Head and Heart in Preventing Religious Radicalization

Sara Savage

This is the first of a group of chapters that will look at practical applications of the psychology of head and heart, building on the theoretical framework set out in the last chapter. The focus of this chapter will be religious radicalization. Emotive topics such as the twin towers, sectarian violence, Islamist militancy, and Christian fundamentalism seem to suggest that religious radicalization emerges when the heart takes over from the head. However, I will propose the more subtle hypothesis that it arises from a separation of “head” from “heart.” The extremes of religion represent an intensification of broader trends in which we all play a part—a bias toward the “head” in religion and Western globalized culture more generally. Ironically, when the head is split off from the reasons of the heart, it leans toward greater aggression in order to defend sacred values.

Precise distinctions between fundamentalism, radicalization, terrorism, and extremist violence are subjects of endless debate and reflect the standpoint of the definer. Each definition is valid for some contexts, but not others. Given how interminable debates about these terms are, I am content that these distinctions are beyond the remit of this chapter. I hope I will be forgiven for considering radicalization in religion as a broad contemporary trend—while acknowledging that it takes many different forms and can pertain to any belief system. The approach to radicalization that I elaborate in this chapter was developed with
my colleagues in the Psychology and Religion Research Group at Cambridge (Savage, Liht, and Williams 2011; Savage and Liht 2010), and from this work we developed an empirically assessed prevention method (Savage and Liht 2010; Boyd-MacMillan and Savage 2013). To this model I bring the lens of recent neuroscience, taking a new look at what the prevention of radicalization reveals concerning reasons of the heart.

Our approach to radicalization is based on the idea of complexity in thinking, a psychological construct developed by Peter Suedfeld and colleagues (Suedfeld et al. 2003; 2006 termed integrative complexity (IC). Integrative complexity concerns how complexly we perceive the social world, whether we see the world in black and white dichotomous categories (low IC), or whether we are able to see some validity in competing viewpoints (the differentiation aspect found at moderate IC levels), or whether we are able to perceive linkages between different views or dimensions within a higher order framework (the integration aspect of higher levels of IC). Decades of research in IC show that when levels of complexity in thinking drops from the thinkers’ normal baseline, violent conflict between the parties is predicted (e.g., Suedfeld and Tetlock 1977; Tetlock 1984; Guttieri, Wallace, and Suedfeld 1995; Suedfeld and Leighton 2002). According to one model, what motivates people to raise the complexity of their thinking is their desire to maximize more than one human value when both these values are in tension, and when they are deemed comparable and important (Tetlock 1986). Complexity in values underpins the ability to think in complex ways, and this is key to our approach.

We argue that extremist ideology of any kind avoids complexity. When human values are in tension, extremist discourse tends to focus upon a single value (such as justice for the oppressed) with regard to the issue at hand. This one value acts like a magnet, drawing what can be thought about the issue, like metal shavings, tightly around this one value. Other human values, such as freedom or achievement values, are left out of the picture, and a more simplified version of social reality
results. Toward the end of this chapter I will describe how our approach to enhancing integrative complexity (Savage and Liht 2010) works to build resilience against religious radicalization, and how both head and heart are involved. But first, a foray into what recent neuroscience reveals in regard to these matters.

A Perspective from Neuroscience

In the previous chapter, Fraser Watts indicated that “head” and “heart” can be formulated theoretically in terms of dual-process models of cognitive architecture (such as Interacting Cognitive Subsystems), or through models based on the structure of the physical brain such as the brain lateralization theory proposed by McGilchrist (2009). Here I will pursue the latter, relating neuroscience studies to radicalization and its prevention.

Studies from cognitive neuroscience go a long way to answer a question that has increasingly perplexed me: given the social, cognitive, and employment costs of even the early stages of radicalization, why is it so easy for well-meaning people to become radicalized? A partial answer, I propose, lies in the dynamic tensions that underpin normal brain processes. Conversely, it is also possible for people to deradicalize, and neuroscience provides fascinating insight to that as well.

