
Double-scope Stories

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The serpent, who was the subtlest beast in the garden, said to the woman, ‘Did the Lord really tell you that you cannot eat whatever you like?’ She answered, ‘We may eat the fruit of the trees of the garden except for the tree in the middle. The Lord has commanded us not to eat its fruit, or even touch it, or we shall die.’ The serpent countered, ‘You won’t die. The Lord knows that when you eat that fruit, your eyes will be opened, and you will be like gods.’ When she understood that the tree was good for food, and pleasing, and to be desired for the knowledge it brings, the woman plucked the forbidden fruit, and ate it, and gave some to her husband, who ate it, too. And their eyes were opened.

Cognitively modern human beings have a remarkable, species-defining ability to pluck forbidden mental fruit—that is, to activate two conflicting mental structures (such as *snake* and *person*) and to blend them creatively into a new mental structure (such as *talking snake with evil designs*). In this study, I will present some principles of this ‘forbidden-fruit’ mental blending and explore some of the consequences for the science of narrative.

Consider the as yet unexplained human ability to conjure up mental stories *that run counter to the story we actually inhabit*. Suppose that you are buying a Rioja from a wine shop on University Avenue in Palo Alto. That is one mental story, with roles, actions, goals, agents, and objects. You must be paying attention to it, for otherwise, you would drop the bottle and

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botch the transaction. But at the same moment, you are remembering a dinner you once had in San Sebastián. In that story, you are eating paella, drinking Rioja wine, and listening to a Spanish guitar.

Or suppose you are actually boarding the plane to fly from San Francisco to Washington, D. C. You must be paying attention to the way that travel story goes, or you would not find your seat, stow your bag, and turn off your personal electronic devices. But all the while, you are thinking of surfing Windansea beach, and in that story, there is no San Francisco, no plane, no seat, no bag, no personal electronic devices, no sitting down, and nobody anywhere near you. Just you, the board, and the waves.

We might have expected evolution to build our brains in such a way as to prevent us from activating stories that run counter to our present circumstances, since calling these stories to mind risks confusion, distraction, disaster. Yet we do so all the time. A human being trapped inescapably in an actual story of suffering or pain may willfully imagine some other, quite different story, as a mental escape from the present.

How can it be that quite incompatible stories do not suppress each other's activation in the human mind? How can we fire up incompatible mental patterns simultaneously? Psychologically, what are we doing when we attend to the present story—that is, our own present bodies, needs, impulses, and activities, and the many objects, events, and agents in our surroundings—but at the same time attend to some mental story that does not serve our understanding of the present? Neurobiologically, what is it in the functioning of our brains that makes it possible for us to resist the grip of the present? Evolutionarily, how did our species develop this ability? Remarkably, someone who is inhabiting the real story of the present and who is simultaneously remembering a different story can partition them, so as to monitor each without becoming confused about which items belong to which stories. Memory researchers offer as yet no explanation of this astounding mental feat of keeping simultaneous activations separate.

There is a tantalizingly similar, possibly related, rudimentary mental phenomenon, which we call 'dreaming,' in which we ignore the present story while we activate an imaginary story. During sleep, our sensory attention to the real story is severely dampened. Before sleep, we place ourselves in the safest possible location, so that ignoring the present story is less dangerous.

It may be that dreaming—including the activation of stories other than the real one—is generally available to mammals. (Frith, Perry, & Lurner

1999; Hobson 1988; Jouvet 1979; Jouvet and Michel 1959.) Although a dog or cat cannot tell us whether it dreams, mammals do show the same stages of sleep as we do, including REM sleep, during which there are rapid eye movements, inhibition of skeletal and nuchal muscular activity, and an electroencephalogram pattern much like the one associated with waking. In such a state of immobility, we, and presumably the mammal, can run alternative mental stories without incurring the risk that we will damage ourselves. As Michel Jouvet and his collaborators have shown, a cat with a certain kind of lesion in the pontine reticular formation retains muscle tone during REM sleep, and so apparently acts out, while sleeping, a variety of hunting behaviors: it raises its head, orients it, walks as if tracking prey, pursues, pounces, and bites. It is hard to resist the inference that the cat is inhabiting dreamed stories during REM sleep, stories that do not suit its actual present circumstances.

Consider a common situation. A man is participating in a wedding. He is consciously enacting a familiar mental story, with roles, participants, a plot, and a goal. But while he is fulfilling his role in the wedding story, he is remembering a different story, which took place a week before in Cabo San Lucas, in which he and his girlfriend, who is not present at the wedding, went diving in the hopes of retrieving sunken treasure. Why, cognitively, should he be able to inhabit, mentally, these two stories at the same time? There are rich possibilities for confusion, but in all the central ways, he remains unconfused. He does not mistake the bride for his girlfriend, for the treasure, for the shark, or for himself. He does not swim down the aisle, even as, in the other story, he is swimming. He speaks normally even as, in the other story, he is under water. We have all been in moments of potential harm or achievement—a fight, an accident, a negotiation, an interview—when it would seem to be in our interest to give our complete attention to the moment, and yet even then, some other story has flitted unbidden into consciousness, without confusing us about the story we inhabit.

Human beings go beyond merely imagining stories that run counter to the present story. We take a great mental leap that I liken to plucking forbidden mental fruit: we connect two stories that should be kept absolutely apart, and we then blend them to make a third story. The man at the wedding, for example, can make analogical connections between his girlfriend and the bride and between himself and the groom, and blend these counterparts into a daydream in which it is he and his girlfriend who are being married at this particular ceremony. This blended story is manifestly false, and he should not make the mistake, as he obediently discharges his duties at the real wedding, of thinking that he is in the process of marrying his girlfriend. But he plucks the forbidden mental fruit, with potentially serious

consequences: he might come to realize that he likes the blended story, and so formulate a plan of action to make it real. Or, in the blended story, when the bride is invited to say 'I do,' she might say, 'I would never marry you!' Her fulguration might reveal to him a truth he had sensed intuitively but not recognized, and this revelation might bring him regret or relief.

