Apology

For many years I have been thinking about logic. I've been writing, trying to understand, and I've been putting the human back into logic. To me it's not some formal game, nor a study of abstract things, but a serious project to give us guides for how to reason well. We need to reason well in our ordinary lives. We need to reason well for our deepest worries and fears, which includes our worries about the way the world is. Doing so I have had to relate language and how we mean to reasoning and how we give rules for reasoning. Now it's time for me to try to write up a summary of my ideas, ideas that I've developed here and there throughout my work, a little piece made explicit in one place, used and lightly commented on in another.

What I write here is only a report of how I view this large subject now. I have no thesis, no set view that I develop clearly from beginning to end. The duplication, the repetition of certain ideas in slightly different contexts doesn't seem bad to me now. I'm still finding my way, and at best this can be stimulating to others. At times I may sound dogmatic. It is better to state strongly a position so you can disagree, and disagreeing we can learn together. But all that I say here is only what seems to me. I organize, I try to understand, but at heart I am a pyrrhonist.

Over 40 years I have read a lot. I have notes and notes and notes of works that I have read along with my comments on them. Sometimes I remember that a book I read was important, and I'll go back and re-read it. Sometimes I'm surprised to find that a paper I just discovered is one I read long ago. It's hopeless for me to try to trace the development of my thought. It would be misleading to try to relate my conceptions now to what others have written: any quote or citation would be from only what I happen to remember or have good notes on recently. Those familiar with the subject will find that much of what I say is commonplace in a certain trend of thought in linguistics and psychology if not in philosophy and logic. I do not claim originality, except perhaps in relating those trends to a view of logic as the art of reasoning well.

Language-Thought-Meaning

Language, thought, meaning. These are not three things, not even three subjects. There is just the flow, the process we live in with talking, thinking, and meaning. We don't have thoughts; we think. We don't have language; we talk and write and read. We don't have meanings; we make meaning. There is the whole, a fabric of our life that cannot be taken apart without destroying the design. But we can focus on talking, or on thinking, or on making meaning in that fabric, never forgetting that it is only a part, not even a part but a flow that we are attempting to pay attention to in one way.

Introspection

To discuss thinking, I must first look to my own mental life, my introspection. That's the only route I have to thinking that I can rely on. Reports by others about their own mental life cannot be illuminating to me unless I assume some correlation between spoken or written language and mental life. It is only through reflection on my own speaking and writing and thinking and meaning that I can justify such a correlation.

Language

We talk, and we hear in the stream of sounds separate units. We intend to make separate units: words, sentences—more or less. But it is a stream of sound.

Language, what is linguistic, is any form of symbolic communication: a learned, shared system of acts we agree are symbolic.

But we have no language, only talking and, in imitation of that, writing, and interior talking, talking "in our heads."

Gesturing, too, is linguistic. A woman gives me a present with a little kiss on my cheek, and I'm embarrassed, I turn away slightly, smiling, and wave my hand palm outwards towards her, saying, "Aw, shucks." There are no words spoken, and there are no words equivalent to either gesture, but I understand her kiss and she understands my pleasure and embarrassment. People from another culture are not likely to understand, which is how we know that the movements are symbolic.

Cartoons, too, are based on a shared system of symbols: we read from left to right, or top to bottom, the succession meant to indicate time.

Perhaps paintings and sculptures could be said to be based on a shared symbol system, but to investigate those would take us too far from my worries here.

Categorizing

We understand by categorizing, abstracting: this is like that and unlike that. We compare. Analogy is how we live.

We are not so different from other sentient creatures, other creatures that can move and find and avoid. This is hot—avoid. How hot? As hot as what hurt me before? Just hot. This smells like what I ate that made me sick—avoid. Whether a cockroach, a dog, or a human, we perceive our experiences through categories.

Yet aren't humans different in that we create our categories through language? Animals just have categories. But consider my dog Chocolate. He's a catahoula, very athletic. I brought him home to live with me when he was just weaned. When he got big enough, he could jump over the fence that surrounds the patio. I had to keep him in so he wouldn't chase the sheep in the corral because he could jump that fence, too. So I put up an electric wire along the top of the patio fence about 3 inches (8 cm) above the top. I picked him up and touched him to the wire-he yelped. Later when I was inside I heard him yelp again. Then I offered him some food next to the wire; though it was food he loved, he wouldn't take it. Wire-avoid. Later in the summer, around the pastures for my sheep about a quarter mile (four-tenths km) from my home, I put up a single strand of barbed wire above the wire mesh fencing. When I went there with Chocolate and climbed over the fence to an empty pasture, I expected him to jump over the fence and follow me. He always had in the past. I called to him. He sat looking up at the fence, then at me, then at the wire. He wouldn't jump. This wire is like that wire-though he could have no innate category of wires. They are the same-for his purposes of not getting shocked. Surely he could see that the electrified wire was smooth and thin and the wire above the fencing at the pasture was thick and had barbs on it. But he made the analogy; the risk was too great.

Risk? Analogy? He had developed a new category for his world, however he conceived that. We do the same. The difference is that we can give a word or a grammatical form for that new category and so share

our categories. Yes, animals, or at least social animals, can share new categories too, though less easily and more rarely. We do it constantly, directing each other's attention to this or that. Both animals and we can and do make categories without language. But we are so much more ready to share categories, to direct attention, to try to get others to act and react in concert with us by our talking, by our gesturing.

We do not group similar things or similar masses or similar experiences in a category, not even similar types of things, masses, or experiences. Categories are not in the world—they are the result of us categorizing. We do not recognize similarities and differences; we make similarities and differences. This experience is like that experience, though we may not be aware that we have drawn an equivalence until we use it later. If categories were in the world, languages would all pretty much agree and translation would be easy.