In bringing the lens of cognitive neuroscience to bear on this topic, my intention is not to shift our focus from the thinking, valuing, and meaning-making of human beings in favor of a reductionist, biologically based account. Any cognitive processing is unavoidably dependent upon the neurological substratum that supports it, and it is enlightening to understand how this works and to bring this alongside psychological accounts. The question of whether ultimate causation is due either to “disembodied” cognition, or to the biology of neurons, is moot. The plasticity of the brain means that the exercise of our thinking will, over time, lead to the development of the neuronal networks to support it, and this becomes self-perpetuating once these particular
pathways are ready and waiting to process this particular kind of cognition. Well-carved pathways mean that thinking “more of the same” becomes easy. Likewise, any changes in our thinking will diminish some neuronal pathways while promoting others—even over relatively short periods of time (Pascual-Leone 2001). The brain is not unlike a muscle in operating a “use it or lose it” policy. Causality here should be imagined as a spiral that can move in both directions: spiraling upward with increasing neuronal power following copious practice of relevant cognitions, or spiraling backward if those pathways attenuate through lack of use.

With any complex cognitive processing, the human brain can be imagined as a symphony in which all parts of the brain are dynamically involved. Yet within this complex symphony there are three fundamental oppositional forces, including the opposition referred to in everyday language as between “head” and “heart.” Some processes in the brain inhibit processes arising in other parts of the brain, so that the activity of relevant regions of the brain can come to the fore in order to meet the demands of the current task. Hundreds of studies in neuroscience support a view of the functioning human brain as system of three opponent processes:

1. *Top-down*—pertaining to the oppositional tension between the higher-order thinking of the more recently evolved neocortex and the deeper limbic region that is the home of emotion and more basic, primitive thinking categories.
2. *Right-left*—pertaining to the oppositional tension between the right hemisphere and the left hemisphere with their different ways of paying attention to reality.
3. *Front-back*—pertaining to the tension between the frontal lobes (where personal identity, deliberate choice, and our sense of self in relation to others arises) and the hind brain (including the cerebellum where automatic processing occurs so quickly, unconsciously and powerfully).

In the next three sections I explore how these three opponent pro-
cesses deepen our understanding of radicalization and its prevention. In my view, they help to explain why it is so easy for highly moral people (Ginges et al. 2011) to become radicalized, despite the costs. Stating the obvious, these normal brain processes make radicalized cognition possible. There are wider implications from this, too, for our “everyday thinking,” given that these opponent processes are normal features arising from brain architecture; they are not just features of the radicalized.

It will be convenient to begin with second of these opponent processes, that between the left and right hemispheres. Simply put, the left-brain tends for many people to correspond to “head” and the right brain to “heart.” Neuroscience helps us to understand more precisely what is involved in the contrast between head and heart, and how the relationship between these two hemispheres can polarize, as I argue is the case in radicalization. I will then indicate how this is complexified by the other oppositional tensions between top-down and front-back. That will lead into a summary of our approach to radicalization, and the intervention that illustrates this theoretical perspective. Finally, I will conclude this chapter with a thumbnail sketch of the radicalized mind in our contemporary context—a cultural context that is slanting all three opponent processes (if we are to believe the hundreds of studies coming from neuroscience) in directions that favor certain kinds of separation of “head” from “heart.” These emphases provide fertile conditions not just for religious radicalization, but also for extremes in “everyday” thinking.

**Right-Left Opponent Processes**

These opponent processes arise from the specialization and bifurcation of the human brain’s left and right hemispheres.

The widely acknowledged popular distinction between “head” and “heart” ways of knowing accords with a number of dual process cognitive models that distinguish between “head” rational, linear, word-based knowing and “heart” emotional, implicit, embodied, interpersonal
knowing. There is now huge empirical evidence from neuroscience that these two different ways of processing information arise from the right and left hemispheres’ different specialisms, and this makes good sense of this popular and psychological distinction. As stated in the beginning of this chapter, radicalization does not emerge simply from an overflow of emotion, as one might presume when face-to-face with the vehemence of extremism. Rather, I argue that radicalization is fostered (along with the top-down shift sparked by threat) by a culture-wide separation of head knowing from heart knowing. This does not involve just a simple dichotomy of thinking versus emotion, but rather a distinction between the kinds of emotion and kinds of thinking that pertain respectively to the right and left hemispheres.