Running two stories mentally, when we should be absorbed by only one, and blending them when they should be kept apart, is at the root of what makes us human. So far, I have stressed blends that combine a story we inhabit with a story we remember. But we can also blend two stories that are both attuned to our present circumstances. If we perceive someone dying under a tree as the autumn leaves fall, then the dying and the falling can be seen as different stories, which we can run and understand independently. The dying can happen without the leaves, and the leaves can fall without the dying. But we can also make a blend in which the present man is the present tree. As Shakespeare writes,

That time of year thou mayst in me behold
When yellow leaves or none or few do hang
Upon these boughs which shake against the cold
Bare, ruined choirs, where late the sweet birds sang.

On the one hand, it makes sense that memory would be designed so as to remain subordinate to our attempt to understand the present situation. Arthur Glenberg writes in 'What memory is for':

To avoid hallucination, conceptualization would normally be driven by the environment, and patterns of action from memory would play a supporting, but automatic, role. (Glenberg, 1997: 1.)

But on the other hand, as Glenberg astutely observes, it is often the case that memory takes the upper hand in conceptualizing the story one is inhabiting:

A significant human skill is learning to suppress the overriding contribution of the environment to conceptualization, thereby allowing memory to guide conceptualization. (Glenberg 1997: 1.)

We confront a taxonomy of scientific puzzles related to the blending of stories:

—We can make sense of a story in the immediate environment with the support of memory. This support can range from routine, invisible assistance to nuanced conscious remembrance of a particular memory that guides us in conceptualizing the present story.

—We can bundle and compress two different but compatible stories that are both running in the immediate environment if we can assign them to places in a single conceptual ‘frame,’ such as *chase*, or *race*, or *competition*, or *debate*.

—We can dream an imaginary story during sleep, when our sensory attention to the present story is dampened. (One wonders about dolphins, who appear to sleep on one side of the brain at a time, keeping one eye open to attend to the immediate environment.)

—We can activate a memory while we are awake, even if it is not crucial to making sense of the present story.

—We can activate an imaginary story while we are awake, even if it is not crucial to making sense of the present story.

—We can blend a story tuned to the immediate environment with a remembered or an imagined story.

—We can even activate and blend two stories, both of which are supplied by memory or imagination, even if neither of them is tuned to the present story.

In *The Way We Think: Conceptual Blending and the Mind’s Hidden Complexities*, Gilles Fauconnier and I focus on the remarkable human ability to blend different mental arrays. Blending is a basic human mental operation, with constitutive and governing principles. It played a crucial role, probably *the* crucial role, in the descent of our species over the last fifty or one hundred thousand years. Fauconnier and I offer the view that the mental operation of blending is a basic part of human nature, that human beings share its rudimentary forms with some other species, and that the advanced ability to blend incompatible conceptual arrays is a basic part of what makes us cognitively modern.

It is far from clear how this advanced human ability for blending evolved. It is tantalizing that it was preceded phylogenetically by both dreaming and memory, each of which requires that the brain differentiate between the immediate environment and a different story.

In *The Way We Think*, Fauconnier and I explore the ways in which blending is fundamental to a range of human singularities:

—Counterfactual thinking. (See chapter 11, ‘The Construction of the Unreal,’ and its discussion of everyday examples such as ‘Put the vegetables on the plate in front of the missing chair,’ ‘I have a tooth missing,’ ‘Nobody offered a proposal; *it* would have been shot down.’ See also chapter 12, 263-266, on the identity of missing people. See also Turner 2001 [chapter 2, ‘Reason’].)

—The understanding of personal identity and character. (See chapter 12, ‘Identity and Character.’)

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—The understanding of cause and effect. (See chapter 5, ‘Cause and Effect.’)

—Grammar and language. (See chapter 8, ‘Compressions and Clashes,’ chapter 9, ‘The Origin of Language,’ and chapter 17, ‘Form and Meaning.’ See also Coulson 2001, Coulson and Fauconnier 1999, Mandelblit 2000, Grush and Mandelblit 1997, Sweetser 1999.)

—The cognitive use of objects and material anchors. (See chapter 10, ‘Things.’ See also Hutchins In preparation)

—Mathematics. (See chapter 11, 233-238, and chapter 13, 270-274. See also Lakoff and Nuñez, 2000.)

—Category extension and metamorphosis. (See chapter 13, ‘Category Metamorphosis.’)

—Art (see also Turner 2002b), science, religion, dance, gesture (see also Liddell 1998), music (see also Zbikowski 2001), advanced tool use, fashions of dress, visual representation, literature (see also Turner 1996, Herman 1999, Hiraga 1999, Sinding 2001), rhetoric (see also Pascual 2002), and so on.

Here, I focus on how we blend two separate stories. I will begin with a small example from Racine brought to my attention by Gilles Fauconnier.¹ It is the celebrated avowal scene in Racine’s *Phèdre* between Phaedra, the wife of Theseus, and Hippolytus, who is Theseus’s son and Phaedra’s stepson. Phaedra, at the moment of speaking, is actually inhabiting a vibrant, emotional story involving Hippolytus. She has every reason to attend directly to Hippolytus and to the present moment. But she is cognitively modern, and does what we all do: she recalls a different story, namely, the legend of Theseus and the Minotaur.

PHEDRE

Oui, Prince, je languis, je brûle pour Thésée.

Je l’aime, non point tel que l’ont vu les enfers,

Volage adorateur de mille objets divers,

Qui va du Dieu des morts déshonorer la couche ;

¹ Fauconnier and I have often discussed this example and presented it in talks. I presented an analysis of the passage at the Collège de France in 2000. (Turner, 2002a). Fauconnier presents an analysis in (Fauconnier, To appear).