My friend says that's crazy. Dogs exist whether we have a category for them or not. Our categories arise as we recognize the similarities and differences in the world. What is there is there.

But someone who's never seen a dog would be shocked to learn that this tiny hairless chihuahua and this giant hairy Great Pyrenees are "the same"—kind of animal. They can't breed, at least not naturally. We can't invoke similarity of their DNA to show that the category of dogs is in the world, for it is because we classify them both as dogs that leads us to ignore what is different in their DNA.

Still, I agree that with our background—which includes our language and culture—it is incoherent to say that dogs do not exist. But it is not incoherent to have another background in which when you say, "There's a dog. Can't you see it?" the other person gets hung up on understanding the words "a" and "it". Seeing the world as process there is dogging, but no dogs.

Nothing is ever repeated except as we draw equivalences to say that there is repetition. The red in this rose is not repeated an instant later, for the sun shines a bit differently, the intensity and saturation, all change. The red in this rose most definitely is not repeated in another rose, nor in the color of a car that is driving by. Yes, something like that color is there, but the "like" is our classifying. Other cultures and languages classify colors differently than we do: they classify as the

same, and hence a repetition, what we classify as different. We classify as the same, and hence a repetition, what they classify as different. With sounds, too, we classify differently what counts as a repetition. Japanese speakers don't distinguish our "l" and our "r" sounds: they're the same for them. We don't distinguish our glottal "l" sound and our tongue "l" sound, classifying them as the same. We could distinguish them if we wished, but we don't. Most certainly the same shape never recurs again: each potato is different, each tomato is different. And the shape of each cell phone is different: though millions are meant to be identical, they are not exactly the same shape. Even the idea of shape is an imposition we make on our experience, surely different from the impositions that a frog makes.

But, my friend insists, rectangles and rhomboids are in the world. We recognize them; we don't create a category. Me, I've never seen a rectangle except in a drawing in a book; I've seen rectangular things. I take the various rectangular things to have "something in common," to be in some way similar. Would a person who grew up in a rain forest, living how her ancestors lived 2,000 years ago, "perceive" rectangular things as similar? Would she even encounter rectangular things? But suppose she does. Do chimpanzees "see" rectangular things as similar? We can do experiments for that. Do dogs "see" rectangular things as similar? Perhaps they would if we gave them a task that would require them to make distinctions, that is, give them a purpose for making that classification. What about donkeys? If there is even one creature to which we ascribe intelligence and which has sensory capabilities of noting edges and angles (eyes, touch, echo-location) that does not "recognize" that similarity-and I would suggest octopuses as a possible example-then it is hard to say that the similarity is "in the world." But, my friend says, those creatures just aren't intelligent enough to recognize the similarity. You have to be as intelligent as (perhaps) a donkey to "see" that similarity. But that's the point. You have to be like us to recognize the similarity, to draw that classification.

What counts as "the same" is never the same except as we choose to call it, to think of it as the same. And that depends on our biology, our experience, our culture, and our language. Until we learn this lesson we will chase after universals and certainty like a child running for the a flickering light in the trees that she thinks is a butterfly.

Categorizing and our purposes

Categories are made for our purposes. But that's too strong, for often we just find that we have a new category; somehow we have brought together separate experiences without even noticing. Only rarely do we intentionally devise a new category for a particular purpose. No more than Chocolate said to himself, "Watch our for that sort of stuff, I'll call it 'wire'," do we more than rarely say anything like, "I'll call that 'jackrabbit,' which I'll be able to use to describe those things."

Categories serve our purposes. Those purposes, which we recognize almost always in hindsight, are relative to our bodies, including our wants, desires, hopes, fears—all our emotions that secure our experiences to our lives. That others have similar bodies, similar wants, similar desires, similar hopes, similar fears—we think—helps us share our categories.

Categories not only serve our purposes, they direct us to purposes, too. We have a category of romantic love, so we look to have that kind of experience in a marriage to fulfill our lives. The purpose of that category is lost in the time when people first began to use that kind of talk eight hundred years ago.

Wires, snakes, those were new categories for Chocolate that summer. Different? The same? Categories for him, as for us, change as we use them, relating one to another, extending, contracting. It wasn't long before he began to jump over the barbed wire fence.

If our categories didn't change, we could never respond to new experiences except to try to stuff them into the categories we have. And we learn soon enough as we grow up that the world will not always fit into the boxes we have. But the changes are constrained by our grammar: things, masses, relations, ... New categories outside that require a new language.

With categories we organize our experience, or rather, we have experiences. We organize further by relating our categories. We distinguish them, we compare them. We conceive of relations among categories: parent of, taller than, more abstract than, more intense than—these also are ways of categorizing.

Language is good for helping us fix our categorizing and share that with others in a way that animals cannot. Language is bad in

misleading us to see an experience as similar that is different, as freezing with a word or phrase a way of seeing that leads us to deal with the world in a way that makes it harder for us to reach our goals. Is light a wave or a particle? It is what it is; sometimes we see it as a wave, sometimes we see it as a particle because those are the only categories we have for it. It's got to be a dog because it's too small to be a wolf; but it's a coyote, a kind of animal my friend from Switzerland had never seen. Frozen categories distort our experience. But that's not right, because often there's no experience to distort prior to our categorizing. Once we have the categories, perception follows unless we make an effort to escape. Even a baby, turning its head to a sound, smiling at her mother's face, has categories that organize some of what she encounters. It is because as infants we have so few categories that all is a blur when we try to recall those times.

Thinking

We think, a process for sure. We imagine in the stream of thinking separate units we call thoughts. They are picked out from that stream, having no separate reality until we recognize them as separate.

We try to separate out parts of our thinking as things: thoughts. But we are very unsuccessful in doing so. What thought am I having now as I write?