Iain McGilchrist (2009), in his highly regarded review of hundreds of neuroscience studies, argues that among primates it is only in humans that the right and left hemispheres of the brain operate quite independently. Humans have, as it were, two “brains” with distinct ways of paying attention to reality, producing two different worldviews and two different “agendas,” from which one consciousness emerges. McGilchrist argues that the two hemispheres, whose relationship is marked by the need for separation and mutual inhibition as well as a
degree of intercommunication, are in humans operating more independently now than in previous human history, with an increasing shift toward left hemisphere dominance.

The initial seeds of this shift in human history are glimpsed in the post-Socratic philosophers with their search for reliable foundations for knowledge. The Reformation of the sixteenth century, the first great search for certainty in modern times, is a noticeable turning point away from symbolic and implicational processing toward more word-based, conceptually abstract, “left-brain” processing. McGilchrist goes on to argue that since the Industrial Revolution, we have created a left-brain world through architecture, art, science, and technology. That “left-brain” environment then shapes how we think and what we see—inescapably so for a large part of the world’s population living in urban areas. The imprint of this left-brain world unsurprisingly shapes how we “do” religion. Not that the left hemisphere should be personified as an “agent” somehow taking over the human brain; there are swings back and forth between right and left hemisphere dominance over the course of human cultural evolution when the dominance of one hemisphere ceases to be adequate for the challenges of the day, prompting a swing back to the other hemisphere’s specialisms (McGilchrist notes the swing to the Romantic Movement at the height of the social dislocations of the Industrial Revolution). This back and forth movement between hemispheres becomes salient in the next sections.

Though much more thoroughly detailed by McGilchrist, we may present some durable generalizations arising from neuroscience studies concerning left-right distinctives. The left hemisphere deals with pieces of information in isolation, whereas the right deals with the information as a gestalt—as a whole. The left hemisphere specializes in linear, analytic processing; the right hemisphere proceeds with parallel processing from sense perception, bodily states, emotion and thought. The left “brain” is focused on what it already knows, filtering new information through its preformed schemas, categories, and scripts, in accordance with research in cognitive psychology supporting the
ideas that humans are cognitive misers who seek to protect existing knowledge systems against dissonance (for example, Janis 1982; Herek, Janis, and Huth 1987; Greenwald 1980). In short, the left hemisphere is somewhat closed to new information as it seeks to maintain its conceptual system based on clear-cut categories and logical rules. Existing abstract ideas are prioritized over new information coming from the senses. This is not to disparage the crystal clear thinking in which the left hemisphere excels; the advances of science and technology are thanks to it.

In contrast, the larger, heavier, more powerful right brain seeks what it does not know. It is interested in the “other” and is highly connected with the rest of the nervous system, with bodily states and emotions. The right brain deals with real life particulars, not abstractions. The right brain is interested in faces and individuals; it is the seat of empathy, moral sense, and self-awareness conceived in relation to others. The right brain takes a broad, contextualized view and puts things into a wider perspective. The right brain is crucial to living in the real world; for example, stroke patients can continue to function with an impaired left brain, but they cannot function at all with an impaired right brain. It is able to accommodate opposite views, give them perspective, and weave them into a wider gestalt.

The most crucial difference is the way the two hemispheres pay different kinds of attention to the world: the right pays a broad, contextualized, particularistic yet networked attention; the left pays a narrow, focused, categorized, instrumental attention (McGilchrist 2009). The kind of attention we pay to the world alters the world we live in. Inevitably, we bring something to the act of perceiving, then we behave in accordance to how we “see” the world. Within limits, that world gradually takes shape around us.

Both right and left hemispheres can “do” religion, but as Fraser Watts suggests in the previous chapters, they do religion in a different manner, just as the hemispheres “do” language and mathematics, but in different ways and to differing extents. The more complex a task is, the more
this will involve a symphony of processing using many regions of the brain, including both hemispheres. Even so, there is a “winner takes all” tendency in the brain, whereby the hemisphere that is “best” at doing something at a particular time will take upon itself the whole of that task, even though there are costs to that strategy. Tremendous cognitive advances have resulted from greater left hemispheric independence and dominance, but the downside is a greater tension between brain hemispheres, and thus greater instability (with attendant costs such as an apparently growing prevalence of various schizoid conditions in which emotion tends to be flattened out or misaligned with thinking).