Mais fidèle, mais fier, et même un peu farouche,
 Charmant, jeune, traînant tous les coeurs après soi,
 Tel qu'on dépeint nos Dieux, ou tel que je vous voi.
 Il avait votre port, vos yeux, votre langage,
 Cette noble pudeur colorait son visage,
 Lorsque de notre Crète il traversa les flots,
 Digne sujet des voeux des filles de Minos.
 Que faisiez-vous alors? Pourquoi sans Hyppolyte
 Des héros de la Grèce assembla-t-il l'élite?
 Pourquoi, trop jeune encor, ne pûtes-vous alors
 Entrer dans le vaisseau qui le mit sur nos bords?
 Par vous aurait péri le monstre de la Crète,
 Malgré tous les détours de sa vaste retraite.
 Pour en développer l'embarras incertain,
 Ma soeur du fil fatal eût armé votre main.
 Mais non, dans ce dessein je l'aurais devancée :
 L'amour m'en eût d'abord inspiré la pensée.
 C'est moi, Prince, c'est moi dont l'utile secours
 Vous eût du Labyrinthe enseigné les détours.
 Que de soins m'eût coûté cette tête charmante!
 Un fil n'eût point assez rassuré votre amante.
 Compagne du péril qu'il vous fallait chercher,
 Moi-même devant vous j'aurais voulu marcher ;
 Et Phèdre, au Labyrinthe avec vous descendue,
 Se serait avec vous retrouvée ou perdue.

HIPPOLYTE

Dieux! qu'est-ce que j'entends? Madame, oubliez-vous
 Que Thésée est mon père et qu'il est votre époux?

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PHEDRE

Et sur quoi jugez-vous que j'en perds la mémoire,
Prince? Aurais-je perdu tout le soin de ma gloire?

HIPPOLYTE

Madame, pardonnez. J'avoue, en rougissant,
Que j'accusais à tort un discours innocent.
Ma honte ne peut plus soutenir votre vue ;
Et je vais...

PHEDRE

Ah! cruel, tu m'as trop entendue.

A translation by Richard Wilbur. (Racine, 1986, 45-47):

PHAEDRA:

Yes, Prince, I burn for him with starved desire,
Though not as he was seen among the shades,
The fickle worshiper of a thousand maids,
Intent on cuckolding the King of Hell;
But constant, proud, a little shy as well,
Young, charming, irresistible, much as we
Depict our Gods, or as you look to me.
He had your eyes, your voice, your virile grace,
It was your noble blush that tinged his face
When, crossing on the waves, he came to Crete
And made the hearts of Minos' daughters beat.
Where were you then? Why no Hippolytus
Among the flower of Greece he chose for us?

Why were you yet too young to join that band
Of heroes whom he brought to Minos' land?
You would have slain the Cretan monster then,
Despite the endless windings of his den.
My sister would have armed you with a skein
Of thread, to lead you from that dark domain.
but no: I'd first have thought of that design,
Inspired by love; the plan would have been mine.
It's I who would have helped you solve the maze,
My Prince, and taught you all its twisting ways.
What I'd have done to save that charming head!
My love would not have trusted to a thread.
No, Phaedra would have wished to share with you
Your perils, would have wished to lead you through
The Labyrinth, and thence have side by side
Returned with you; or else, with you, have died.

HIPPOLYTUS

Gods! What are you saying, Madam? Is Theseus not
Your husband, and my sire? Have you forgot?

PHAEDRA

You think that I forget those things? For shame,
My lord. Have I no care for my good name?

HIPPOLYTUS

Forgive me, Madam. I blush to have misread
The innocent intent of what you said.
I'm too abashed to face you; I shall take
My leave . . .

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PHAEDRA

Ah, cruel Prince, 'twas no mistake.

You understood. . . .

Phaedra escapes, partially, the present. She and Hippolytus call up the thought of Theseus, who is absent, and activate in imagination the story of Theseus and the Minotaur. Phaedra makes analogical connections between the present story, which involves Hippolytus, and the remembered story, which involved Theseus, Ariadne, and the Minotaur. In the cross-story analogy, Theseus and Hippolytus are counterparts. This analogy is natural, based on similarity, inheritance, and kinship: Hippolytus is the grown son of Theseus.

But then Phaedra does something that is at once highly imaginative and utterly routine for human beings: she blends the two analogical people, Hippolytus and Theseus, from the two separate stories. This launches a new, third, blended story. In the new blended story, Hippolytus does what Theseus did: Hippolytus, in Crete, enters the labyrinth and defeats the Minotaur. This imaginative story, launched by the analogy between Theseus and Hippolytus in the two original stories, quickly takes on emergent meaning. Phaedra blends herself with Ariadne, and so becomes in the blended story the assistant of the hero in the labyrinth. Having inserted herself into this new role, she comes to a new conclusion: the thread is not good enough; the hero's assistant, in this blended story, now dismisses the plan of giving the hero a mere thread as equipment for escaping, and concludes that the assistant must enter the labyrinth with the hero, to risk what he risks. The assistant is of course the hero's lover. In the blend, the hero is now Hippolytus, and the assistant is Phaedra, and so Phaedra is Hippolytus's lover. It is exceptionally revealing that Phaedra's love in the blend impels her to enter the labyrinth to help Hippolytus, because in the actual historical story, Phaedra did not feel this way about Theseus. She did not enter the labyrinth with Theseus. She did not give him the thread. (In some versions of the story, she was not even there.) The essential difference between the historical story with Theseus in the labyrinth and the blended story with Hippolytus in the labyrinth is that now Hippolytus replaces Theseus and Phaedra replaces Ariadne. All the new feelings, all the new mean-

ings are caused by these changes, which are developed only in the blended story.

How could Phaedra know that in the counterfactual blend she would be so passionately attached to Hippolytus? One available implication is that she loves Hippolytus in the blend because he is blended there with Theseus, her husband. But another available implication is that she knows how she would feel in the blend because that is how she feels now in front of Hippolytus, in the present story. In that case, she is telling him, through this fantastic blended story, that she loves him not just as a woman loves a man, but with the most extreme passion and dedication. Hippolytus cannot fail to recognize this implication.

To summarize, Phaedra's words prompt us, and prompt Hippolytus, to run two stories at the same time—the present story and the historical story—and also to form a highly imaginative blended story in which Hippolytus is integrated with Theseus. In that blended story, that false story, new meaning develops. That new meaning turns out to deliver to us the deep truth for the actual human situation. Plucking the forbidden fruit brings insight and knowledge.