The answer is easy if we identify thoughts with pieces of language. Why, you're thinking "What thought am I having now as I write?" We describe and name the thought with the piece of language that is what? That is the thought itself? But I wasn't thinking that piece of language as I wrote, I can tell you that. I was just writing, and that came out. Now (right before I write this), I am thinking in language: I thought "Ralph is a dog." That's a sentence. Then I wrote that down. Sometimes we do have thoughts that are linguistic. I look out the window and say to myself "Sunny." Or on another day I look out the window and say to myself "Raining." The phrase "say to myself" is misleading, as if I were having a conversation with myself. No, the word or phrase or sentence is just there. Is that all there is to the thought? I very much doubt it. I can often note a small delay from perceiving and then the word or phrase in my thinking. I perceive in terms of a category and then say the category internally.

To say that all thoughts are linguistic is to say that all thinking is talking and writing and reading. Except that we also gesture and often have no words for that.

Besides talking and gesturing in my thinking, I dream. I woke from a dream and had a complete story, the whole from beginning to end, coherent, filled with emotion, yet not a linguistic thought around. By "coherent" I guess I mean that it "made sense"; I could and did recreate it. I don't know how to say more what I mean by "coherent," for it definitely isn't that I could have put it into words and the resulting sentences were logically consistent. I can still remember the entire story, but I doubt that I could ever put that story into words: any attempt would be lacking so much of what constituted the story, the emotions, the connections of the parts to the rest of my emotional and historical life.

I also have thinking in mental images connected to my emotional life and indeed to all of my life in some way. These include not only visual images, but sound images, smell images, taste images, touch images. These are definitely not linguistic. I think of cooking a steak on the grill, and my whole body is involved in the thinking: my hands as if to grasp tongs to turn it; my mouth with the taste of the fat and beef; my eyes as if I were seeing the steak and the smoke smarting them; my feet positioning myself relative to the grill; and the meaty smoke-flavored smell.

All those are here "in" me, part of my thinking. Indeed, the single word "steak" creates much of that "in" me only less powerfully than when I am thinking of me cooking a steak on my outdoor grill.

And I have images from my own interior, where I am, the position of my feet, my breath, my digestion, my joy, my fear. Sometimes I can find a verbal equivalent, but only rarely do I try.

We have linguistic thinking in spoken or gesturing language. We have dreaming. We have imagistic thinking. We have sensing our own bodies in the world. We try to break those processes into bits to talk about them, to convey them to another, but they are a flow within us and us within the world with them. Beyond these, I have no idea what is meant by "thoughts."

During the day when I am working outside with my sheep, putting out

hay, fixing a fence, leading my donkey out of the corral to graze, I often have nothing I could call "a thought." Worried as I am about the nature of thoughts and language, I have recently begun to stop myself and consider whether I am thinking. I shovel manure and all I am doing is shoveling manure. No linguistic thoughts. No images. I just do it. From the outside it must certainly look like I'm making decisions: I rake the manure and straw and throw it over the fence, the wind blows some of it back, I then rake the rest of the straw and manure towards a different area of the corral and throw it over the fence in a way that it doesn't blow back. But introspecting afterwards I know that I made no decision: I just did that. I had no linguistic thought, I did not weigh alternatives. Now you may say that I had unconscious thoughts, or that subconsciously I did make a decision. But that is just a way for you to preserve your interpretation of what I did as making a decision.

It is my noting that I often act with no thought that makes me so uneasy about ascribing thoughts or decision-making or intentions to animals based on our observations of them. I am willing to grant that my dogs have mental images, especially mental smells. That I can understand their actions in the sense of predicting what they will do and describing what they do by invoking intentions they have is not any evidence that they have intentions and are making decisions any more than your watching me shovel straw and manure and describing me as making decisions accurately describes my thinking.

Perhaps, though, my raking manure is like driving a car: I once made decisions, once thought about what I was doing and should do, and now it's automatic. But consider: Winter at my ranch. It's cold. I go out every morning to the corral to the sheep. The first thing I do is break the ice on their water. One morning it didn't seem very cold. I went to the corral, felt the wind, and saw ripples on the water. I said to myself, "The water isn't frozen this morning." I did not conclude that; I simply recognized. If you say that nonetheless I did make an inference, then I am at a loss to know what you mean. I had no recognition of thinking in a chain, of thinking at all beyond seeing the ripples on the water and saying, "The water isn't frozen this morning." Is there any reason to believe that this is more sophisticated, more peculiarly human than what my dogs do?

It's not that we underestimate animals' (particularly dogs') abilities to think. It's that we overestimate our own.

Much of my life is spent just doing. You might think that by this I am talking about those times when we say someone is on automatic pilot. When I drive my car and somehow find that I've driven several blocks without any memory of having done so, without having paid attention to any of it, that might seem like what I am talking about. But usually at those times I am having thoughts, daydreaming—it's just that those thoughts have nothing to do with the actions I am making. No, I am talking about those times where I just do.

It's a puzzle how we act without language-thinking or image-thinking or sensing-thinking. But we do. Or at least I do.

We act. And the only way someone can describe it is to ascribe intentions and thoughts to us. But what those thoughts are is hard to say. I look at the straw and manure, I rake it, I put my shovel under some of it, I throw it over the fence. I am looking, and I am, in computer terminology, processing. But what is meant by that word "processing" I cannot say.

If by "thought" you mean something other than language-thinking or image-thinking or dreaming or sensing-thinking, I am at a loss to know what it is. Mentally uttered words, phrases, sentences, these I can identify, I can re-identify, I can treat as things and reason about them as things, using the most developed logic we have, predicate logic. Mental images and dreams are harder to conceive of as things; they are more like masses. But I know how to talk and reason about masses, as we do every day in discussions about water and gold. Sensing-feelings are harder still to reason about, but I know how to think of them again —if I can categorize them.

