

# Primary Metaphor and Subjective Experience



Our subjective mental life is enormous in scope and richness. We make (subjective judgments about such abstract things as importance, similarity, difficulty, and morality, and we have subjective experiences of desire, affection, intimacy, and achievement. Yet, as rich as these experiences are, much of the way we conceptualize them, reason about them, and visualize them comes from other domains of experience. These other domains are mostly sensorimotor domains (Al, Lakoff and Johnson 1980; Lakoff 1993), as when we conceptualize understanding an idea (subjective experience) in terms of grasping an object (sensorimotor experience) and failing to Understand an idea as having it go right by us or over our heads. The cognitive mechanism for such conceptualizations is conceptual metaphor, which allows us to use the physical logic of grasping to reason about understanding.

Metaphor allows conventional mental imagery from sensorimotor domains to be used for domains of subjective experience. For example, we may form an image of something going by us or over our heads (sensorimotor experience) when we fail to understand (subjective experience). A gesture tracing the path of something going past us or over our heads can indicate vividly a failure to understand.

Conceptual metaphor is pervasive in both thought and language. It is hard to think of a common subjective experience that is not conventionally conceptualized in terms of metaphor. But why does such a huge range of conventional conceptual metaphor exist? How is it learned and what are the precise details? What is the mechanism by which we reason metaphorically? And which metaphors are universal (or at least widespread) and why?

We now have preliminary answers to such questions. They come from separate strands of investigation by Christopher Johnson (A 1), Joe Grady (A1), Srinu Narayanan (B2), and Mark Turner and Gilles Fauconnier (A7). This chapter weaves those strands into an integrated account of how we conceptualize and describe subjective experience.

## The Integrated Theory of Primary Metaphor

The overall theory of primary metaphor has four parts. We will look at each part in more detail below, but let us begin with a brief outline of each of the parts and how they fit together.

Part 1: Johnson's theory of conflation in the course of learning. For young children, subjective (nonsensorimotor) experiences and judgments, on the one hand, and sensorimotor experiences, on the other, are so regularly conflated undifferentiated in experience-that for a time children do not distinguish between the two when they occur together. For example, for an infant, the

subjective experience of affection is typically correlated with the sensory experience of warmth, the warmth of being held. During the period of conflation, associations are automatically built up between the two domains. Later, during a period of differentiation, children are then able to separate out the domains, but the cross-domain associations persist. These persisting associations are the mappings of conceptual metaphor that will lead the same infant, later in life, to speak of "a warm smile," "a big problem," and "a close friend."

Part 2: Grady's theory of primary metaphor. All complex metaphors are "molecular," made up of "atomic" metaphorical parts called primary metaphors. Each primary metaphor has a minimal structure and arises naturally, automatically, and unconsciously through everyday experience by means of conflation, during which cross-domain associations are formed. Complex metaphors are formed by conceptual blending. Universal early experiences lead to universal conflations, which then develop into universal (or widespread) conventional conceptual metaphors.

Part 3: Narayanan's neural theory of metaphor. The "associations" made during the period of conflation are realized neurally in simultaneous activations that result in permanent neural connections being made across the neural networks that define conceptual domains. These connections form the anatomical basis of source-to-target activations that constitute metaphorical entailments.

Briefly, an entailment at the neural level in Narayanan's theory occurs when some sequence of neural activations, A, results in a further neural activation, B. If B is connected to a neuronal cluster, C, in the network that characterizes another conceptual domain, then B can activate C. In the theory, this constitutes a metaphorical entailment: The activation of B is a literal entailment; C is "metaphorically" linked to B, since it is in another conceptual domain; therefore the activation of C is a metaphorical entailment.

Part 4: Fauconnier and Turner's theory of conceptual blending. Distinct conceptual domains can be coactivated, and under certain conditions connections across the domains can be formed, leading to new inferences. Such "conceptual blends" may be either conventional or wholly original. Grady suggests that conventional blends are the mechanism by which two or more primary metaphors can be brought together to form larger complex metaphors.

The integrated theory-the four parts together-has an overwhelming implication: We acquire a large system of primary metaphors automatically and unconsciously simply by functioning in the most ordinary of ways in the everyday world from our earliest years. We have no choice in this. Because of the way neural connections are formed during the period of conflation, we all naturally think using hundreds of primary metaphors.

Let us flesh out this theory with some examples.

### **The Sensorimotor Structuring of Subjective Experience**

In *Metaphors We Live By*, we gave evidence that conceptual metaphors are mappings across

conceptual domains that structure our reasoning, our experience, and our everyday language. We pointed to the existence of experientially grounded mappings, for example, More Is Up, as in "Prices rose" and "Stocks plummeted." In More Is Up, a subjective judgment of quantity is conceptualized in terms of the sensorimotor experience of verticality.

This correspondence between quantity and verticality arises from a correlation in our normal everyday experiences, like pouring more water into the glass and seeing the level go up. Early in development, Johnson hypothesizes, such correlations are "conflations" in which quantity and verticality are not seen as separate, and associations between them are formed. After the conflation period, according to Grady, the associations between More and Up and between Less and Down constitute a cross-domain mapping between the sensorimotor concept of verticality (the source domain) and the subjective judgment of quantity. Conventional linguistic metaphors like "Prices fell" are secondary manifestations of the primary cross-domain mapping.

### **Conflation**

Let us look a little more closely at Christopher Johnson's work on conflation. In research on metaphor acquisition in children, Johnson (Al, 1997b, c) studied the Shem corpus in detail. This is a well-known collection of the utterances of a child named Shem, recorded over the course of his language development (D, MacWhinney 1995). In an attempt to discover the age at which Shem acquired a commonplace metaphor, Johnson looked at Shem's use of the verb see. His objective was to discover the mechanism involved in the acquisition of metaphor. He had hypothesized conflation as a possible mechanism, and he wanted to find out whether there is indeed a stage of conflation prior to the use of the metaphor. His test case was Knowing Is Seeing, as in sentences like "I see what you're saying." In such metaphorical examples, knowing is the subject matter. Seeing is the metaphorical source domain used to conceptualize knowledge, but it is not used literally.

