as the product of the magnitude of **A**, the magnitude of **B**, and the cosine of the smallest angle between the two vectors. Thereby, given a unit vector, say **u**, in a particular direction, then $\mathbf{u} \cdot \mathbf{A}$ (which is identical to $\mathbf{A} \cdot \mathbf{u}$) is the component of **A** in the direction **u**. For example, $\mathbf{i} \cdot \mathbf{A} = A_x$, since $\mathbf{i} \cdot \mathbf{i} = 1$ and $\mathbf{i} \cdot \mathbf{j} = 0 = \mathbf{i} \cdot \mathbf{k}$. Also, notice that $\mathbf{A} \cdot \mathbf{B}$ isn't a vector (a first-order tensor); it's a scalar (i.e., a zeroth-order tensor), i.e., a positive number.

Mathematically, higher-order tensors (which I'll identify using different colors) can be defined as the "open product" of vectors. For example, given any vectors **A**, **B**, **C**, etc., then second-order tensors include **AB**, **BA** (which is not the same as **AB**), **AC**, **BC**, etc. Similarly, a third-order tensor is **ABC** (which is not the same as **ACB**), and so on, for tensors of any order.

The "open product" is as simple as it seems to be, i.e., just multiply the two vectors together, but take care, since the commutative law is not applicable (e.g., in general, $\mathbf{AB} \neq \mathbf{BA}$). Thus, in 3-dimensions and using Cartesian components of the vectors,

$$\begin{aligned} \mathbf{AB} &= (A_x\mathbf{i} + A_y\mathbf{j} + A_z\mathbf{k})(B_x\mathbf{i} + B_y\mathbf{j} + B_z\mathbf{k}) \\ &= (A_xB_x\mathbf{ii} + A_xB_y\mathbf{ij} + A_xB_z\mathbf{ik} \\ &\quad + A_yB_x\mathbf{ji} + A_yB_y\mathbf{jj} + A_yB_z\mathbf{jk} \\ &\quad + A_zB_x\mathbf{ki} + A_zB_y\mathbf{kj} + A_zB_z\mathbf{kk}) \end{aligned}$$

In general coordinates and more compact notation, $\mathbf{AB} = A_i\mathbf{e}^i B_j\mathbf{e}^j = A_iB_j\mathbf{e}^i\mathbf{e}^j$.

* Go to other chapters *via*

An important example of a second-order tensor can be seen from taking the scalar product of two vectors represented in a general coordinate system. Thus, given $\mathbf{A} = A_i \mathbf{e}^i$ and $\mathbf{B} = B_j \mathbf{e}^j$, then

$$\mathbf{A} \cdot \mathbf{B} = A_i B_j \mathbf{e}^i \cdot \mathbf{e}^j = g^{ij} A_i B_j,$$

in which the summation convention is used twice (sum over both i and j) and g^{ij} are known as the “contravariant components of the (second-order) metric tensor” for the particular coordinate system. In his general relativity theory, Einstein proposed that the metric tensor for 4-dimensional space-time depends on the presence of mass; i.e., in now-familiar words, he proposed that mass “warps the metric of space-time”.

The potential importance of such higher-order tensors for trying to describe emotions can be seen by taking the scalar product of, say, a second-order tensor (say, \mathbf{AB}) with a unit vector in some particular direction. As an example, using a Cartesian coordinate system and again using $\mathbf{i} \cdot \mathbf{i} = 1$, $\mathbf{i} \cdot \mathbf{j} = 0$, and $\mathbf{i} \cdot \mathbf{k} = 0$,

$$\mathbf{i} \cdot \mathbf{AB} = A_x B_x \mathbf{i} + A_x B_y \mathbf{j} + A_x B_z \mathbf{k}.$$

Thereby, taking the scalar product of a second-order tensor with a unit vector in a particular direction is seen to yield not only a vector but also a vector that’s “the component” (in the specified way) of the second-order tensor in the chosen direction. By the way, you can also thereby see why, in general, $\mathbf{AB} \neq \mathbf{BA}$.

Meanwhile, in physics (as opposed to mathematics) tensors are real physical “things”, which is why they don’t depend on coordinate systems (although their components obviously do). Different types of tensors are distinguished by the different ways needed to describe them. Thus, the simplest tensor, a scalar, can be described using just a single, positive number; examples include the number of molecules of air in a particular region of space and the temperature (i.e., kinetic energy) of those same molecules. Next simplest is a vector, which can be described only if both its magnitude (a scalar) and its direction are specified; alternatively, in 3-dimensional space, one can describe a vector *via* three components (which can be positive or negative) along some user-defined coordinate system; examples of vectors include the velocity of the air at a particular point in a room, and various forces (such as the forces of gravity, electricity, magnetism, etc.).