Individuals differ in terms of which hemisphere is dominant, but in most people, the left hemisphere, dealing with language, abstract reasoning, categorization, and focused attention, is the dominant hemisphere. The analytical left hemisphere drives modern culture with all its phenomenal technological achievements, and right brain specialisms are now marginalized in education and culture. Many of these right-left distinctives are pertinent to our focus here on religious radicalization.

What does intensified left hemisphere dominance look like in religion? How does this relate to radicalization in religion? The next section reviews studies of fundamentalism and radicalization in this light.

Left-Brain Religion

Since the upsurge of fundamentalisms from around 1979 onward, sociologists have noted the instrumental use of modern technology (radio, TV, cassette tapes, video tapes, and Internet) to spread the message of so-called “backward-looking” fundamentalisms around the globe. Deeper analysis reveals that, far from being a throw-back to earlier mythical and symbolic ways of religious understanding (as often portrayed in the media), the footprint of modernity is evident in the kind of thinking in which fundamentalisms excel.

Shepherd (1987) noted that an “engineering,” “black and white” mentality exists among Christian fundamentalists. Barr (1981) observed how Christian fundamentalism stresses the material-physical accuracy
of the Bible, and how it takes its method from a Newtonian model of science. Whereas many Christian fundamentalists are antievolutionist, they display a preference for hard facts and proper rational techniques. Biblical authority will always supersede scientific authority, and if that entails denying evolution, so be it. But objective truth is preferred, and this is what the Bible is considered to be. Fundamentalists’ epistemological strategy is to find an irrefutable starting position, and then proceed from there with clear logical rules. This is achieved through structuring the fundamentalist belief system around a central authority belief—the plenary version of belief in scriptural inerrancy (it is the words, not just the meaning that are deemed true). This foundational inerrancy belief is deemed sacred and beyond refute; it serves to legitimate all other fundamentalist beliefs in a one-way direction, with no “back talk” returning to modify the authority belief (which an open system of thinking would allow, Rokeach 1960). Once this, admittedly, circular premise is accepted by adherents, fundamentalist thinking then proceeds logically and systematically (Hood, Hill, and Williamson 2005).

A similar picture emerges from a study I carried out into the moral reasoning of fundamentalists and nonfundamentalists (Savage 1998; 2008). This research showed that the fundamentalist participants emphasized the person, action, or issue in isolation, apart from the social context (arguably a left hemisphere preference), while nonfundamentalists emphasized the person, action, or issue in relationship with others or embedded within a wider social context (arguably, a more holistic, right hemisphere specialism). It seemed to me that the perspective or “lens” applied to the moral problem preferred by fundamentalists (seeing persons, actions, or issues in isolation) is in line with the philosophic stance that we can know things in and of themselves (following empiricists such as Locke and Scottish Common Sense Realists), and that language, perception, and thinking all work to economically and veridically relate this word to that reality (a one-to-one correspondence theory of language). Harris (1998) also argues
that this epistemology informs Christian fundamentalism in a diffuse, background way and represents the substratum upon which a theory of literal scriptural inerrancy could most easily be built: the words equal truth. In contrast, the selective “lens” used by nonfundamentalists accords with postmodern, contextual theories of language. Both fundamentalist and nonfundamentalist perspectives on the moral problem are an example of the way “hot” commitments can drive supposedly “cold” cognitions (Haidt 2006). We see the world according to the way our intuited philosophic commitments predispose us, and fundamentalists perceive the world in a way that manages to conjoin a commitment to scriptural inerrancy with a sciencelike, left hemisphere approach.