Johnson discovered that, prior to using metaphor, Shem went through a stage in which the knowing and seeing domains were conflated. Since we normally get most of our knowledge from seeing, a conflation of these domains would have been expected. In such conflations, the domains of knowing and seeing are coactive and the grammar of know is used with the verb see in a context in which seeing and knowing occur together—for instance, "Let's see what's in the box." Here, seeing what's in the box correlates with knowing what's in the box.

Metaphorical cases such as "I see what you mean," which do not involve literal seeing, are absent at this stage. Such metaphorical cases develop later according to Johnson's hypothesis. The conflations provide the basis for the learning of primary conceptual metaphors. Subsequent to the conflation experience, the child is able to differentiate the two conceptual domains. Only then does conceptual metaphor emerge. In the neural theory, the conflations are instances of coactivation of both domains, during which permanent neural connections between the domains develop.

In short, Johnson hypothesizes that conceptual metaphor emerges in two stages: (1) the

conflation stage, during which connections between coactive domains are established and the domains are not experienced as separate, and (2) the differentiation stage, during which domains that were previously coactive are differentiated into metaphorical sources and targets.

This does not, of course, imply that all linguistic metaphorical expressions are learned the way primary metaphors are. For example, illuminate, an extended instance of the general Knowing Is Seeing metaphor, is learned well after the conceptual primary metaphor Knowing Is Seeing is learned.

### **Grady's Theory of Primary Metaphor**

Johnson's theory of conflation is the basis for Grady's theory of primary metaphor. Early conflations in everyday experience should lead to the automatic formation of hundreds of primary metaphors that pair subjective experience and judgment with sensorimotor experience. Each primary metaphor, Grady hypothesizes, is simple, an atomic component of the molecular structure of complex metaphors.

Complex metaphors are formed from primary ones through conventional conceptual blending, that is, the fitting together of small metaphorical "pieces" into larger wholes. In the process, long-term connections are learned that coactivate a number of primary metaphorical mappings. Each such coactive structure of primary metaphors constitutes a complex metaphorical mapping. We will give examples of this process in Chapter 5, but first, let us look at a range of primary metaphors to get a feel for what they are like.

Table 4.1 shows a short, representative list of primary metaphors. In each case, we state the primary metaphorical mapping, distinguish its sensorimotor component from its subjective component, and describe the primary experiences of domain conflation that give rise to it. The examples are derived from (Al, Grady 1997).

### **Primary Metaphor Within Narayanan's Neural Theory**

In Chapter 3, we briefly described Sridhar Narayanan's neural theory of metaphor. Though Narayanan's model did not learn metaphors, the recruitment learning mechanism in Bailey's model ought, with suitable modification, to be able to learn metaphorical connections across domains. Let us consider how such a model might work in the case of More Is Up.

TABLE 4.1 Representative Primary Metaphors

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<i>Affection Is Warmth</i>	
Subjective Judgment:	Affection
Sensorimotor Domain:	Temperature
Example:	"They greeted me <i>warmly</i> ."
Primary Experience:	Feeling warm while being held affectionately
<i>Important Is Big</i>	
Subjective Judgment:	Importance
Sensorimotor Domain:	Size
Example:	"Tomorrow is a <i>big</i> day."
Primary Experience:	As a child, finding that big things, e.g., parents, are important and can exert major forces on you and dominate your visual experience
<i>Happy Is Up</i>	
Subjective Judgment:	Happiness
Sensorimotor Domain:	Bodily orientation
Example:	"I'm feeling <i>up</i> today."
Primary Experience:	Feeling happy and energetic and having an upright posture (correlation between affective state and posture)
<i>Intimacy Is Closeness</i>	
Subjective Experience:	Intimacy
Sensorimotor Experience:	Being physically close
Example:	"We've been <i>close</i> for years, but we're beginning to <i>drift apart</i> ."
Primary Experience:	Being physically close to people you are intimate with
<i>Bad Is Stinky</i>	
Subjective Judgment:	Evaluation
Sensorimotor Domain:	Smell
Example:	"This movie <i>stinks</i> ."
Primary Experience:	Being repelled by foul-smelling objects (correlation between evaluative and olfactory experience)
<i>Difficulties Are Burdens</i>	
Subjective Judgment:	Difficulty
Sensorimotor Domain:	Muscular exertion
Example:	"She's <i>weighed down</i> by responsibilities."
Primary Experience:	The discomfort or disabling effect of lifting or carrying heavy objects

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*More Is Up*

Subjective Judgment: Quantity

Sensorimotor Domain: Vertical orientation

Example: "Prices are *high*."

Primary Experience: Observing rise and fall of levels of piles and fluids as more is added or subtracted

*Categories Are Containers*

Subjective Judgment: Perception of kinds

Sensorimotor Domain: Space

Example: "Are tomatoes *in* the fruit or vegetable category?"

Primary Experience: Observing that things that go together tend to be in the same bounded region (correlation between common location and common properties, functions, or origins)

*Similarity Is Closeness*

Subjective Judgment: Similarity

Sensorimotor Domain: Proximity in space

Example: "These colors aren't quite the same, but they're *close*."

Primary Experience: Observing similar objects clustered together (flowers, trees, rocks, buildings, dishes)

*Linear Scales Are Paths*

Subjective Judgment: Degree

Sensorimotor Domain: Motion

Example: "John's intelligence *goes way beyond* Bill's."

Primary Experience: Observing the amount of progress made by an object in motion (correlation between motion and scalar notion of degree)

*Organization Is Physical Structure*

Subjective Judgment: Abstract unifying relationships

Sensorimotor Domain: Experience of physical objects

Example: "How do the *pieces* of this theory *fit together*?"