Am I having the same thought now as I had an hour ago? Ten minutes ago? Forty seconds ago? Even with linguistic thoughts that's hard to say, for we don't remember them except as we write them down or repeat them to ourselves to try to commit them to memory.

Whatever else someone might mean by "thought" is so unclear to me that I cannot tell if I have had one. I cannot recollect it in order to talk about it nor reason about it. Recourse to describing thoughts as unconscious is not helpful, even if we could make that clear, for that just certifies that I cannot talk about those experiences nor pick them out in any way, though you in your omniscience about my mental life feel that you can. It seems to me that no thinking can be completely linguistic. Yes, the word or phrase may be what I am thinking, for example, "Ralph is a dog." But that is not all that I am thinking. With those words, that phrase, comes all the meaning of it.

Meaning

We respond to the sounds, to the thinking—though there is no response just the doing—and call our response, part of the whole experience, meaning. But meaning is not a thing; it is a process. This is not meaning; it is us giving meaning. Not meaning this or meaning that. It is us meaning. Not giving meaning. Not having thoughts, not saying words. But language–thought–meaning in a grand process, in the grand process of our lives that we break into parts, focussing our attention, so we can more easily understand, more easily cope, just as we break up the flow of all, the flux of experience into parts: dogs, cats, lightning, running, water, gold,

One way people talk about meaning is to say that language expresses thoughts. You can see from the previous discussion how unsatisfactory I find that view. What good is it to say that my saying "Ralph is a dog" expresses my linguistic thought "Ralph is a dog"? When I say "Ralph is a dog" it is concomitant with my mental utterance of that, if I do have a mental utterance of it. But often I do not have a mental utterance. I simply speak or write, and I find out what I'm thinking by noting what I say or write, as I am doing at this very moment. But, you'd say, I must have some linguistic thought or some thought prior to my speaking or writing. If so, it must come very close before that overt action, and often must come and go so quickly that I cannot note it. Such thoughts seem unlikely as candidates for what language expresses. But if I formulate what I am to say before I say it, then saying that "Ralph is a dog" expresses that mental saying of "Ralph is a dog" is not much help in understanding talking-thinking-meaning. By "Ralph is a dog" spoken I mean "Ralph is a dog" mentally spoken tells us too little. If you say that when I speak or write "Ralph is a dog" the thought it expresses is that linguistic thought that I wasn't aware of, we are back to unconscious thoughts and your ascribing mental clarity and relations to me that I cannot perceive.

On the other hand, when I try to put that story I dreamt into words, you could say that the words are expressing the mental imagery

thoughts. That may be, though we have to consider what we mean by "expressing."

If you say "Arf decided to rake the manure and straw to that side of the corral so that the wind wouldn't blow it back when he threw it over the fence" expresses the thought I had, then I am at a loss to know what you mean. I can understand it as expressing a thought you had, but not one I had, for I was not and still am not aware of having had any thoughts at that time.

What is this idea of a piece of language expressing a thought, then? Anyone who has tried to write poetry or tried to describe to a doctor the pain in his gut must have had the feeling of trying to put into words some thought. I would say that they are trying to put into words some mental imagery. What is the relation between talking and mental imagery?

Yesterday I conjured up an image of a woman I'd met recently, and I had a sensation vaguely like lust—perhaps "wanting" might be a better word. But that's the point: what is the word? I classify that experience as having been thinking (having a thought), but I cannot find any verbal equivalent of it. It's not just that I can't find a good one or the right one; I can't find anything that approximates describing or categorizing or expressing that sensation/thought. This is the problem all poets face: they cannot find the right words to "put down their thoughts." When I used to write poetry, I would spend a long time trying to capture just the right phrase to express a sensation/ thought, but even when I felt I was successful, I knew that it fell far short of being full enough.

I have some mental imagery. It is not just a picture or a sound or a smell or a taste or a touch-feeling in my mind. It is a coherent picture that connects to my emotional life and to all of the history of my life. I feel the imagery and how it connects, and how it connects can lead me to further imagery, speech, or action. The thought, that is, the mental imagery, is not a piece that is separate and separable from the process of my life as a whole. We can and do, however, separate it to talk about it. By doing so, we are abstracting. We pay attention to some aspects of that imagery and ignore others. That is what we do when we use language, when I try to "put into words" what I have experienced. I have a memory of what I did many years ago, and that memory is entirely in mental images, not just visual images but hearing images,

smell images, taste images, touch images, as well as sensations. I try to put it into words and find that I cannot capture all of it, all the links and connections with the process of my life. I "capture" only some small part of it, not all of the whole, and each such rendering of some mental imagery always seems pale in comparison to the fullness of the imagery itself. It is not that what I say is not what I meant, for I did not mean before I said. It is that what I say is not all of the fullness of the imagery but only describes some aspects of it, perhaps getting right the temporal progression of the images, the feeling of one or two parts of it, but lacking so much else.

It isn't just images but the organization, the posture we take to experience that is key to comprehension: how the utterance connects not just to the web of our associations but to how we perceive, the categories that are activated and sometimes newly related one to another. "Now I see what you are saying", "Now the situation has become clear," "You've convinced me," "Now I will act differently, remembering the stories of Juney and Fido and Feral."