A preference for sciencelike arguments also colors recent radical discourse. Ironically, Islam (which unlike Christianity, suffered no historical conflict between science and religion) now seems to be adopting a similar creationist stance with its own version of creationism promoted worldwide from a base in Turkey. This new Islamic creationism borrows heavily from the “sciencelike” arguments in contemporary Christian creationism concerning Intelligent Design. Islamic tracts handed out on university campuses typically stress the rationality of Islam, and radical versions of Islam deploy their most scathing attacks against traditional Muslim symbolic ritual practices. Sufi brotherhoods, once the dominant means of the spread and practice of Islam, are considered “bida” (reprehensible innovation) by radical Islamists. More recently, Gambetta and Hertog’s (2009) research demonstrates that engineers, graduates from a discipline that proceeds on clear mathematical answers to well-defined problems, are vastly overrepresented among violent extremists.

In short, there is a modernist trend to elevate word-based, abstract, rational knowing over more implicit, symbolic knowing in both fundamentalisms and radical discourses. Monotheistic religion has always had a doctrinal (word-based) element, but prior to the Enlightenment religious knowing involved a greater balance between word-based
propositions and more symbolic, implicit forms of knowing that comprised the bedrock of traditional ritual practice (Armstrong 2000; Sløk 1996). As science has become the main model to which other sources of knowledge aspire, Western and now Islamic societies have been losing the capacity to read their texts in a metaphorical-symbolic sense. Instead, they have become preoccupied with the empirical veracity of their content. Symbolic, implicational processing is somewhat despised among radicals, and this seems to make religious knowing more inflexible.

It is fair to say that our contemporary cultural context under-resources people in how they think about their religious beliefs. In studies on terrorism, lack of religious background is one of the few consistent features that pertain to those who have carried out acts of terror. Young people without a rich religious background are more vulnerable to word-based, left-brain, modernist versions of religion that radicalizers use to promote violent mobilization. Radical religion appears to be more seamless with our left-brain dominant culture than it would be with a culture that balances the two hemispheres more gracefully.

**Top-Down Opponent Processes**

I now turn to top-down opponent processes in the brain, and outline how these are relevant to radicalization. These tensions occur between the higher cognitive functions arising from the neocortex and the activity of deeper brain structures, sometimes called the “primitive” or “old brain,” comprising the limbic system and brain stem. These latter two systems act in concert with one primary goal: survival.

The brain stem promotes our survival by regulating breathing, heartbeat, and other tasks governed by the autonomic nervous system—both in response to threats to our survival and in recovery when the threat disappears. The limbic system (or midbrain) is the region where emotions and some basic mental categories are processed. The up-down tension results from the needful inhibiting processes of the neocor-
A critical part of the emotional, limbic brain is the small almond-shaped amygdala. The amygdala is the home of anxiety and fear. Fear is saying that something is wrong. Its job is to save our lives; not to provide nuanced accuracy. Research by neuroscientist Joseph Le Doux (1996) shows that the neocortex’s neuronal messages are weaker and slower than the fast, powerful fear messages of the amygdala. So, fear and anger (often a response to fear) can easily overrule thinking; they really do shout louder when we feel threatened. Other studies show that under conditions of stress, the blood flow in the brain is sent preferentially away from the frontal cortex (the site of conscious reasoning and sense of individual selfhood) and toward the deeper parts of the brain, thus enabling faster, more automatic processing in response to threat, while our higher-order thinking goes somewhat “blank” (McGilchrist 2009).

In psychological studies, a recurring finding is that stress or fear states produce cognitive constriction; people are less able to think complexity. Peter Suedfeld and colleagues’ empirical work in integrative complexity (2003; 2006) shows a clear relationship: when people...
undergo long-term stress or perceive threat to their important values, significant drops in integratively complex thinking (IC) follow. Low IC is hardly unusual: around 50 to 60 percent people measured in dozens of studies receive an IC score of around 1 (black and white thinking), suggesting floor effects to the coding system. Stress is not the only precursor for low IC (as measured by IC coding in the Baker-Brown et al. 1992 coding framework). Contexts where comparable and important values are not in tension simply don’t require higher IC (Tetlock 1986). Nevertheless, threat or stress does make IC drop from the thinker’s usual baseline, and this feature seems to link with the top-down opponent process.