Primary Experience: Interacting with complex objects and attending to their structure (correlation between observing part-whole structure and forming cognitive representations of logical relationships)

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TABLE 4.1 (continued)

*Help Is Support*

Subjective Judgment: Assistance  
 Sensorimotor Domain: Physical support Example: "Support your local charities."  
 Primary Experience: Observing that some entities and people require physical support in order to continue functioning

*Time Is Motion*

Subjective Judgment: The passage of time  
 Sensorimotor Domain: Motion  
 Example: "Time *flies*."  
 Primary Experience: Experiencing the passage of time as one moves or observes motion

*States Are Locations*

Subjective Judgment: A subjective state  
 Sensorimotor Experience: Being in a bounded region of space  
 Example: "I'm *close to* being *in* a depression and the next thing that goes wrong will *send me over the edge*."  
 Primary Experience: Experiencing a certain state as correlated with a certain location (e.g., being cool under a tree, feeling secure in bed)

*Change Is Motion*

Subjective Judgment: Experiencing a change of state  
 Sensorimotor Domain: Moving  
 Example: "My car has *gone from* bad *to* worse lately."  
 Primary Experience: Experiencing the change of state that goes with the change of location as you move

*Actions Are Self-Propelled Motions*

Subjective Experience: Action  
 Sensorimotor Experience: Moving your body through space  
 Example: "I'm *moving* right along on the project."  
 Primary Experience: The common action of moving yourself through space, especially in the early years of life

*Purposes Are Destinations*

Subjective Judgment: Achieving a purpose  
 Sensorimotor Experience: Reaching a destination

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Example: "He'll ultimately be successful, but he isn't *there* yet."  
Primary Experience: Reaching destinations throughout everyday life and thereby achieving purposes (e.g., if you want a drink, you have to go to the water cooler)

*Purposes Are Desired Objects*

Subjective Judgment: Achieving a purpose  
Sensorimotor Domain: Object manipulation  
Example: "I saw an opportunity for success and *grabbed* it."  
Primary Experience: Grasping a desired object (correlation between satisfaction and holding a desired physical object)

*Causes Are Physical Forces*

Subjective Judgment: Achieving results  
Sensorimotor Domain: Exertion of force  
Example: "They *pushed* the bill *through* Congress."  
Primary Experience: Achieving results by exerting forces on physical objects to move or change them

*Relationships Are Enclosures*

Subjective Experience: An interpersonal relationship  
Sensorimotor Experience: Being in an enclosure  
Example: "We've been *in* a *close* relationship for years, but it's beginning to seem *confining*."  
Primary Experience: Living in the same enclosed physical space with the people you are most closely related to

*Control Is Up*

Subjective Judgment: Being in control  
Sensorimotor Domain: Vertical orientation  
Example: "Don't worry! I'm *on top of* the situation."  
Primary Experience: Finding that it is easier to control another person or exert force on an object from above, where you have gravity working with you

*Knowing Is Seeing*

Subjective Judgment: Knowledge  
Sensorimotor Domain: Vision

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TABLE 4.1 (continued)

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Example: "I *see* what you mean."  
Primary Experience: Getting information through vision

*Understanding Is Grasping*

Subjective Judgment: Comprehension  
Sensorimotor Domain: Object manipulation  
Example: "I've never been able to *grasp* transfinite numbers."  
Primary Experience: Getting information about an object by grasping and manipulating it

*Seeing Is Touching*

Subjective Judgment: Visual perception  
Sensorimotor Domain: Touch  
Example: "She *picked* my face *out of* the crowd."  
Primary Experience: Correlation between the visual and tactile exploration of objects

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Experiencing the More Is Up correlation over and over should lead to the establishment of connections between those neural networks in the brain characterizing More in the domain of

quantity and those networks characterizing Up in the domain of verticality. In the model, such neural connections would carry out the function of a conceptual mapping between More and Up and make it possible (though not necessary) for the words for verticality (such as rise, fall, skyrocket, plummet, high, low, dip, and peak) to be used conventionally to indicate quantity as well.

Such a metaphor is embodied in three important ways. First, the correlation arises out of our embodied functioning in the world, where we regularly encounter cases in which More correlates with Up. Second, the source domain of the metaphor comes from the body's sensorimotor system. Finally, the correlation is instantiated in the body via neural connections.

Here are the characteristics of primary metaphor from a neural modeling perspective:

- A primary metaphor like More Is Up arises via a neurally instantiated correlation between (1) a sensorimotor operation (such as a determination of a degree or change of verticality) and (2) a subjective experience or judgment (such as a judgment of degree or change of quantity). The conflation of these two is the simultaneous activation of their respective neural networks.
- Neural connections are established in early childhood during such a period of conflation, when the networks characterizing the domains are coactivated in everyday experience, as when we pile more books on the desk and their height goes up. The sensorimotor networks perform complex inferences; for example, if something shoots up, it moves upward rapidly and in a short time is much higher than before. Via the neural connections, the results of these inferences are "projected" from the sensorimotor source network (verticality) to the subjective judgment target network (quantity).

Here's how that projection might work. In the Narayanan model, activation flows both ways between the source and target networks. For example, a Decrease in the quantity-domain network is connected with Motion Downward in the verticality-domain network. In an example like "Prices hit bottom," prices activates the quantity-domain network, which sends activation to the corresponding elements in the source-domain verticality network. Hit bottom activates the source-domain inference mechanism that computes that the entity hit bottom, went as far down as it can go. Activation then flows back to the quantity-domain network indicating Maximum Negative Change. Narayanan (B2, 1997a, b) has other examples.

Via this mechanism, reasoning about vertical motion in the spatial domain is thus used to reason about quantity. But the reverse is not true. We do not reason about verticality in terms of quantity. If activation flows both ways, why are inferences and language about quantity not mapped onto verticality? Why, for example, does too much not mean too high? Within Narayanan's theory, the explanation would go as follows:

- The theory assumes that a sensorimotor neural system has more inferential connections, and therefore a greater inferential capacity, than a neural system characterizing subjective experience in itself. This is the source of the asymmetry of primary conceptual metaphor. The asymmetry

arises because results of inferences flow in one direction only, from the sensorimotor domain to the domain of subjective judgment. Because of the one-way flow of activation during the conflation period, long-term one-way connections are established via recruitment learning. It is the direction of inference that determines what is source and what is target. Sensorimotor inferences are performed in the sensorimotor domain (e.g., where inferences about verticality are computed). The results of those inferences flow from the sensorimotor domain to the domain of abstract subjective experience via the neural connections.