What do I mean by "dog"? I have learned that word, and I know how to use it. I know that I can pick out things by using the word, and I can describe someone as a dog, and I can talk about dogs generally. How I learned to use that word is certainly not identical to how you learned to use that word. We have different experiences to draw on in our original learning. And we have different experiences that we draw on in connecting that word to the rest of our lives, both exterior and mental. When I say "dog" I think of a creature-no, many creatures-that has a particular shape and look, I think of the warmth and succor such a creature brings to people, I think of the doggy smell, I think of life after death where I could be re-united with my dog Juney and where everyone who has lost a dog could be re-united with their dog and be forever happy wandering through the fields, I think of By "think of " I mean I have those mental images or I mentally utter phrases like those. All of that, all of those mental images and mental utterances that the word "dog" conjures up-some on one occasion, others at a different time-all the sensations, all the links it has to not only how I learned it but to all of my life where I have used that word and encountered dogs, is part of the meaning of "dog" to me.

Some would say this is too broad a construal of the meaning of that word. It's meaning, they say, is those things that are dogs. Certainly

I could agree to talk about the meaning of "dog" in that way. But it would be an abstraction from what I do mean when I use the word. It leaves out a great deal, just as my description of the dream I had leaves out a great deal.

We abstract in this way for a good reason. I have no reason to believe that you understand the word "dog" the same as I do, and I have good reason to think you don't. Your life has been different from mine: you learned the word in different circumstances, you have had different experiences with dogs, you have invested those experiences with emotions that make them part of your long-term memory differently than I have. If "dog" expresses a thought you have, then it is a very different thought than I have.

However, we can and do use the word "dog" to communicate. You say, "Do you see that dog there?", and I say, "The one that's pissing on the bush?", and you say "Yes." We have communicated. We have picked out one thing, directing our attention to that one thing. We think about that thing differently. We use little of our understanding of the word "dog" in that communication. The little we use is what is needed to direct each other's attention to the one object. It doesn't matter that "dog" to you conjures images of an animal barking ferociously and the sensation of fear, far different from images and sensations I have when I use "dog." We use so little of our understanding of the word "dog" that we feel justified in abstracting from our mental imagery and the web of relations to say that the meaning of the word is those things that are dogs. But that is not the meaning of the word either to you or to me. It is the abstraction of the meaning of the word, the common part of the meanings of the word that we share, if you like. But that is a bad way to describe it. We do not share a common part to our meaning. There may be nothing at all common to the meanings we have for the word "dog"—nothing truly identically the same for both of us. Rather, the abstracted "common meaning" of the word "dog" is just the externalization of how we act and use that word.

We communicate. You talk, I talk. We use our talk to direct each other's attention to things, to processes, to masses, to feelings, to smells, to . . . By doing so we hope to give each other some sense of the mental imagery each of us has or to give each other some sense of how what we are saying connects to all of our life. We must, perforce, do so imperfectly, for I can never convey to you all that I mean by

"dog," for to do so would require you to have had the same experiences and to have invested those with the same emotions as I. Nonetheless we can count on our both being human, and we believe that both of us being human we go through life interacting with others and all the rest of the world in roughly similar ways. You grasp with your hand much as I do, so you can understand what I mean when I talk about using a hammer. But we share no meanings. We know as well as we know anything that each of us has an entirely private language. But our private languages have enough in common through our all being human and having learned the languages in roughly the same way for us to communicate. And by "communicate" I do not mean understand each other completely, convey to each other the exact meanings each of us has. By "communicate" I mean something like directing each other's attention in such a way that we can predict each other's actions, in such a way that our understanding of how others act and react can fit into the general picture of the world we have. That is, we can integrate our perceptions of those actions and reactions to the rest of our mental life based in part on how you and I use words.

Meaning does not reside in a piece of language; it does not reside in us; it does not reside in the world. It resides in us, language, and the world —in us using language to talk about the world and our experience. Meaning is made in a particular use of language, in a particular context, among particular people. Meaning is not fixed, not for us individually and most certainly not among ourselves when we talk. We negotiate meaning.

We negotiate meaning to try to understand each other better, or perhaps at all. I, you negotiate meaning with ourselves each time we use language in a different way, or in a different context, or just when we reflect on what we say. We negotiate meaning with others, trying to fix more closely how we understand what we say so that we can have some confidence that we are communicating, that we understand together. The need for such negotiation may be evident only from our actions and disagreements. When we negotiate meaning with ourselves, we may do no more than think about what we are saying.

We share meanings with dogs, too. I say "Sit" and Chocolate understands. Chocolate comes up to me on a walk and looks up at me and then sits, and I understand he wants a doggy biscuit. We count on our both being living, moving, animals, creatures that encounter and deal

with experiences that are sufficiently similar that we can share some small part of our meanings. We negotiate meaning with our dogs, too.

Negotiating meaning depends on our recognizing, our using the most basic of our categories: good/bad, beautiful/ugly, nice/not nice, like/dislike. If we have no sense that the other shares these categories with us, we cannot communicate. It is these that link all our other categories to our lives and the world. It is not truth and falsity that are essential to communicating. I don't share that idea with Chocolate, but he and I have learned to recognize enough of what the other classifies as good and as bad. Wires bad. Cats bad. Dogs good. Steak good.

Speaking and dialogue are action, and just as we adjust our actions as we try to hammer a nail or turn a screw that resists our first attempts, we adjust our actions—our speaking—when the situation, the blank stare of incomprehension of the other, demands it, if we wish to be "successful," to do what we set out to do. We do not, therefore, need to reflect on our meanings, though sometimes we do. We just talk and adjust, and in the process modify our meanings.

We are successful in using language, communicating if you like, by getting others to act in ways we intend to direct them to by our words and by being able to understand the actions of others using words we both employ. We would like to believe that we are successful in communicating when we "communicate our thoughts." But that is something we never do: nothing I say can be understood by you in the fullness of how I understand it. But often, perhaps almost always, we use much less than the full meaning of words and phrases, we intend to convey much less, and we can, more or less communicate. The less we hope to communicate, the more likely we are to communicate well, though again, never completely if by that is meant eliciting in the other the exact same pared-down thought.