The blended story of Phaedra and Hippolytus manifests standard features of blending:

Mapping between elements of the two stories. Blending two stories always involves at least a provisional mapping between them. The mapping typically involves connections of identity, analogy, similarity, causality, change, time, intentionality, space, role, part-whole, or representation. In *Phèdre*, the mapping involves analogy and time. There is a causal link as well, because Phaedra's existence in Theseus's household is a result of his earlier trip to Crete and his vanquishing of the Minotaur.

Selective projection. Different elements of the stories are projected to the blended story. In *Phèdre*, we take from the historical story of the myth the scene of the labyrinth, the Minotaur, and the roles of both the hero and the daughter of Minos who helps him, but now we bring Hippolytus and Phaedra in from the other story as the values of those roles. In the story of the Minotaur, the daughter of Minos who helps Theseus is Ariadne, not Phaedra.

Emergent structure. In the blended story of Phaedra and Hippolytus as lovers, we have astonishing emergent structure. Now it is Hippolytus who conquers the Minotaur, and it is Phaedra who helps him. Moreover, Phaedra goes into the labyrinth because of her great love. Emergent structure in integrating stories comes from three sources: composition, completion, and elaboration. Composition is putting together elements from different conceptual arrays. Completion is the filling in of partial patterns in the blend. Elaborating the blended story occurs when we develop it according

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to its principles. In the case of *Phèdre*, elaboration of the blend leads to a great range of new meaning.

Phèdre is a story of sexual passion involving psychological subterfuge. Now consider a radically different story, one that connects divinity to humanity.

Human beings are able to invent concepts like *punishment*, *revenge*, and *retribution*. These concepts are the result of blending. In each case, there is an earlier scenario in which a character does something that is regarded as an offense, and a later scenario in which something is done to that person. If we took the two scenarios as separate, we would have two actions, and the second one (killing, inflicting physical pain, locking someone up, taking money from someone, depriving someone of a right or a privilege, even yelling at someone) could be regarded as a gratuitous offense, no different from the first. But when we integrate these two scenarios into one, we compress the two actions into one balanced unit. This compression does not change the facts of the first scenario, but it does change their status. The emergent meaning for the integration network is very rich. While the two scenarios, each on its own, are offensive, the blend is just, and this has consequences for the two scenarios themselves: because they sit in this blending network, the second action is permissible, and the first offense is *removed* or *neutralized* or *paid for*.

The human concept of *punishment* goes far beyond any evolutionary psychological motivation to dominate, intimidate, or discipline another person, as we see from the fact that a human being can be disturbed when an offender dies *unpunished*. Obviously, we cannot modify the future behavior of a corpse by dominating, intimidating, or disciplining it, and the corpse offers no threat or competition, so there is no possible evolutionary benefit to us of expending energy trying to do so. But human beings have double-scope imaginations. They can conceive of a hypothetical punishment, revenge, or retribution, and feel aggrieved that this blend is permanently counterfactual because the offender has died. Here is a revealing story on this subject: Spanish conquistador Don Juan de Oñate was accused, perhaps apocryphally, of having handed down extreme punishments to rebellious Acoma Pueblo Indians in 1599, including amputation of the right foot of all young Acoma men. Nearly four centuries later, an anonymous group claiming to be 'Native Americans and Native New Mexicans' took credit for cutting off the right foot of the monumental, heroic statue of Oñate at the Visitor Center at Alcalde north of Española, New Mexico. (Lee 2001.)

If we imagine a *just punishment* blending network in which the first story has reference to reality but both the second story and the blend are only hypothetical, then the offending party in the first story counts as *worthy of punishment*. The punishment is furthermore *unrealized*. This is a general template for a blending network. Applying this network not to a single person but instead to all of us in the aggregate, we have the familiar grand story of *guilty or sinful humanity, worthy of punishment*. That is one blending network. Now let us activate alongside that network an altogether different story in which a blameless man is crucified. Now we blend *guilty or sinful humanity* with the blameless man. In the new hyper-blend, we have the blameless man from one story but the sins of the human beings from the other. His crucifixion, according to the logic of the *just punishment* blending network, becomes recompense for the sins of humanity. His suffering excuses humanity from bearing the punishment.

This is a spectacular blended story, of the sort Fauconnier and I have called ‘double-scope.’ In a double-scope story network, there are input stories with different (and often clashing) organizing frames that are blended into a third story whose organizing frame includes parts of each of the input organizing frames. The blended story has emergent structure of its own. In the double-scope story of the crucifixion, one element in the blend, Jesus Christ, has, from the story of Jesus the Carpenter, the identity, biography, and character of Jesus, but also has, from the story of human beings who sin, the sins of the human beings. In the blend, Jesus is an individual who bears away the sins of the world, the *agnus dei qui tollis peccata mundi*. As Paul says in Romans 4:25, ‘he was delivered over to death for our sins.’ The punishment in the blend has a profound consequence for the input story with the human beings: they no longer must bear the punishment! The punishment has spent itself. Some of the human beings concerned may even feel, in virtue of this double-scope story, that their sins have been *removed*.

In the story of Jesus, he is *unsinning*. His counterpart in the story of humanity is the human beings, who are *sinful*. This is an absolute clash. In the blend, we integrate features of Jesus with features of the human beings, producing emergent structure according to which the human beings no longer must bear the consequences of their sins.

Perhaps not surprisingly, it is common for other inputs to be used to strengthen this double-scope story. We all know the abstract story in which someone bears a heavy burden for us, and the abstract story in which a force that results in displacement is balanced out by applying a countervailing force, and the story in which some specific animal, often a lamb, is sacrificed to allay a god or gods and thereby to dissuade them from bringing harm. All of these inputs are themselves complicated, and the story of the

sacrificial lamb is itself already a complicated blend. In the final hyperblend that arises from integrating these many different input stories, Jesus Christ is at once the sacrificial lamb, the bearer of the burden, and the individual who is punished for the sins.