- Conventional language connected to a concept in the sensorimotor source network may develop a connection as well to the corresponding target-domain network. For example, the phonological form *rise*, which names a motion upward in physical space, may also name, by virtue of the metaphor, an increase in quantity as well. This process may also apply to imagery. Mental images associated with source-domain entities can be activated and thereby associated with target-domain entities.
- The neural connections between the domains, which constitute the metaphorical mapping, may or may not be activated. Indeed they may be inhibited, perhaps by the choice of another metaphor. The results of source-domain inferences flow to the target domain only when the connections are activated.
- When both domains are active, imagery associated with source-domain entities can be activated and thereby associated with the target-domain entities neurally connected to them.

### **The Embodiment of Primary Metaphor**

The neural perspective provided by Feldman's NTI, paradigm (B2, Bailey et al. 1997) and by Narayanan's and Bailey's models together gives a clear idea of what it means for metaphor to be embodied. It provides a neural learning mechanism and a precise neural computational mechanism for acquiring the metaphors and carrying out metaphorical inferences.

Primary metaphors are part of the cognitive unconscious. We acquire them automatically and unconsciously via the normal process of neural learning and may be unaware that we have them. We have no choice in this process. When the embodied experiences in the world are universal, then the corresponding primary metaphors are universally acquired. This explains the widespread occurrence around the world of a great many primary metaphors. Copious examples will be provided throughout this book.

Universal conceptual metaphors are learned; they are universals that are not innate. These conceptual universals contribute to linguistic universals, for example, how time is expressed in languages around the world (see Chapter 10). There appear to be at least several hundred such widespread, and perhaps universal, metaphors.

It is also important to stress that not all conceptual metaphors are manifested in the words of a language. Some are manifested in grammar, others in gesture, art, or ritual. These nonlinguistic

metaphors may, however, be secondarily expressed through language and other symbolic means.

Contrary to long-standing opinion about metaphor, primary metaphor is not the result of a conscious multistage process of interpretation. Rather it is a matter of immediate conceptual mapping via neural connections.

### **The Inevitability of Primary Metaphor**

If you are a normal human being, you inevitably acquire an enormous range of primary metaphors just by going about the world constantly moving and perceiving. Whenever a domain of subjective experience or judgment is coactivated regularly with a sensorimotor domain, permanent neural connections are established via synaptic weight changes. Those connections, which you have unconsciously formed by the thousands, provide inferential structure and qualitative experience activated in the sensorimotor system to the subjective domains they are associated with.

Our enormous metaphoric conceptual system is thus built up by a process of neural selection. Certain neural connections between the activated source- and target-domain networks are randomly established at first and then have their synaptic weights increased through their recurrent firing. The more times those connections are activated, the more the weights are increased, until permanent connections are forged.

### **Metaphor as Cross-Domain Conceptual Mapping**

Primary metaphors, from a neural perspective, are neural connections learned by coactivation. They extend across parts of the brain between areas dedicated to sensorimotor experience and areas dedicated to subjective experience. The greater inferential complexity of the sensory and motor domains gives the metaphors an asymmetric character, with inferences flowing in one direction only.

From a conceptual point of view, primary metaphors are cross-domain mappings, from a source domain (the sensorimotor domain) to a target domain (the domain of subjective experience), preserving inference and sometimes preserving lexical representation. Indeed, the preservation of inference is the most salient property of conceptual metaphors.

We will be using two conventional notations for conceptual metaphors interchangeably throughout the remainder of this book. The first is the one we have used in this chapter, for example, Similarity Is Proximity, with the target domain in subject position (Similarity), the source domain in predicate nominal position (Proximity), and the mapping represented by the capitalized copula (Is). This takes the superficial form of an English sentence just to make it easier to read. But technically, it is intended not as a sentence in English, but as a name for a metaphorical mapping across conceptual domains.

When we want to stress the structure of the mapping, we will use an alternative notation, for example, Proximity - Similarity, where the source domain (Proximity) is to the left of the arrow,

the target domain (Similarity) is to the right of the arrow, and the arrow indicates the cross-domain mapping. In both cases, the notation is just a name for a mapping, that is, a name for a reality at either the neural or conceptual level.

### **Can We Think Without Metaphor?**

The pervasiveness of primary conceptual metaphor in no way denies the existence of nonmetaphorical concepts. Quite the contrary. As we have seen, there is a vast system of literal concepts, for example, the basic-level concepts and the spatial-relations concepts. All basic sensorimotor concepts are literal. Cup (the object you drink from) is literal. Grasp (the action of holding) is literal. In (in its spatial sense) is literal.

Concepts of subjective experience and judgment, when not structured metaphorically, are literal; for example, "These colors are similar" is literal, while "These colors are close" uses the metaphor Similarity Is Proximity. "He achieved his purpose" is literal, while "He got what he wanted most" can be metaphorical. Without metaphor, such concepts are relatively impoverished and have only a minimal, "skeletal" structure. A primary metaphor adds sensorimotor inferential structure. As we shall see in the next chapter, such sensorimotor inferential capacity is considerably multiplied when two or more primary metaphors are combined to create complex conceptual metaphors. For example, A Purposeful Life Is A Journey lets us use our rich knowledge of journeys to derive rich inferences about purposeful lives.

Can we think about subjective experience and judgment without metaphor? Hardly. If we consciously make the enormous effort to separate out metaphorical from nonmetaphorical thought, we probably can do some very minimal and unsophisticated nonmetaphorical reasoning. But almost no one ever does this, and such reasoning would never capture the full inferential capacity of complex metaphorical thought.

Consider the Similarity Is Proximity metaphor, in which Similarity Is Spatial Closeness and Difference Is Spatial Distance. It is very hard for us to imagine thinking about similarity without this metaphor. Mathematical accounts of similarity typically set up a metaphorical "similarity space" in which similar things are close in that space and dissimilar things are at a distance. Similarity metrics use the same metaphor. Without such metaphors, abstract thought is virtually impossible.