We direct each other's attention to that pared-down meaning by picking it out as "the meaning" of the word or phrase or sentence. We abstract, as we do in all of our communicating, even with ourselves. When I say to myself "My dog is outside the window wagging her tail" I do not conjure up all of the meaning of the words "dog" and "wagging" but only some small part that I need in that context.

When we are unfamiliar with a word or are learning a language, a dictionary definition is a hook on which to hang our own analogies

and use and experience, continuing until we make the word our own. It is a reference point to orient our analogies.

It is not just logicians who balk at taking thinking to be so ample to include all these bodily sensations and memories and reactions we have as we use words. When a student tells his literature professor that a poem about ravens reminds him of his grandmother, the literary critic will say that's a mnemonic irrelevance. It is not what the poem means, she'll say, but only what the poem happened to jiggle in your memory. How wrong that critic is. That you have images of your grandmother, smell the cookies baking by reading that poem, is part of the meaning of that poem to you. But it is not part of the meaning of that poem to other people. What the critic wants to focus on is the meanings that can be shared by us generally which the poem evokes. Yet the critic, too, will try to expand that, showing more meaning in the poem than you or I had originally perceived. Whether that is just his or her own mnemonic irrelevancy depends on how many of us can share that; the poem begins to mean more.

A poem has no fixed meaning. It is directions. Like a computer program, it is meant to be instantiated: the poem in someone reading or hearing it, the program in being run on a computer. Similarly, a mathematical proof is directions, a guide. It is instantiated by us understanding and using it.

The purpose of speech is to help the other focus on what we intend or want or . . . To help us focus on what we intend or want or Our talk only has to say what the context does not make clear. We're building a fence, and I run out of screws. I say, "Can you go and get me some?" Not noticing we're out of screws, you look around and ask, "Some screws?" "Yes," I say, "screws." I don't say the size of the screws, nor whether they are brass coated, nor whether they have a slot head or a phillips head. I don't convey all of the web of meaning of that word in my life. Is my language too vague? Not at all. I've communicated because you know what screws we're using. We mean differently in all we say, but here we can use language clearly enough to have agreement: you'll get me the right screws, I'm sure. If you bring back the wrong screws, I'll say more, we'll negotiate meaning. Meaning is relative to context, whether that be building a fence or reading a book. Or rather, how much meaning is relative to context,

how much we intend or want to share, or simply how much we are likely to share is relative to context.

I say to my friend, "Come to my home, and we'll have ribs and beer and coleslaw." He comes, and I'm grilling beef ribs. What's this? He thought we'd have pork ribs with barbecue sauce. Is "ribs" ambiguous? No, "glasses" is ambigous: eyeglasses and drinking glasses. With "ribs" there is a more profound difference in "meaning." To you, "ribs" means . . . you think of pork ribs with sauce. To me, "ribs" means . . . I think of grilled beef ribs. I didn't give a full description. But we never give a full description. I didn't give a full enough description. I was egocentric: my meaning is what everyone has. I should have negotiated meaning.

My friend from Colombia stops me when I'm talking about my cousin: "Is it a male or a female?" What I was saying was incomplete, not a full enough description by her standards because in Spanish "cousin" has to be marked as male or female. Yet what I was saying was full enough in English. But never a full description. No, never. All we say is vague, for that is the only way we can communicate. It is the most vague words—good/bad, beautiful/ugly—that link us most closely together and most closely to the world.

When I go walking with my dogs and I see—in the terms you would say—a rabbit or a jackrabbit, I yell "Gavagai." What do I mean with that? There is no noun nor noun phrase that is equivalent, not rabbit, not rabbit part, not rabbit departing; there is no verb or verb phrase that is what I am thinking, not rabbiting for sure. There is no "thought" it is meant to express. Stimulus-response: I see, I yell out, the dogs look around and, if they see, they chase. We communicate. That is the whole meaning of my yelling "Gavagai."

Universals

We search for universals in our experience and our language, some hook we can hold on to while we are standing and swaying on the trolley-car of life. There must be some meaning, some significance, some ideas out there—as much out there as the rocks and trees and dogs we encounter—that were we to grasp them fully would illuminate so much. It can only be by our grasping those meanings, each of us individually holding on to them, that we can communicate.

This, I believe, is the fear of being alone in the universe. Each one of us wants to believe that he or she is an individual, different from all others. Judge me not as one of a type. But we fear even more greatly that we are each of us so distinct, so individual, that we can never communicate fully with someone else.

Yet it is the most common and daily of our experiences that no one ever fully understands us. No one can understand exactly my thoughts. "That is not what I meant" is what we encounter all day long. We never get someone else to understand exactly what we mean—more or less, yes, well enough, yes. But it is shocking how often we are shocked to find that someone didn't grasp at all what we meant.

Yet in the face of this constant experience of not being understood, we continue to search for universals in meaning and for meaning standing apart from us.

Intentions

To communicate, to even want to communicate, we have to believe that the other person, or dog (or even cat) has a mental life. We ascribe intentions to them: they intend to understand me; they intend to disregard me; they want to eat; they want to sleep; they want to urinate; they're looking for ice cream; Yet often enough the other person has no thought, no intention that he or she is aware of. We ascribe intentions to others; they ascribe intentions to us; but that is our way of seeing each other. It need not be how the other is in the world at that time.

Our categorizing is built on our conceiving of others' intentions, too. A chair is an object that is useful for sitting on—but that's not enough. It is a man-made object that the maker or designer intended to be useful to sit on. We find a rock in the woods that's perfect for sitting on; it's just a rock that can be used as a chair, it's not a chair—unless we haul it home and say it's a chair. It's the saying, the intention, that makes it a chair.