This blended story, like many double-scope blended stories, achieves the invaluable mental feat of compressing great and diffuse ranges of conceptual structure down to human scale. Although we are gripped by our sense of inadequacy and transgression, our minds cannot grasp at a shot all its origins and nuances. If we multiply that sense over all humankind, we obtain a result that is beyond human understanding, or would be, absent the conceptual power of double-scope blending. The Christ The Redeemer blending network provides one way to compress the human condition down to a comprehensible human scale story, thereby to give us global insight. The blend contains one main man, Jesus, and one human-scale story of His suffering. The story happens in one place and lasts one day. He is crucified and mocked. He dies. He is deposed and buried. In the blend, our existential and ethical relation to the cosmos takes on the compressed intelligibility and memorability of a blow for a blow. Many, very many human beings, indeed *all* human beings are compressed into one. All their sins are compressed, and one man's pain pays for all. One death atones for all.

As we have already seen, a blended story can itself be an input to another blend. Cascading networks, of blend upon blend, can compress, in stepwise fashion, great reaches of thought and meaning to human scale. For example, *The Dream of the Rood*, passages of which, carved on the Ruthwell Cross, date from at least the early eighth century A.D., is a spectacular example of a cascade of blends. It uses the story of Christ the Redeemer, which we have seen is already a double-scope hyperblend, as an input story to a further, more elaborate blend. *The Dream of the Rood* has many contributing scenarios. In it, a sinner relates a dream in which the Rood—the Holy Cross—appears to him and speaks to him about its experiences. This pyrotechnic blend is based on an everyday blending pattern according to which our perception of a physical object makes us feel as if the object is communicating to us something of its history. A souvenir, for example, communicates to us about the time, place, or event of which it is a souvenir. This is a minimal personification blend: one input has a person, another has a physical object in the presence of which we have memories or make inferences, and the blend has an object that is communicative about these memo-

ries and inferences and perhaps even intentional without actually being able to talk.

In *The Dream of the Rood*, this conventional blending network is developed so that the personified object receives even more projection from the concept of a person: the Cross can actually speak like a person, and in fact does.

Typically in everyday blends for ‘communicative’ objects, the content of the communication comes from memories we possess that are associated with the object, or from inferences we derive from seeing the object. In such typical cases, the communication cannot extend beyond memory and inference. But in *The Dream of the Rood*, the content of the Cross’s speech goes beyond anything the auditor might remember or infer. The talking Cross has therefore received even more elaborate projection from the input containing the person than is usual: the Cross, like the person, can tell us things we would never have guessed or remembered. The reader becomes the audience for the talking sinner who relates his story, and so indirectly the audience for the Cross, which relates its story.

Remarkably, the Cross is also blended with Christ, for not only is the Cross stained with blood on the right side, it also bleeds on the right side. This is a blend of an instrument (the Cross) with a patient (the person crucified on the Cross). The story of the manufacture of the Cross out of a tree and its use as an instrument of crucifixion is blended with the story of Christ and his crucifixion: Christ is blended with Cross, and being crucified is blended with being used as the instrument of crucifixion. The Cross reports the history in which it was taken by foes from the forest and forced into shape for an evil design. It suffered like Christ and was wounded with the same nails; Cross and Christ were both mocked. The Christ-like suffering of the Cross confers upon it both immortality and the ability to heal sinners: the Cross informs the sinner that those who wear the Cross need not be afraid, that the kingdom of heaven can be sought through the Cross.

The Cross is also blended with the sinner who relates the dream, creating a blend of identification. The sinner is stained with sins, wounded with wrongdoings, downcast. The Cross, too, felt sinful: it had been the slayer of Christ. But it was redeemed, and in just the same way, the sinner can be redeemed. This is the crucial moral of the blended tale.

Perhaps most interestingly, the Cross is also blended with a thane, and Christ with the lord served by that thane. In the story remembered and related by the Cross, Christ is a strong, young hero, who hastens to the Cross, stouthearted, in order to climb it, who strips and climbs the cross, bold in the sight of the crowd. The Cross describes itself as having done its duty to serve the Lord’s will, even though it was afraid and was tempted to fail the

Lord. As Peter Richardson has shown, the purpose of this blend is to give a model of what a good thane is and does. (Richardson 1999.)

The author of *The Dream of the Rood* blends Cross and thane so the Cross can count as a thane. The Cross represents its actions as perfect and praiseworthy service to a lord, and this evaluation, combined with the holy status of the Cross and its evident prestige (all that gold, all those adoring angels) makes it, in the blend, not just a thane but a paragon among thanes. As a result, it provides a model for those who would be thanes. The poem therefore has a particular rhetorical purpose which Richardson calls 'making thanes.' It offers a complicated blend, in which the history of the Cross as a physical object is blended with the frame of a thane's life, making the Cross the counterpart of the thane and Christ the counterpart of the thane's lord, and resulting in a particular emergent biography in the blend, of an exceptionally honored and successful thane-Cross, all with the purpose of projecting back to the contributing story of *thane* a divinely-approved model of how a thane should act. To the extent that this poem is meant to persuade a reader to be a good thane through aspirational identification with the ideal, it prompts for yet a further blend in which the reader is blended with the ideal thane.

Very many individual human beings, along with their complicated, aggregate, overarching story, can be compressed to human scale if we blend that diffuse array with a story that is already compressed, such as the story of a single agent involved in a clear, human-scale set of events. The diffuse story thereby acquires the compression of the compressed story. This is exactly what we see in the case of Christ the Redeemer. But here is another example of the same phenomenon, which on its surface looks completely different. In *Seabiscuit: An American Legend*, Laura Hillenbrand tells the story of a racehorse as if it were an allegory of the American people during the Depression. *USA Today* borrowed this portrayal in its announcement of *Seabiscuit* as its 'book club pick':

Seabiscuit tells how an unimpressive older horse with crooked legs and a short tail stole the hearts and minds of the American people during the Depression. In 1938, the No. 1 newsmaker was not FDR or Hitler; it was a horse that defined the word 'underdog.'

It was the indefinable quality of 'being game' that captured Americans. As one observer put it, *Seabiscuit* would rather die than be beaten in a race. Yet, unlike many champion thoroughbreds, his off-track personality was low-key, appealing and, frankly, lazy. He was a glutton for food and enjoyed the friendship of a horse named Pumpkin.