But even if nonmetaphorical thought about subjective experience and judgment is occasionally possible, it almost never happens. We do not have a choice as to whether to acquire and use primary metaphor. Just by functioning normally in the world, we automatically and unconsciously acquire and use a vast number of such metaphors. Those metaphors are realized in our brains physically and are mostly beyond our control. They are a consequence of the nature of our brains, our bodies, and the world we inhabit.

### **Summary**

There are hundreds of primary metaphors. Together these metaphors provide subjective experience with extremely rich inferential structure, imagery, and qualitative "feel," when the networks for subjective experience and the sensorimotor networks neurally connected to them are coactivated. They also allow a great many of the words of sensorimotor experience to be used to name aspects of metaphorically conceptualized subjective experience.

Narayanan's neural theory of metaphor gives us an account of how primary metaphors are learned, an explanation of why we have the ones we have, and a neural mechanism for metaphorical inference. We have a system of primary metaphors simply because we have the bodies and brains we have and because we live in the world we live in, where intimacy does tend to correlate significantly with proximity, affection with warmth, and achieving purposes with reaching destinations.

# The Anatomy of Complex Metaphor

## The Construction of Complex Metaphors

Primary metaphors are like atoms that can be put together to form molecules. A great many of these complex molecular metaphors are stable-conventionalized, entrenched, fixed for long periods of time. They form a huge part of our conceptual system and affect how we think and what we care about almost every waking moment. Beyond that, they structure our dreams (Al, Lakoff 1997) and form the bases of new metaphorical combinations, both poetic and ordinary (Al, Lakoff and Turner 1989; A7, Turner 1995).

This chapter is about how complex, everyday metaphors are built out of primary metaphors plus forms of commonplace knowledge: cultural models, folk theories, or simply knowledge or beliefs that are widely accepted in a culture. Let us begin with a common complex metaphor that affects most people in Western culture in order to see how it is built up from some of the primary metaphors and image schemas we have examined earlier.

### **A Purposeful Life Is a Journey**

In our culture, there is a profoundly influential folk model according to which people are supposed to have a purpose in life, and there is something wrong with you if you don't. If you are purposeless, you are seen as "lost," "without direction" in your life, as "not knowing which way to turn." Having purpose in your life gives you "goals to reach" and forces you to map out a way to reach those goals, to see what other intermediate goals you would have to reach to get there, to contemplate what might be standing in your way, how to get around obstacles, and so on.

The result is a complex metaphor that affects us all, the metaphor A Purposeful Life Is A Journey, which is built up out of primary metaphors in the following way. Start with the cultural belief:

People are supposed to have purposes in life, and they are supposed to act so as to achieve those purposes.

The primary metaphors are:

Purposes Are Destinations

Actions Are Motions

Turn this into a metaphorical version of that cultural belief:

People are supposed to have destinations in life, and they are supposed to move so as to reach those destinations.

These are then combined with a simple fact, namely,

A long trip to a series of destinations is a journey.

When these are taken together, they entail a complex metaphorical mapping:

A PURPOSEFUL LIFE IS A JOURNEY METAPHOR

A Purposeful Life Is A Journey

A Person Living A Life Is A Traveler

Life Goals Are Destinations

A Life Plan Is An Itinerary

Using the equivalent arrow notation, this can be expressed alternatively in the form:

Journey	→	Purposeful Life
Traveler	→	Person Living A Life
Destinations	→	Life Goals
Itinerary	→	Life Plan

This mapping defines a complex metaphor made up of four submetaphors. It is a consequence of (a) the cultural belief that everyone is supposed to have a purpose in life, (b) the primary metaphors Purposes Are Destinations and Action Is Motion, and (c) the fact that a long trip to a series of destinations is a journey.

The full import of this metaphor for our lives arises through its entailments. Those entailments are consequences of our commonplace cultural knowledge about journeys, especially:

A journey requires planning a route to your destinations.

Journeys may have obstacles, and you should try to anticipate them.

You should provide yourself with what you need for your journey.

As a prudent traveler you should have an itinerary indicating where you are supposed to be at what times and where to go next. You should always know where you are and where you are going next.

The three submappings of the A Purposeful Life Is A Journey metaphor turn this knowledge about travel into guidelines for life:

A purposeful life requires planning a means for achieving your purposes.

Purposeful lives may have difficulties, and you should try to anticipate them.

You should provide yourself with what you need to pursue a purposeful life

As a prudent person with life goals you should have an overall life plan indicating what goals you are supposed to achieve at what times and what goals to set out to achieve next. You should always know what you have achieved so far and what you are going to do next.

We have presented the logic of these mappings and their entailments in a linear sequential fashion. Though this is necessary for explication, it can be misleading. From a neural perspective, what we have discussed in a linear fashion arises from parallel connections and the passing of neural activations in parallel. The internal logic of the metaphor, rather than operating sequentially, is activated and computed in parallel.

It is important to bear in mind that conceptual metaphors go beyond the conceptual; they have consequences for material culture. For example, the metaphor A Purposeful Life Is A Journey defines the meaning of an extremely important cultural document, the Curriculum Vitae (from the Latin, "the course of life"). The CV indicates where we have been on the journey and whether we are on schedule. We are supposed to be impressed with people who have come very far very fast and less impressed with people who are "behind schedule." People who have not "found a direction in life" are seen as being in need of help. We are supposed to feel bad for people who have "missed the boat," who have waited too long to start on the journey. And we are supposed to envy those who have gotten much farther than we have much faster.

If you have any doubt that you think metaphorically or that a culture's metaphors affect your life, take a good look at the details of this metaphor and at how your life and the lives of those around you are affected by it every day. As you do so, recall that there are cultures around the world in which this metaphor does not exist; in those cultures people just live their lives, and the very idea of being without direction or missing the boat, of being held back or getting bogged down in life, would make no sense.

### **The Grounding of the Whole Is the Grounding of Its Parts**

The complex metaphor we have just examined, A Purposeful Life Is A Journey, does not have an experiential grounding of its own. There is no correlation between purposeful lives and journeys in our everyday experience. Does this mean that this metaphor has no grounding of any kind?