It must be said that integrative complexity researchers themselves refrain from explaining why this drop occurs; they simply observe that IC does drop in response to stress or threat. They then observe the behaviors and real world events that ensue (such as intergroup violence following a drop in IC). But it is not far-fetched to link the findings of integrative complexity research to the stress literature and recent imaging studies. These studies show that the brain stem and limbic (emotional) brain are particularly active in fear or stress states. The “emotional” limbic brain evolved to respond quickly and powerfully to perceived threats (Haidt 2006)—the fight/flight/freeze response that both mammals and modern humans exhibit. The limbic system works on very basic mental categories such as predator, mate, offspring, food, ingroup, and outgroup—categories pertinent to bonding, safety, and survival. The limbic region is not directly linked to the outside world through the five senses, nor is it able to distinguish past from present. The limbic brain cannot make qualified or complex distinctions the way our highly evolved thinking neocortex can; the real world “out there” is available only in a limited way. If the opponent tension is tipped away from the neocortex toward these deeper subcortical limbic regions, complex thinking is diminished.

A large body of research over four decades by Inglehart and Welzel (2005; 2007) indicate that threat to traditional values is a widespread
experience for people living in the globalized condition. Under the changes brought about by modernization and globalization, different cultures, traditional and postmodern, are rubbing shoulders in new and invasive ways. This research shows there are significant changes to value priorities brought about by modernization and globalization: traditional religious values change to secular rational values and survival values change to self-enhancement values (Inglehart and Welzel 2005). In response to this shift, people who feel their traditional worldview and values are under threat tend to retrench to a value monist position that conserves tradition and promotes the self-transcendence values of traditional cultures (the setting aside of personal enhancement in order to conform to social duties). This shift to a single value pole is evident in radical discourse. It has many adherents because of the way it protects people from the uncertainty states brought about by the competing value priorities between, for example, Western host (postmodern) and immigrant (traditional) cultures.

Intergroup conflict and misunderstanding can spiral upward in a series of mutually threatened perceptions and reactions; low IC afflicts both sides of most conflicts. Hormones and other long-acting chemicals released into the body during fear or anger can then return to the brain and lock it into that state. In this state, the radicalized binary message of “ingroup versus outgroup,” “they are attacking us; we must attack them” makes sense to the hearer. Past and present are not distinguished by the limbic system; the Crusades are very much alive and present-day in the radical imagination, much to the surprise of Westerners who think it is “all in the past.”

Further, radicalizers seek to cause stress in their hearers by presenting traumatizing images on the Internet: harrowing accounts of persecution of the ingroup or examples where the purity of values is threatened. Radicalizers seek out young people who are experiencing the stress of exclusion, bullying, or some other kind of “cognitive crack,” which provides an entrée for their low IC radical message (Wiktorowicz 2005). It is unfortunate that negative stimuli has such power.
Research in the Prospect Theory paradigm (Tversky and Kahneman 1981) shows that this bias is quite universal: increases in the domain of loss are evaluated as more costly and emotionally salient than equivalent increases in the domain of gain. Christopher Peterson and Martin Seligman (2004) consider that the negative biases of the human brain arise from the pressures of evolution during the Pleistocene ice age. Natural selection favored human brains that were hyperalert and reactive to negative stimuli such as danger or loss under the hostile environmental conditions. This helps to explain the ease with which radicalizers find ready listeners among those undergoing some kind of stress, threat to values, or experience of injustice.

Given these arguments, we envision that a shift from neocortex to some degree of limbic dominance occurs within the process of radicalization. Further, there is at least one known interaction that links top-down opponent processes to left hemisphere dominance. Imaging studies show that stress inhibits the spread of neuronal activity exactly in the manner that favors the very tightly focused kind of attention that the left hemisphere specializes in. So rather than activating the broad, holistic attention of the right hemisphere to the complexities of lived reality, stress and threat to values (with its impact on subcortical amygdala and limbic activity) predisposes people to the left brain's style of paying attention to the world. Thus, the shift to limbic functioning prompted by stress intensifies an already pervasive cultural preference for the left hemisphere's "take" on reality.

**Front-Back Opponent Processes**

The third major category of opponent processes in the brain seems to play a role in the more advanced stages of violent radicalization. Front-back opponent processes involve the inhibiting effects of the frontal lobes (that enable a sense of self) on the posterior cortex.