In short, he seemed the American Everyhorse, the equine version of how we see ourselves. Yet his race against the favored War Admiral is considered the greatest horse race in history. (Deirdre Donahue, 'Book club is spurred to choose 'Seabiscuit',' *USA Today*, Thursday, 23 May 2002, page 1D.)

In this Seabiscuit-Americans network, one story has the American populace with its sufferings, poverty, and challenges, facing Hitler, who, in 1938, took control of Austria and the Sudetenland and showed signs of annexing Poland. The other story has a horse, supported by a ramshackle team, who competes against the intimidating War Admiral and wins. In the double-scope blend, we have an element that is both Seabiscuit and the American people. This compresses 'the American people,' something diffuse and vague, to human scale. Nationalism, like religion, depends on such compressed, double-scope stories for its existence, which is why robust nationalism, like religion, did not come into existence until after human beings evolved the capacity for double-scope blending.

The story of Phèdre belongs to elite literature, both Greek and French, and the story of Christ the Redeemer belongs to successful religion. The story of *The Dream of the Rood* belongs to both. The story of Seabiscuit belongs to adult nationalism. But double-scope stories are not restricted to a particular human rank, a class of conceptual domains, or a kind of cultural practice. On the contrary, they are everywhere, the inescapable hallmark of all cognitively modern human beings. Children pluck forbidden fruit routinely, as part of what it means to be a human child and to learn human culture. My nine-year-old son, Jack, whose younger brothers are Peyton and William, and whose twenty-year-old sister is Elizabeth, said at the dinner table ten minutes ago, entirely out of the blue, 'If we were all chickens, you, William, would be about Elizabeth's age, you, Peyton, would be about dad's age, and me, dad, and mom would all be dead of old age. We are all five alive. We are lucky we are not chickens.' However ridiculous it may seem at first blush, I assert that the ability to pluck such forbidden fruit—blending chickens and human beings, for example, which we should never confuse—is the defining mental ability of cognitively modern human beings, and the source of our creativity and knowledge. These mental operations—disobeying the command of the present to activate alongside it the story of chickens as they progress through life, and then plucking forbidden mental fruit by blending the chickens with specific members of a human family—these are instances of the basic mental operations that make us cognitively modern.

Activating incompatible stories and blending them results in dramatic emergent meaning. In the We-Are-Chickens blend, the six-year-old Peyton is in advanced middle age and the parents and the eldest child are dead.

This emergent meaning has inferential consequences for the real story, where human beings are now *lucky*, a feature that, like *hapless*, *safe*, and *mistaken*, is inconceivable without forbidden-fruit blending.

Such blends depend upon backstage precision and care in the mapping and the blending. For example, in the We-Are-Chickens blend, dad is dead because of his chronological age, but Peyton, who is ‘dad’s age’ in the blend, is not dead. How can this be? The answer is that ‘dad’s age’ for Peyton in the blend is advanced middle age *for a chicken*, a life-stage which a chicken (we infer from the assertion) reaches after about six years, Peyton being six years old; while dad’s state for dad in the blend is the state of a chicken born 48 years ago, that is, dead. In interpreting the assertion, we all immediately and unconsciously make complicated calculations to arrive at this emergent structure, even as we project elements and relations selectively to the blend. My nine-year-old son is not Racine, but they belong to the same species. Any normal member of our species is equipped with these mental operations, and no member of any other species has them.

Double-scope blending is also manifestly evident in children from an early age. *The Runaway Bunny*, published in 1942, is one of the two most popular and successful picture books for two-year-olds. (Brown 1942.) In *The Runaway Bunny*, a little bunny talks with his mother (already a blend, if one of the most routine). He says that he is going to run away, and his mother quite predictably says she is going to come after him. Already we have a blended story. We activate the story of a human mother and her child and a story of a little bunny who is being chased by its bunny mother. The opening illustration shows a depiction that could be a representation of the bunny story. But then the blending takes off. The little bunny says, ‘If you run after me, I will become a fish in a trout stream and I will swim away from you.’ The illustration now shows a bunny in a stream. His mother responds, ‘If you become a fish in a trout stream, I will become a fisherman and I will fish for you.’ So the already-blended story of the talking bunnies is now blended with the story of a fisherman fishing. The accompanying illustration refers undeniably to this new blend with the fish, and not just to normal bunnies, as we see from the fact that, in it, the mother is walking on two legs and reaching up toward fishing equipment. In the next illustration, the mother, wearing waders and holding a net, stands in the trout stream, casting a line with a carrot at the end. The little bunny is swimming toward the carrot.

Two-year-olds have not the slightest difficulty constructing the blended story and drawing the appropriate inferences. If a two-year-old who knows that fishermen use hooks and bait to fool fish, to snag them, to hurt them, to haul them in, and to eat them is looking at the illustration of the mother-bunny-fisherman fishing for the baby-bunny-fish with a carrot-hook on the end of the line, and you begin to ask questions, the dialogue goes like this: 'What is this?' 'A carrot.' 'What is it for?' 'To catch the baby bunny.' 'What will the baby bunny do?' 'Bite the carrot.' 'Will he swim away down the river.' 'No. He bites the carrot.' 'What is the mommy bunny doing?' 'Fishing for the baby bunny.' 'What is she?' 'She's a fisherman.' 'Does the baby bunny know his mommy is fishing for him.' 'No. He wants the carrot.' 'Can the baby bunny swim?' 'Yes. He's a fishie.' 'Does he have a fishie tail.' 'No. He's a bunny.' 'Will the carrot hurt the baby bunny?' 'No! The mommy doesn't hurt the bunny!' 'What will happen when the baby bunny bites the carrot?' 'The mommy bunny will pull him in and hug him and kiss him.' 'Will he smell like a fish?' 'No! He's a baby bunny!'