Not at all. It is composed of primary metaphors, as we have seen. Those primary metaphors are grounded. For example, Purposes Are Destinations and Action Are Motions each have their own experiential grounding. That grounding is preserved when the primary metaphors are

combined into the larger complex metaphor. The grounding of A Purposeful Life Is A Journey is given by the individual groundings of each component primary metaphor.

### **Love Is a Journey**

Complex metaphors can be used as the basis for even more complex metaphors. There is not only structure within a single complex metaphor. There is also structure in the metaphorical conceptual system as a whole. The neural connectivity of the brain makes it natural for complex metaphorical mappings to be built out of preexisting mappings, starting with primary metaphors. Let us consider one more example, a metaphor that builds on A Purposeful Life Is A Journey.

In our culture, people in a long-term love relationship are expected not only to have individual purposes in life, but to have a joint purpose in life. Not only is each individual life a journey, but a couple's life together is also supposed to be a journey to common goals. Each individual life journey is difficult enough, but the task of choosing common goals and of pursuing them together in spite of differences is that much more difficult. The result is a complex metaphor that concerns the difficulties faced in setting and pursuing common goals by people in a long-term love relationship.

In this Love Is A Journey metaphor, the lovers' common goals in life are destinations, the lovers are travelers, and their difficulties are impediments to motion. But what about the love relationship? Recall the primary metaphors A Relationship Is An Enclosure and Intimacy Is Closeness. When joined together, these form the complex metaphor An Intimate Relationship Is A Close Enclosure. Given that the lovers are travelers in this metaphor, the most natural close enclosure is a vehicle of some sort. The complex metaphor that results from putting together all these parts and deriving entailments is:

### **THE LOVE IS A JOURNEY METAPHOR**

Love Is A Journey

The Lovers Are Travelers

Their Common Life Goals Are Destinations

The Relationship Is A Vehicle

Difficulties Are Impediments To Motion

In our culture, this is a well-entrenched, stable, conventionalized understanding of a love relationship and the difficulties involved in setting and achieving joint purposes. This conceptual metaphor is reflected in conventional expressions:

Look how far we've come. It's been a long, bumpy road. We can't turn back now. We're at a crossroads. We're heading in different directions. We may have to go our separate ways. The

relationship is not going anywhere. We're spinning our wheels. The marriage is out of gas. Our relationship is off the track. The marriage is on the rocks. We're trying to keep the relationship afloat. We may have to bail out of this relationship.

The Love Is A Journey metaphor systematically links the literal the meanings of these expressions about travel to corresponding meanings in the domain of love.

### **Metaphors Are Used to Reason With**

Perhaps the most important thing to understand about conceptual metaphors is that they are used to reason with. The Love Is a journey mapping does not just permit the use of travel words to speak of love. That mapping allows forms of reasoning about travel to be used in reasoning about love. It functions so as to map inferences about travel into inferences about love, enriching the concept of love and extending it to love-as-journey.

Consider, for example, four of the things you know about dead-end streets:

1. A dead-end street leads nowhere.
2. Suppose two travelers have common destinations they are trying to reach. A dead-end street will not allow them to keep making continuous progress toward those destinations.
3. The dead-end street constitutes an impediment to the motion of the vehicle and continuing the present course of the vehicle is impossible.
4. Traveling in a vehicle toward given destinations takes effort, and if the travelers have been on a dead-end street, then their effort has been wasted.

Now take the Love Is A Journey mapping, repeated here for convenience:

Love Is A Journey

The Lovers Are Travelers

Their Common Life Goals Are Destinations

The Love Relationship Is A Vehicle

Difficulties Are Impediments To Motion

and apply it to the italicized expressions in the travel knowledge given in 1 through 4. You then get 1' through 4', which are about love relationships:

- 1'. A "dead-end street" doesn't allow the pursuit of common life goals.
- 2'. Suppose two lovers have common life goals they are trying to achieve. A "dead-end street"

will not allow them to keep making continuous progress toward those life goals.

3'. The "dead-end street" constitutes a difficulty for the love relationship, and continuing the present course of the love relationship is impossible.

4'. Functioning in a love relationship toward given life goals takes effort, and if the lovers have been on a "dead-end street," then effort has been wasted.

Of course, love does not have to be conceptualized as a journey. Indeed, in many cultures, there is no such conventional conceptualization of love. But in America, it is common to conceptualize love this way automatically, typically without conscious choice or reflection. The Love Is A Journey metaphor imposes the inferential structure of travel on a love relationship. And when one reasons about love in terms of travel, one talks about it in those terms.

The Love Is A Journey mapping states a generalization over both inference patterns and language. It maps inference patterns about travel like those in 1-4 onto inference patterns about love like those in 1'-4'. It also maps expressions like dead-end street, stuck, spinning one's wheels, and bail out, with meanings in the travel domain, onto occurrences of those expressions with meanings in the domain of love. In short, the same mapping states a generalization over two kinds of data-inferential data and linguistic data.

Is this mapping cognitively real? That is, is it a live correspondence in the conceptual systems of speakers or just an after-the-fact analysis of something that may have been alive in the past but is not now, something that is merely a linguistic remnant of a now-dead conceptual mapping? One type of evidence that conventionalized everyday conceptual metaphors are alive is that we can use them in a systematic way to understand new extended metaphors automatically and without conscious reflection.

### **Novel Metaphor**

Shortly after the Love Is A Journey mapping was discovered, there appeared a song lyric that goes, "We're driving in the fast lane on the freeway of love." Most people have no trouble in grasping immediately what this means. Indeed, they may not even notice that it required a process of interpretation. How is this possible?

If we are right that there is, in our conceptual system, a cognitively real conceptual mapping of the sort discussed above, then this novel expression would make sense as a systematic extension of that mapping. Love here is also being conceptualized as a journey. Here too, there are inferences from the domain of travel to the domain of love. And here too the language reflects that love is being conceptualized in terms of travel.

The question arises as to whether this novel metaphor is really an instance of the same mapping. It is easy to show that it is. The same mapping applies to inference patterns about driving in fast lanes on freeways and yields inference patterns about love relationships. Consider the following inference pattern about driving in the fast lane.