Drawing meaning

We mean when we talk and gesture. We make meaning.

We also draw meaning. When you talk, when you gesture, I draw meaning.

We draw meaning from a dark cloud, from a girl's blushing, from a scent of water in the forest. But that's inference. Inference? There is no inferring but only knowing following hard on the sign.

How then do signs—a cloud, a blush, a scent—differ from our talking? It can't be, at least not generally, the intention, for we often do not intend to mean; we just mean.

What is the difference then? We talk, we gesture, we mean by using a learned, shared, system of acts that we agree are symbolic. We draw meaning from the clouds, but the clouds do not learn to mean. We draw meaning from the young girl's blushing, but she has not learned to blush to convey more than the act itself; the blusing is not symbolic. It more or less standardized use in a shared system that distinguishes our talking from signs.

We mean because we have the habit of drawing meaning. We believe that the other—person, dog, even cat—can draw meaning from our talking and gesturing.

We mean because we draw meaning.

Language shapes thought?

I agree with this, but I suspect I understand it very differently from you.

Our previous discussion leads me to conceive of thought in this saying as something quite broad, including not just language—for saying that language shapes language is trivial—but also mental imagery, and how we feel in connection with our actions, and our actions and reactions.

By "language" in this saying I understand not just or even primarily our vocabulary. Rather, it is the more fundamental part of our language, our grammar, that shapes how we see the world. Our grammar, which is transparent to most of us almost all the time, shapes how we think of the world. It shapes how we act, react, have emotions, conjure up images, conjure up words to describe our experiences. Indeed, our language shapes what we consider to be an experience. It gives us ready-made categories, categories that are reinforced by being shared in talking with others.

For example, the grammar of Indo-European languages focuses strongly on the thing-aspect of the world. We experience ourselves as

acting on and being acted upon by things; we experience ourselves as moving through things in space; we experience ourselves as wishing for or wanting things. The grammar of other languages, such as Nootka or Navajo, focuses more on the process/mass aspect of the world. It leads speakers of those languages to conceive of what they have done or are doing quite differently. But that's not right: they don't conceive of anything. They and we are just in the world, and we have experiences, and what those experiences are we try to describe with our languages. Much of our mental imagery is shaped by the grammar of our language, too. Mystics try to lead us to experiences beyond our language. We sometimes do have such experiences, and they stand out in our memory. We can be led to such experiences by learning another language. Even the vocabulary of another language can shape our experience.

Compare: In English we like things. In Spanish "to like" is reflexive, as if it were somehow passive. I say "I like dogs" and that is supposed to describe my experience. My friend says "Me gustan los perros," which literally translated is "me (indirect object) like (present tense, third person plural) the dogs," and to assume that we have the same experience is unfounded in any evidence. Yes, the experiences are similar, sufficiently similar that we can expect somewhat similar actions and reactions by me and my friend relating to dogs. If that were all there were to meaning, we could say they mean the same. But there is much more.

Language, principally but not only through grammar, shapes what counts as an experience, determines what counts as an experience, determines how we process sensory inputs into perceptions. In that sense, language shapes thought. But recalling the discussion so far, it hardly seems that all of our experience, all of our thinking is shaped by language. We can and do make new categories.

"Yes," I say as someone shows me a picture with a label in a book, "I see now that the creature I couldn't identify and saw only fleetingly last year in the forest was a javelina." Memory is certainly dependent on our being able to categorize our experience, but it is not entirely so. Calling up a memory is re-living the experience, but only as much of it as we paid attention to when we lived it the first time. Or rather, not as much of it as, but no more than we first paid attention to.

But that is not right. We often do not choose to pay attention to only part of our experience. And we can recall much more than what we were thinking or consciously paying attention to. A clock striking four o'clock may not register as four to us; but if asked to recall, often we can say, "One, two, three, four. Yes, it struck four times."

Thinking, meaning, and our bodies

To say that we think with our brains is our new way of conceiving our bodies, the modern version of the old conceit that we think with our stomach or that the seat of our mind is the liver.

Even today, we say that someone thinks with his stomach or thinks with her heart. These are true, though not exclusively true.

I think with all of my body. Meaning is in all of my body. I think "hammer" and I have a sensation in my hand of grasping my old hammer that lies on my workbench and my hand twitches ever so slightly. I think "cat" and I sense a nasty, cloying smell. I think "orange juice" and I have a taste in my mouth. I think siren and I can hear faintly an American-style siren sounding. Faintly. Not in the fullest extent of those previous experiences but enough that I know my thinking is in all of my body, the "meaning of those words" is in all of my body.

We think with all of our bodies. Our thoughts are not disembodied, most certainly not abstract. They do not sit in our brains any more than they used to sit in our stomachs. Our thoughts are instantiated in our bodies—though that way of talking makes them sound as if they have an abstract existence that precedes their instantiation. Rather, they are certain states of our bodies, as our bodies act and react.

I think, therefore I have a body.

Meaning and life

What is the meaning of one's life? This is to think of meaning as purpose, and then it's begging the question, assuming that whatever exists has a purpose.

But meaning in the sense of the meaning of words, of sentences, of grammatical constructions is embedded in one's life, one's very skin and muscle.

That is why taking someone's life is so awful: it destroys a whole fabric of meaning, a way to "see" the world, that can never be duplicated.

That is why a language going extinct is so awful: it destroys what people have come together to share as a way to see the world, that can never be duplicated.

Our stories

We form our experience, we face the world with the stories we make. "Why is it that stories only happen to people who can tell them?" But we all make stories, all day long. He walked away when I was talking, then started talking to that girl, so he's more interested in her than me. My mother toilet-trained me when I was only one-year old so I'm constipated a lot now. The sun rises in the east every day, even though I didn't see it today.