When the little bunny says he will become a fish, he is asserting a new blended story as a vehicle for escape from the first blended story in which bunnies talk and the little bunny runs away from home. In the little bunny's new blended story, the bunny is a fish, but its mother, in the little bunny's view, is projected to the new story as merely a talking-mommy-bunny, and is, as planned, incapacitated. But the mother asserts a correspondence between herself and a fisherman. She insists that she projects in to the new story as a talking-mommy-bunny-fisherman. The mechanism of this projection is *change*: she will 'become a fisherman.' Here, she simply follows the pattern originally laid down by the little bunny, who asserted that he could escape the first blended story and land in a new blended story through an act of willful change on his part, transforming himself into a fish (or more accurately, a talking-baby-bunny-fish).

This sets the pattern for the rest of the book. Every time the little bunny insists that he will escape the blended story by creating a new blend, the mother projects herself into that new blend by assuming a role there that gives her more power and ability than the baby bunny foresaw. The little bunny cannot seriously deny her power to project herself in this fashion, because it was he who provided the pattern of projection in the first instance, and, more forcefully, because she has an absolute motivation that nothing can withstand: 'For you are my little bunny.'

Thus, when the little bunny says 'If you become a fisherman, I will become a rock on the mountain, high above you,' the mother responds 'if you become a rock on the mountain high above me, I will be a mountain

climber, and I will climb to where you are.’ And so the little bunny becomes a crocus in a hidden garden, and so the mother becomes a gardener and finds him, and so the little bunny becomes a bird and flies away, and so the mother becomes the tree that the bird comes home to (the tree looks like topiary, in the shape of a mother bunny, to which the winged bunny flies), and so the bunny becomes a sailboat and sails away, and so the mother becomes the wind and blows the little bunny where she wants, and so the little bunny joins a circus and flies away on a flying trapeze, and so the mother becomes a tightrope walker and walks across the air to the little bunny, and so the little bunny becomes a little boy and runs into a house, and so the mother becomes the little boy’s mother and catches him and hugs him (the illustration shows the mother bunny rocking the little boy-bunny in a rocking chair).

The little bunny at last realizes it is hopeless: the mother has the general trick of coming into any story, no matter how ingeniously blended, and catching him. Therefore, none of the blended stories removes him from his mother. ‘Shucks,’ says the little bunny. ‘I might just as well stay where I am and be your little bunny.’ And so he does. ‘Have a carrot,’ says the mother bunny. The last illustration returns us to the original blended story, in which mother and little bunny are in a comfortable room, which is a rabbit hole in the bottom of a tree. The mother gives the little bunny a carrot.

I expect that for many children, there is another story that is being blended with each of these blended little bunny stories, namely, the story of their own lives. In that case, the children who are hearing the story blend themselves with the little bunny as it goes through each of the blended stories in the cascade. This feat of multiple double-scope blending provides the inference that no matter what the human two-year-old does to explore its freedom and assert its independence from its mother, in the end, mother will always be there, to find, retrieve, catch, cuddle, and rock the human child. Perhaps this accounts in part for the popularity of the book among two-year-olds.

It is worth taking a moment to marvel at the fact that a complicated string of fantastic blended double-scope stories ends up being profoundly persuasive and reassuring for the real story which the real child actually inhabits. The child cannot actually test its independence so thoroughly in reality without running unacceptable risks, but it can do so through mental simulation, and the simulations change the child’s view of its own reality. The adult reading the story might also be persuaded by these simulations to

conceive of the relationship in a certain way. Mother and child have the opportunity to conceive of their real roles by activating stories they in fact could not possibly inhabit. This is amazing.

There is another familiar situation that calls for persuasion: a suitor courting a young woman. In the Provençal song ‘O, Magali,’ embedded in Frederic Mistral’s 1858 *Mireille*, a suitor calls from the street below to his beloved, Magali, who is in her room above.² The song uses the identical abstract pattern deployed in *The Runaway Bunny*: Magali launches a blended story as a means of escape from the present story, but it doesn’t work, and so, repeatedly, a new blend must be launched from the old. Each time, the resourceful suitor finds a way to enter the new blend as something linked to his beloved. These links emphasize physical pursuit, touch, and possession. Magali says she will not respond to the serenade but instead turn into a fish and escape into the sea. In this way, the beloved, like the child, issues a challenge. Here is the ensuing cascade of metamorphoses:

- If you become a fish, I will become a fisherman.
- Well then, I will become a bird and fly away.
- Then I will become a hunter and hunt you.
- Then I will become a flowering herb in the wild.
- Then I will become water and sprinkle you.
- Then I will become cloud and float away to America.
- Then I will become the sea breeze and carry you.
- Then I will become the heat of the sun.
- Then I will become the green lizard who drinks you in.
- Then I will become the full moon.
- Then I will become the mist that embraces you.
- But you will still never have me, because I will become the virginal rose blossoming on the bush.
- Then I will become the butterfly who kisses you and becomes drunk on you.
- Go ahead, pursue me, run, run. You will never have me. I will become the bark of the great oak hidden in the dark forest.
- Then I will become the tuft of ivy and will embrace you.

² I am grateful to Manuela Carneiro da Cunha for bringing this poem to my attention.

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—If you do that, you will cling only to an old oak, for I will have turned into a novice in the monastery of Saint Blaise.

—If you do that, I will become a priest and be your confessor and hear you.

Now, in *Mireille*, this song is being recounted by Noro to a group of young women, who at this point tremble and beg Noro to tell them what happens to this novice, this ‘moungeto,’ who was an oak, and a flower, moon, sun, cloud, herb, bird, and fish. Noro says, ‘If I recall, we were at the place where she said she would take refuge in a cloister, and her ardent admirer responded that he would enter as her confessor, but we see again that she sets up a great obstacle’:

—If you pass through the portal of the convent, you will find all the nuns walking in a circle around me, because you will see me laid out under a shroud.

This is an absolute obstacle indeed. But the suitor is undeterred:

—If you become the poor dead girl, I will therefore become the earth. And then I shall have you.

This suite of blends has a profound persuasive effect on Magali, and it leads her to think about changing her judgment of the suitor’s character, or at least her visible response to his courtship. She says, ‘Now I begin to believe that you are not merely engaging in pleasantries with me. Here is my little glass ring for remembrance, handsome young man.’