FL: Travelers in a vehicle driving in the fast lane make a lot of progress in a short time. But there is sometimes a danger that the vehicle will be wrecked and the travelers hurt. Yet the travelers find both the speed of the vehicle and the danger exciting.

Apply the following parts of the Love Is A Journey mapping to FL:

The Lovers Are Travelers

The Love Relationship Is A Vehicle

The result is FL':

FL': Lovers in a love relationship "driving in the fast lane" make a lot of progress in a short time. But there is sometimes a danger that the relationship will be wrecked and the lovers hurt. Yet the lovers find both the speed of the relationship and the danger exciting.

It is not just that terms for travel are being used to talk about love, as they are in everyday use of the Love Is A Journey metaphor. What is significant is that the same mapping is used to map the new inference patterns about travel onto inference patterns about love. That's what it means for this metaphorical expression to be a novel instance of the same Love Is A Journey metaphorical mapping.

### **Metaphorical Idioms and Mental Imagery**

A significant portion of the linguistic expressions of the Love Is A Journey metaphor are idioms: spinning one's wheels, off the track, on the rocks. In traditional linguistics, idioms were seen as arbitrary-sequences of words that can mean anything at all. But these idioms are not arbitrary. Their meaning is motivated by the metaphorical mapping and certain conventional mental images. For example, consider the sentence "We're spinning our wheels in this relationship." There is a rich conventional mental image associated with the idiom spinning one's wheels, and we have a lot of knowledge about this image:

The wheels are the wheels of a car. The wheels are spinning, but the car is not moving. The car is stuck (either on ice, or in mud, sand, or snow). The travelers want the car to be moving so that they can make progress on their journey. They are not happy that it is stuck. They are putting a lot of energy into getting the car unstuck, and they feel frustrated.

The Love Is A Journey metaphor maps this knowledge about the conventional image onto knowledge about the love relationship. Since the car is a vehicle, the submapping A Love Relationship Is A Vehicle applies to the car. But since the Love Is A Journey mapping does not mention wheels, knowledge about the wheels themselves and their spinning is not mapped. The medium in which the car is stuck (the ice, mud, etc.) does not get mapped either. Here is the knowledge that gets mapped:

The relationship is stuck. The lovers want the relationship to be functioning so that they can

continue making progress toward common life goals. They are not happy that the relationship is stuck. They are putting a lot of energy into getting the relationship unstuck, and they feel frustrated.

This is what it means to be spinning one's wheels in a relationship.

We will refer to such idioms as "metaphorical idioms." Each metaphorical idiom comes with a conventional mental image and knowledge about that image. A conventional metaphorical mapping maps that source-domain knowledge onto target-domain knowledge.

It has often been observed that in idioms, the meaning of the whole is not simply a function of the meaning of the parts. That is true in the case of metaphorical idioms. But that does not mean that the meaning of the parts of the idiom plays no cognitive role in the meaning of the whole idiom. In the above example, the meanings of spinning and wheels play an important cognitive role. They jointly evoke the conventional image and knowledge about it. In the image, wheels designate the wheels of the car and spinning designates what the wheels are doing. But the cognitive function of the meanings of these parts of the idiom ends there. The Love Is A journey mapping maps a portion of the knowledge evoked, but not the portion about the wheels and their spinning.

The cognitive reality of such images and such knowledge mappings has been established in a series of experiments by Gibbs and his coworkers (A2, Gibbs 1994).

Metaphorical idioms are philosophically important in a number of ways. First, they show something important about meaning, namely, that words can designate portions of conventional mental images.

Second, they show that mental images do not necessarily vary wildly from person to person. Instead, there are conventional mental images that are shared across a large proportion of the speakers of a language.

Third, they show that a significant part of cultural knowledge takes the form of conventional images and knowledge about those images. Each of us appears to have thousands of conventional images as part our long-term memory.

Fourth, they open the possibility that a significant part of the lexical differences across languages may have to do with differences in conventional imagery. The same metaphorical mappings applied to different images will give rise to different linguistic expressions of those mappings.

Fifth, they show dramatically that the meaning of the whole is not a simple function of the meanings of the parts. Instead, the relationship between the meaning of the parts and the meaning of the whole is complex. The words evoke an image; the image comes with knowledge; conventional metaphors map appropriate parts of that knowledge onto the target domain; the result is the meaning of the idiom. Thus, a metaphorical idiom is not just a linguistic expression

of a metaphorical mapping. It is the linguistic expression of an image plus knowledge about the image plus one or more metaphorical mappings. It is important to separate that aspect of the meaning that has to do with the general metaphorical mapping from that portion that has to do with the image and knowledge of the image.

### **Why the Term Metaphor?**

We can now see why it is appropriate to use the term metaphor for both everyday and novel cases. The reason is the same mappings cover both kinds of cases. Traditionally, only novel cases were called metaphors. But as Lakoff and Turner (A1, 1989) show in great detail in their study of poetic metaphor, the theory of the novel cases is the same as the theory of the conventional cases. Thus, the theory of conceptual cross-domain mapping is exactly the theory needed to account for traditional cases of novel metaphorical expressions. It is thus best called a theory of metaphor.

### **Metaphorical Pluralism: Multiple Metaphors for a Single Concept**

So far, we have only discussed cases of a single conceptual metaphor for a single concept, for example, the journey metaphor for love. But abstract concepts are typically structured by more than one conventional metaphor. Let us look at how the concept of love is structured by multiple metaphors.

Gibbs (A2, 1994) gives a protocol taken from his research on the conceptualization of love. Here a young woman describes, first, her definition of love and, second, her description of her first love experience:

The overall concern for another person. Sharing of yourself but not giving yourself away. Feeling like you are both one, willing to compromise, knowing the other person well with excitement and electrical sparks to keep you going.