Our sense of individual selfhood arose in evolution as both frontal lobes expanded and provided the necessary cognitive distance to
observe the self as distinct, enabling humans to move beyond being fused with the social context or wider natural world. While both right and left frontal lobes confer the necessary distance to observe and perceive the self as distinct (and morally aware), it is the right frontal lobe that perceives the self in relation to others and perceives another’s point of view. The right prefrontal cortex is the most highly evolved and most extensive of the two frontal lobes, and concerns holistic thinking and awareness of self in relation to others. Part of the posterior cortex is the cerebellum, the most densely neuronally networked region of the human brain, with approximately one million times more processing power than the neocortex (Begley and Schwartz 2002). Here our automatic processing occurs, liberating conscious cognition from an otherwise huge overload so that it can be focused and deliberate. We are able to manage walking over uneven terrain while deep in conversation because walking is an automatic skill. Habitual behaviors are rapid and bypass consciousness. Addictive behaviors are similar, with a cocktail of processes pulling the individual away from conscious choice. The front-back opponent processes mean that, when slanted frontally, we have a modicum of moral “free will,” identity, and empathy. If slanted toward the back, these diminish in favor of the vastly more powerful automatic processing of the hind-brain, at least temporarily. The
frontal lobes confer the ability for the self to be understood in relation to others, and to know that others are real people—like ourselves. This can be thought of as another version of “heart knowing,” which can be dulled by the pull of automatic behaviors and the powerful drive for release and pleasure.

Research and commentary linking cultural trends with front-back imaging studies seem to be at a more preliminary stage, so making links between the field of radicalization and the front-back tension is even more exploratory than what I have offered in the previous sections. Later stages of violent radicalization involve, according to terrorism studies, engagement with a totalist group (Crenshaw 2000)—a group that gains an almost “total” influence upon its members. Separation from wider society and deep personal ties (Ginges et al. 2011) is pivotal in violent radicalization. These sequestered conditions foster polarization toward the most extreme ingroup view (Fraser et al. 1971). In totalist groups, the group leader (usually male) earns the role of being leader because he exemplifies the most extreme position. The pressures to conform to group norms lead to more extreme views being adopted by its members, while separation from family and wider society means that sources of disconfirming evidence are cut off. It is not hard to adopt inflated views about the rightness of the ingroup (Janis 1982), followed by dehumanizing views toward the outgroup (Crenshaw 2000). From that point, normal moral barriers to killing can be overcome because those who are deemed enemies are “not really human anyway.”

Immersion in a totalist group brings about de-individuation of its members, according to in-depth interviews carried out on failed terrorists (Crenshaw 2000). The individual’s personal sense of identity and their usual sense of moral responsibility are eroded as the individual fuses with the group, becoming “one” with the group, while handing over moral responsibility to the leader. It must be said that an individual within an extremist group is likely to be immersed in a left hemisphere dominant milieu: ideologies are by nature word-based and geared to instrumental action. They are likely also to be tipped
toward limbic, threat-driven overload: "the purity of our values are under threat!" In sum, the front-back shift described here in the context of extremisms probably occurs alongside shifts in the other two opponent processes (left-right and top-down) in an unanticipated but malign concatenation.

Admittedly, connecting the front-back axis of opponent processes with these latter stages of violent radicalization is a bit of a leap, although a great deal of initial radicalization happens over the Internet. There is growing concern about the de-individuating impact of communication technologies and IT on young people. Neuroscientist Susan Greenfield argues that young people's brains may be altered by their immersion in modern technology (2003), slanting front-back opponent processes toward the automatic hindbrain. The average young person spends 7.5 hours per day in front of a computer screen, while face-to-face social relationships are being replaced with “virtual” relationships. Increasingly violent and realistic video games are empirically linked to shorter attentions spans, decreased communication skills, and a possible decrease in the sense of self. Video games are all about the task, and winning or achieving the goal releases a rewarding pleasure-burst of the neuro-chemical dopamine. Dopamine makes you feel good, but too much dopamine damages the prefrontal cortex, resulting in a limited ability to understand much beyond the immediate moment, along with a diminished sense of self and other. Seeking short-term rewards drives the brain to seek ever-stronger sensations; studies on Internet porn addiction indicate this tendency, along with shrinkage in the frontal cortex. In the virtual world of young people today, seeing life as a series of logical tasks that merely demand immediate action may be the result of extensive time spent in video games and Internet.