And so on it goes: a second-order tensor (which doesn’t have a “common name”, as is the case with ‘scalar’ and ‘vector’) is a physically-real quantity that can’t be described with just one (positive) number (as in the case of a scalar) or with just three (positive or negative) numbers (as in the case of a vector in 3-dimensional space), but requires $3^2 = 9$ (positive or negative) numbers to describe it in 3-dimensions (or, e.g., $4^2 = 16$ numbers to describe it in 4-dimensional space-time).

An example of a second-order tensor is the stress tensor, i.e., the force per unit area on an area with a particular orientation at a point within your room when the air is

* Go to other chapters *via*

moving. And if you don't see why the area's orientation is important, Dear, then next time you're riding in a car, roll down the window, stick your hand (for present purposes, a unit area) into the moving air, and experience how the stress (which is equal in magnitude but opposite in direction to the force you need to hold your hand motionless) depends on the orientation of your hand. Thus, it's as if the second-order tensor **Stress** "contains" two vectors, and the (vector) force per unit area on a unit area with unit, perpendicular vector \hat{u} is found *via* the scalar product $F \cdot \text{Stress}$.

Another example of a second-order tensor is the stress within a piece of material. Still another example is the strain tensor, **Strain**, within the same material when it's stressed. For most materials and so long as the stress isn't excessive, the strain is related linearly to the stress (i.e., if the stress is doubled, then so is the strain). This linear relationship between stress and strain is usually written as

$$\text{Stress} = \text{Elasticity} : \text{Strain} ,$$

in which **Elasticity** is the fourth-order elasticity (or stiffness) tensor and " : " is the double scalar-product (i.e., the scalar product is taken twice), e.g., using three-dimensional Cartesian coordinates and the summation convention (twice),

$$\text{stress}^{ij} = \text{elasticity}^{ijkl} \text{strain}_{kl}$$

While I'm here, I should mention the following three points.

1. Similar to how the scalar product between a second-order tensor and a vector "maps" (or transforms) the vector into a different vector (different in both magnitude and direction), the double scalar-product between a fourth-order tensor (e.g., the elasticity tensor) and a second-order tensor (e.g., the strain tensor) maps the second-order tensor (in this case, the strain tensor) into a new second-order tensor (in this case, the stress tensor).
2. In general, a fourth-order tensor in 3-dimensional space requires a set of $3^4 = 81$ (positive or negative) numbers for its description; in 4-dimensional space-time, a fourth-order tensor would need $4^4 = 256$ numbers to define it; more generally, an m^{th} -order tensor in n -dimensional space requires m^n numbers to describe it. For cases when physical properties are directionally independent (i.e., isotropic), then associated tensors (e.g., the stress and strain tensors) are symmetric, reducing the set of numbers required to describe them by approximately a factor of two.
3. A linear relationship between stress and strain is valid only for a limited number of materials and over a limited range of conditions. For example, when stressed substantially beyond their "elasticity limit", building materials (such as steel) break. In fact, even rubber soon violates a linear relationship between stress and strain, because similar to the "elasticity" of people's emotions (!), rubber's elasticity is stress dependent and sensitive to temperature and loading rates – as was tragically illustrated with the failure of the rubber O-ring that caused the disaster of the Space Shuttle *Challenger*.

And, Dear, if you're wondering, "What the devil is this all about?", then my response would be: without such basic ideas, how could I mention to you my ideas that feelings, emotions, emotional stress and strain, etc. are related to one's "personal elasticity" (or personality)? Soon, I'll try to show you what I mean, but first, realize that when dealing with feelings, emotions, personalities, etc., we're not dealing with just a 3-dimensional space but an n -dimensional space, with n large.

Thus, as I mentioned in the chapter's text, "emotional space" must have at least 8 dimensions, according to Plutchik's theory of emotions, but as I also mentioned, other researchers have suggested additional dimensions. Further, though, I want a space (I'll call it a "psyche space") with enough dimensions to span not only emotions but also (the 16?) "personality types". Therefore, the space will need to span not only emotions such as 'love' to 'hate' but also personal characteristics from 'serious' to 'frivolous', 'thoroughness' to 'superficial', 'patient' to 'impatient', 'practical' to 'theoretical', and so on, i.e., a space of perhaps 100 dimensions or more!

Now, it might be useful to outline, here, how with a lot of data, a statistical method of analyzing variance known as a "principal component analysis" can be used to ascertain the most important basis vectors (or "eigenvectors") to span the proposed psyche space. But I'm going to skip such an outline for now (I provide a brief outline near the end of Chapter **X2**), and instead, I ask you to just imagine that such an appropriate set of basis vectors could be defined. I then want to suggest, first, that one's feeling about a particular "thing" at a particular time is a first-order tensor (a vector) in this n -dimensional space. I further suggest that to obtain one's feeling about a particular "thing", one (intuitively!) "maps" or "projects" (mathematically, using a scalar product) one's emotions onto (the direction of) the particular "thing".