It kicked me in the head when I first realized it. My body was filled with a current of energy. Sparks filled through my pores when I thought of him or things we'd done together. Though I could not keep a grin off my face, I was scared of what this really meant. I was afraid of giving myself to someone else. I got that feeling in my stomach that you get the first time you make eye contact with someone you like. I enjoyed being with him, never got tired of him. I felt really overwhelmed, excited, comfortable, and anxious. I felt warm when I heard his voice, the movements of his body, his smell. When we were together, we fit like a puzzle, sharing, doing things for each other, knowing each other, feeling each other breathe.

Our experience of love is basic-as basic as our experience of motion or physical force or objects. But as an experience, it is not highly structured on its own terms. There is some literal (i.e., nonmetaphorical) inherent structure to love in itself: a lover, a beloved, feelings of love, and a relationship, which has an onset and often an end point.

But that is not very much inherent structure. The metaphor system gives us much more. When

we comprehend the experience of love, when we think and talk about love, we have no choice but to conceptualize mostly in terms of our conventional metaphors-to conceptualize it not on its own terms, but in terms of other concepts such as journeys and physical forces. When we reason and talk about love, we import inferential structure and language from those other conceptual domains. The cognitive mechanism we use is cross-domain conceptual mapping. The neural mechanism, so far as we can estimate at present, is one like that in Narayanan's neural theory.

Each mapping is rather limited: a small conceptual structure in a source domain mapped onto an equally small conceptual structure in the target domain. For a rich and important domain of experience like love, a single conceptual mapping does not do the job of allowing us to reason and talk about the experience of love as a whole. More than one metaphorical mapping is needed.

We (Al, Lakoff and Johnson 1980) and Kovecses (Al, 1986, 1988, 1990) have written extensively on the conventional system of metaphors for love. Love is conventionally conceptualized, for example, in terms of a journey, physical force, illness, magic, madness, union, closeness, nurturance, giving of oneself, complementary parts of single object and heat. The young woman's definition and description above reflect all these conceptual metaphors, which are conventional in our culture.

In philosophy, metaphorical pluralism is the norm. Our most important abstract philosophical concepts, including time, causation, morality, and the mind, are all conceptualized by multiple metaphors, sometimes as many as two dozen. What each philosophical theory typically does is to choose one of those metaphors as "right," as the true literal meaning of the concept. One reason there is so much argumentation across philosophical theories is that different philosophers have chosen different metaphors as the "right" one, ignoring or taking as misleading all other commonplace metaphorical structurings of the concept. Philosophers have done this because they assume that a concept must have one and only one logic. But the cognitive reality is that our concepts have multiple metaphorical structurings. A common philosophical response is that no metaphorical structure enters into the concept at all, that concepts are literal and independent of all metaphor.

### **Is the Concept Independent of the Metaphors for That Concept?**

Is the concept of love independent of the metaphors for love? The answer is a loud "No!" The metaphors for love are significantly constitutive of our concept of love. Imagine a concept of love without physical force-that is, without attraction, electricity, magnetism-and without union, madness, illness, magic, nurturance, journeys, closeness, heat, or giving of oneself. Take away all those metaphorical ways of conceptualizing love, and there's not a whole lot left. What's left is the mere literal skeleton: a lover, a beloved, feelings of love, and a relationship, which has an onset and an end point. Without the conventional conceptual metaphors for love, we are left with only the skeleton, bereft of the richness of the concept. If somehow everyone had been forced to speak and think about love using only the little that is literal about it, most of what has been thought and said about love over the ages would not exist. Without those conventional

metaphors, it would be virtually impossible to reason or talk about love. Most of the love poetry in our tradition simply elaborates those conceptual metaphors.

### **The Aptness of Metaphor**

What does it mean for a metaphor to be apt? First, a metaphor may play some significant role in structuring one's experience. For example, take the metaphor Emotional Experiences Are Physical Forces, in which one can be overcome by emotion, or in which emotional experiences can be jarring or painful. We may very well experience emotions in the same way we experience certain physical forces. An emotional experience can be painful or disruptive. In short, there are certain metaphorical entailments based on the logic of the source domain, that can be true because the metaphor structures experience itself. Thus, when our emotional experiences are the subject matter we are thinking and talking about, the Emotional Experiences Are Physical Forces metaphor can be apt.

Another way a metaphor can be apt is if it has nonmetaphorical entailments. Take, for example, the Love Is A Journey metaphor. Consider the expression "We're going in different directions" as said of a marital relationship. Given that Common Life Goals Are Destinations in this mapping, the metaphorical idea of going in different directions entails that the spouses have different life goals that are incompatible with the marriage. This is a metaphorical entailment that can be literally true or false. In situations where the metaphorical entailments are nonmetaphorical and true, the metaphor can be said to be apt.

Does this mean that we can simply replace the metaphor by literal truth conditions? Not at all. The metaphor is, in most cases, used for reasoning, it may impose a nonliteral ontology that is crucial to this reasoning, and there may be no nonmetaphorical conceptualization that is adequate for reasoning with the concept. Moreover, not all of its entailments may be literally true. In other words, a metaphorical mapping may be apt in some respects, but not in others.

The point here is that one cannot ignore conceptual metaphors. They must be studied carefully. One must learn where metaphor is useful to thought, where it is crucial to thought, and where it is misleading. Conceptual metaphor can be all three.

The very notion of the aptness of a metaphorical concept requires an embodied realism. Aptness depends on basic-level experience and upon a realistic body-based understanding of our environment.

### **Summary**

Our most important abstract concepts, from love to causation to morality, are conceptualized via multiple complex metaphors. Such metaphors are an essential part of those concepts, and without them the concepts are skeletal and bereft of nearly all conceptual and inferential structure.

Each complex metaphor is in turn built up out of primary metaphors, and each primary metaphor is embodied in three ways: (1) It is embodied through bodily experience in the world,

which pairs sensorimotor experience with subjective experience. (2) The source-domain logic arises from the inferential structure of the sensorimotor system. And (3) it is instantiated neurally in the synaptic weights associated with neural connections.

In addition, our system of primary and complex metaphors is part of the cognitive unconscious, and most of the time we have no direct access to it or control over its use.

Thus, abstract concepts structured by multiple complex metaphors exemplify the three aspects of mind that are the central themes of this book: the cognitive unconscious, the embodiment of mind, and metaphorical thought.