Art is not imitation but creation, and all of our life is art as we create our stories. We create form in the world; we do not find it in the world.

Beginnings and endings, these, too, are of our categorizing. There is no beginning or ending of this table, of this rock, of this discussion, of this foot race except as we mark them. Beginnings and endings are not "in nature" but in our marking off our experiences so we can remember them and talk about them, for all is flow and continuing.

We make up stories. We connnect the small pieces of our experience.

We see a ball thrown from one person passing behind another and landing on the ground. We say it continued in flight. We didn't see that: it was behind the other person. We didn't infer it. We just know it. That's the story we make up from the pieces of our experience.

This is why memory is so unreliable and malleable. We convert the bits. Others say we make inferences, but we have no awareness of doing that. Then someone gives us a better story, so we believe that's what happened. "It makes sense."

We correct our "mistaken impressions" by reasoning, conscious attempts to justify and correct our beliefs. But always that reasoning and justifying is relative to our most fundamental beliefs: things persist in time, they do not go out of existence then come back into existence, like the ball that is thrown.

Knowing

I hear a sound. It's a dog barking. A deep, bass sound, rounded volume. I know it's a big dog.

I hear yapping, high pitched, rapid, light, and I know it's a very small dog.

I never consciously learned to make these discriminations. I make no inference. I just know.

How is this different from what the mountain lions around my ranch do? They stay away from the sheep because my big sheep dog barks to keep them away: the sound is enough. If a chihuahua were barking, they would come and eat it. They know in a way that I cannot distinguish from my knowing.

Of course I may be wrong. I could be wrong about everything I know. So? We test our knowledge with reasoning.

Logic and meaning and knowing

More and more I think of meaning as the whole of what we understand with a word, phrase, or sentence: all of the web. The restricted sense of "meaning" that logicians use is an abstraction from that or even quite different in some way. It ignores all about the word except what it "officially" "denotes," that is, the shared meaning. It ignores all about a sentence except what "makes it true": the "truth-conditions," the way the world would have to be for it to be an accurate description (though not a complete description). That "denotes" is not just reference in the logician's usual approach but is very wide. "Beauty" denotes in this broader sense: the common, shared (at least shared enough) idea. There is also the problem that some words and sentences may have no common part of "meaning" shared by most people: overlapping but not transitive relating of ways to understand it. Yet we can often abstract from our own meanings, from our roughly similar actions and reactions, to stipulate sufficiently clearly a part of our meanings of a word or sentence for us to be able to reason together.

Then for a richer logical analysis, the logician can factor in more of what we share about a claim, for example, the ways we conceive of how we could come to know whether the claim is true, or the subject matter of the claim, or the referential content of the claim. To the

extent that we can come to some agreement that at least some claims have this as part of the web of their meaning, and to the extent that we can give some structural analysis of how those additional factors of meaning of claims relate to one another, we can develop a formal analysis of meaning. And with that we can trace some of the web of meaning of this or that word or sentence or collection of claims through their inferential relations. Meaning is not alone, a single instance, but a web of meaning, modeled in a formal logic by the inferential relations that are said to hold.

With the valid inferences we track the web of meanings imposed by our grammar. We then track the meanings of particular words and claims by stipulating meaning-axioms. We have the predicate "— is a dog," and we relate that to "— is a mammal" by requiring that the formal version of "If anything is a dog, then it's a mammal" be counted as true.

Reasoning together, we can investigate our beliefs. I saw ripples on the water and then thought that the water is not frozen. I can justify that with an informal inference: "There are ripples on the surface of the water; they move; frozen water is solid; the surface of what is solid does not move; therefore, the water is not frozen." Explicit inferences can help us see whether we are justified in this or that belief, though rarely can they be judged as only valid or invalid. This explicit inference I use to examine my belief that the water is not frozen is not what I thought at the time. Nor do I have reason to think that Chocolate reasoned to the conclusion that he should not try to jump over the barbed wire.

Unless out conception of human cognition takes account of the continuity of animal and human thinking, it will fall into a deep mistake. We have good reason to believe that animals "cognize" as we do: their actions if they were done by humans we would certainly call thinking, planning, intending, categorizing. Yet if we focus solely on human cognition, we assume no continuity. Then we parse our cognition, our thoughts in terms of what is "most human": our language. So thought has the structure of our language. And then we begin to model our conception of human cognition on our best logical analyses, which are based fundamentally on our language.

We have no such assumption for animals. They have no language. Have they a logic?

This misconstrues the role of logic. It takes logic to be the laws of thought. Rather, logic is a model of how we consciously reason using language. Some do take logic to be the structure of thought. But if it is, it's only of conscious linguistic thought in our kind of language. Beyond that there is no empirical evidence—and even that misconstrues evidence. We do not reason according to those laws—we should reason according to those laws. The laws of logic are prescriptive—relative to the way we see the world, the language we use. Or perhaps they are relative to how we must see the world. But we have no evidence other than linguistic that we must see the world as made up of things. Language does not shape all of our thought, but it certainly shapes our methods of reasoning.

In the end

Lying in bed, together, afterward. Two souls, united. At one. We couldn't be closer. So close, no communication could be closer. Only I am thinking . . . and she is thinking . . . I am thinking . . . and he is thinking Not a clue what the other is thinking. So we talk, and we seem to be farther from each other, but only because we realize we were never so close as we imagined. We talk, we negotiate, we try to be closer, as close as our emotions were.

She didn't understand me . . . He didn't understand me . . .

No? What an illusion to think she would understand you fully. What an illusion to think that he would understand you fully. We have to work every day to negotiate meaning and understanding.

Let us negotiate meaning so we can be good to each other.

Dedicated to Andrea Hosang

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