The Runaway Bunny and ‘O, Magali’ rely on another kind of double-scope blending that is both common and effective. The pattern of the storytelling has a form that is blended with the event structure of the narrated human interactions. The lives of the mother and child, or lover and beloved, are vast, uncertain, and diffuse, stretching over time and place, conditioned by every kind of environment, emotion, and intentionality common to human lives. The question is, what will happen in these lives? Will these lives have any reliable structure? By contrast, the form of the expression has a very crisp structure: two people speak in a short, witty conversation. The conversation consists of a challenge begun by one of them, and each time, the challenge is answered. Whenever the child or beloved escapes into a new blend, the mother or lover follows ingeniously and to the same effect, until the child or beloved becomes convinced by the pattern. The pattern of the brief *conversation* is blended with the pattern of the extended *life*. The dedication of the mother or lover in staying with the witty *conversation*, always rising to the *rhetorical* challenge during the ten or

fifteen minutes it takes to conduct the conversation, is blended with the dedication of the mother or lover in *life*, always rising to the *biographical* challenge of staying with the child or beloved through changes over years. Quite interestingly, the quality of the rhetorical performance of the mother or lover is indicative of the biographical performance toward the child or the beloved. Why should the beloved give the lover her little glass ring just because he can conduct the exchange? Why should a brief, human-scale conversation between two people have any influence on her judgment of his character and his future performance as a lover? The answer is that she, like all cognitively modern human beings, can do double-scope blending, and in this case, blends two radically different things, namely a brief rhetorical form and the rhythm of an extended life. Fiction, poems, and plays are brief and cannot contain patterns that are diffuse in life. But they can prompt us to blend such diffuse patterns with human-scale stories and human-scale forms to produce blends that count as human-scale representations of the otherwise diffuse stories. The result is compressed blends that give us insight into what is otherwise beyond our grasp.

Here is an example which depends explicitly on blending two radically incompatible scenarios, one of them centrally concerned with form. In *Harold and the Purple Crayon*, written for three-year-olds, Harold uses his purple crayon to draw, and whatever he draws is real. His world is a blend, of spatial reality and its representation. In the blend, the representation is fused with what it represents. When Harold needs light to go for a walk, he draws the moon, and so he has moonlight. The moon stays with him as he moves. In the real story of walking in the moonlight, the moon cannot be created by drawing or come into existence at someone's will. Alternatively, in the little story of a child drawing a moon, the drawn moon cannot emit moonlight or float along in the sky as the artist's companion. But in the blend, there is a special blended moon with special emergent properties: it comes into existence by being drawn, and it hangs in the sky and gives light.

The mechanisms of blending that give us this special blended moon work generally throughout *Harold and the Purple Crayon*. When Harold wants to return home, he draws a window around the moon, thereby positioning the moon where it would appear in his window if he were in his bedroom, and so he is, ipso facto, presto-chango, in his bedroom, and can go to sleep. Child Harold's blended world has new kinds of causality and event shape that are unavailable from either the domain of drawing or the domain of spatial living.

The projection to this blend, and the completion and elaboration of the blend, are not algorithmic, not predictable from the contributing spaces, but

instead have considerable room for alternatives. For example, when one draws, one often makes practice sketches, erasures, and mistakes that do not count as the finished drawing. Which kinds of marks made with the purple crayon shall count as reality in the blend? The answer chosen by the author of the book is all of them. When Harold's hand, holding the purple crayon, shakes as he backs away in a line from the terribly frightening dragon, the resulting mark is a purple line of wavy scallops: 'Suddenly he realized what was happening. But by then Harold was over his head in an ocean.'

The principle for connecting the purple sketches to elements of reality is, predictably, image-schematic matching: if the sketch matches the iconic form of something, it is that thing. But it appears that this matching is constrained: a given purple sketch can be matched to exactly one reality. For example, once the wavy line is an ocean, Harold cannot transform the ocean into a cake by perceiving the wavy line as icing on a cake. Yet in a differently conceived blend, in a different book, the character who does the drawing might possess the power to recast reality by perceiving the sketch first one way and then another.

In Harold's blend, all of physical space is a piece of paper on which to draw. What are the possibilities in the blend of blank paper/empty space? Can Harold move as he wishes through it? The answer chosen by the author is that once something is drawn that gives Harold relative location, he is constrained by some of the physics of the real world and his relative location. For example, once he draws the hull of a boat and part of the mast, he must climb the mast to draw the parts of the boat he could not reach from the ground. When he wants to find his house, he begins to draw a mountain which he can climb for a better view. He climbs the part he has drawn so he can draw more to climb. But as he looks down over the other side of the mountain, he slips, and since he has been positioned with respect to the mountain, the blank space is now thin air, so he must be falling. He is obliged to draw a balloon to save himself from crashing.

There is another blend at work in *Harold and the Purple Crayon*: the parent who reads this story to a child is prompting the child to make a blend of himself and Harold so the child will be more tractable at bedtime. This is a conventional blend in children's literature, at least children's literature of the sort that weary parents prefer to read to children at what the parents regard as the child's bedtime. In this template for a blending network, the story in the present environment is blended with whatever story is being read, in the hope of leading the child to make the present story conform to a

favored event in the blend, namely, the child's pleasant willingness to go to bed.

The human ability to conceive of a small story—with objects, agents, and actions—that counts as an understanding of the present environment is by now well-recognized for its central role in cognition. This ability to parse the world as consisting of stories is leveraged by two additional mental abilities. The first is the ability to activate simultaneously, without confusion, two or more different stories that conflict resolutely. The second is our amazing creative ability to pluck forbidden mental fruit by blending two conflicting stories into a third story with emergent structure and meaning.

We are at the beginning of a period of research into the principles of double-scope blending, the neurobiological mechanisms that make it possible, the pattern of its unfolding in the human infant, and the path of its descent in our species. This is a challenging research program, one that will require the combined efforts of cognitive neuroscientists, developmental psychologists, evolutionary biologists, and scholars of story. Any child can pluck forbidden fruit, but we adults are only now starting to explain it.

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