For example, consider your feelings at a particular time, $t = t^*$, about a particular cat, $C = C^*$. I suggest that within your n -dimensional psyche space you have (for a host of reasons) acquired certain opinions about all cats, C . I assume that such opinions can be represented as a second-order emotional-response tensor, **Emot-Resp**(C, t), where with the symbolism and color-code, I'm trying to show that your emotional response to cats (identified with the letter 'C') is a second-order tensor that varies with time, t . If it's correct that there are 10 basic emotions, then this emotional-response tensor would be a set of $10^2 = 100$ numbers. To obtain your feeling about a particular cat, say $C = C^*$, at a particular time, $t = t^*$, your brain quickly evaluates

$$\text{Feeling}(C^*, t^*) = \hat{u}_{(C \rightarrow C^*)} \cdot \text{Emot-Resp}(C, t = t^*),$$

in which $\hat{u}_{(C \rightarrow C^*)}$ is a unit vector "pointing" at the particular cat C^* (i.e., I'm assuming that, within your psyche space, you have a way of describing a vector to represent your ability to focus on a particular cat).

As for how you developed your current set of emotions about all cats, I suggest that it results from your personality acting on two factors. One factor is your instinctive,

second-order-tensor response (to animals, to furry things, to...), which I'll identify as **Instinct**. The other factor is derived from all stimulations dealing with cats that you experienced at various times, τ_j , throughout your life; I'll identify your responses at each time, τ_j (to such "environmental stresses") as another second-order tensor (dealing with cats, C), **Envir-Stim**(C, τ_j). I then assume that your personality (which varies with time!), say **Personality**(C, t) is (at least) a fourth-order tensor that's capable of summing over all your experiences, thoughts, and instincts dealing with cats. In a 100-dimensional psyche space, your fourth-order personality tensor could then be a set of $(100)^4 = 100$ million numbers (!) – but I expect that most of us aren't that complicated, perhaps being adequately described with "only" $\sim (20)^4 = 160$ thousand numbers!

But whatever the size of one's personality tensor, I'm proposing that a person's emotional response to cats at a particular time $t = t^*$ [i.e., **Emot-Resp**(C, $t = t^*$)] is determined by using one's personality tensor to transform or map, to the present time, both your instincts and all prior experiences with cats:

$$\mathbf{Emot-Resp}(C, t = t^*) = \sum^i [\mathbf{Personality}(C, t = t^*, \text{Instinct}_i, \dots) : \mathbf{Instinct}_i(C)] \\ + \sum^j [\mathbf{Personality}\{C, t = t^*, \dots, \text{Memory}_j(t - \tau_j)\} : \mathbf{Envir-Stim}(C, \tau_j)],$$

in which, with the notation, I'm trying to indicate that there's a portion or "module" of your personality tensor that represents how you modify (e.g., constrain) your instincts and another module that represents how you modify your memories. In addition and importantly, recognize that, at best, this proposed formalism is appropriate only so long as responses are linear – and intense emotions seem to be almost invariably nonlinear, maybe even by definition of 'intense'! Further, even people with "the resilience of rubber" have personalities that are stress dependent and sensitive to environmental conditions and loading rates, and when stressed beyond limits, even people with "emotions of steel" can have emotional breakdowns.

So, Dear, the next time someone asks your feelings about a particular cat, or your feelings about whatever, say about $X = X^*$, i.e., **Feeling**($X = X^*$, $t = t^*$), then I suggest you provide the obvious response (with due regard to the linearity assumption):

$$\mathbf{Feeling}(X = X^*, t = t^*) = \hat{u}_{(X \rightarrow X^*)} \cdot \left\{ \sum^i [\mathbf{Personality}(X, t = t^*, \text{Instinct}_i, \dots) : \mathbf{Instinct}_i(X)] \right. \\ \left. + \sum^j [\mathbf{Personality}\{X, t = t^*, \dots, \text{Memory}_j(t - \tau_j)\} : \mathbf{Envir-Stim}(X, \tau_j)] \right\}.$$

And should someone ask if you're kidding, then it would probably be best not to respond with details. Maybe just say something similar to:

I mean, yah, your ugly looking, lazy cat seems friendly enough and not too dumb, but though I instinctively like soft cuddly-little animals, I'm allergic to cats – and I still clearly remember the time, when I was about six, when a cat like that scratched me badly. In short, on my e-motion scale ranging from -10 to +10, your mangy cat scores a -3.4, but I look on the bright side: it ain't no cougar!