Though initial radicalization is known to often happen over the Internet, it is real people who are the entrée into violent extremism, as shown by Marc Sageman’s (2004) study in which every known violent activist supporting or carrying out acts of terrorism in the UK was linked by social networks of friends, family, and acquaintances—networks
that fostered and abetted their extremism. Ordinary young people
today immersed in video games and social networking sites seem a
less extreme pathway toward de-individuation in comparison with
totalist groups, but both may be engendering a similar loss of a sense
of self and relatedness to other people.

A surprising finding begins to make sense in the light of the front-
back opponent processes. Prior to carrying out an attack, it is not
unusual for terrorists to engage, not so much in prayer, but with Inter-
net pornography sites. Researchers have been surprised to find these
imbedded within or linked to radical sites. It is doubtful that this prac-
tice is explicitly encouraged within strict puritanical radical discourse
itself. However, the emotional and social detachment, sensation blunt-
ing and reward seeking that immersion in pornography sites produce
are probably not at all deleterious to terrorists achieving their specified
goals.

A connection to the top-down opponent process is also salient here.
Social isolation is linked to strong amygdala responses to perceived
threat. Whether from living in a virtual world, or through immersion
in totalist groups entailing separation from wider society, research
shows that social isolation leads toward exaggerated responses to per-
ceived threat.

Even with the recent advances in neuroscience, the human brain
remains a mystery. We must assume that along with the opponent
processes mentioned here there are other processes yet unknown that
may complexify the picture painted here. In the absence of greater
knowledge, a full-blown pernicious cycle seems to be possible: social
isolation and de-individuation (the front-back tension) links to the
top-down tension via an increased response to threat. This top-down
shift toward limbic functioning, away from complex neocortex func-
tioning, restricts the spread of neuronal activity exactly in the manner
of the left hemisphere's tight attentional focus. The shift to the defended
left hemisphere means that the potential for the right hemisphere to
Head and Heart in Preventing Religious Radicalization

offer up wider understanding, empathy, connection, larger perspective, and the ability to hold in tension opposing human values is lost.

Preventing Radicalization through Enhancing Integrative Complexity

While young people usually mature over time toward greater cognitive complexity, we think that most radical groups run contrary to this natural developmental pathway toward complexity and actively block the ability to find trade-offs to maximize more than one human value at a time. The binary, black and white structure of the radical narrative (whether Islamist, Christian fundamentalist, or sectarian) is maintained by the compelling draw of a potent moral value (such as justice for the oppressed community or purity in religion) to the exclusion of all other values that could be in tension with it (such as liberty or free speech). The structure of simplified thinking heightens “us versus them” hostilities, and this is maintained by excluding dissenters from the ingroup.

Research in persuasion shows that people who have a more complex view of the social world are not attracted to low IC, black and white messages. Having a more complex view of the world, we argue, protects against radicalizers’ single-value, low IC message—as it is perceived as less convincing and less attractive. High IC helps people to resolve conflict and to see other people’s viewpoint, while not sacrificing their own. Other options to solve problems become possible, and people do no need to resort to violence as the only way.

Based on these principles, we have developed a way of fostering complexity in values and thinking through our IC courses. We assess these interventions by measuring participants’ integrative complexity, along with their spread of values, evidenced in their verbalizations, before and after the course. One such course is entitled Being Muslim Being British (Savage and Liht 2010), an eight-session prevention
course designed to expose young participants (ages fifteen and older) to a range of different value priorities that influential Muslims embody, and to structure group activities that allow participants to experiment with taking different positions along value continuums, thus enabling them to explore all value positions on an issue, free from criticism or social pressure. After participating in the course, the statistically significant benchmarks observed in the group discussions before and after seven pilot courses are as follows. IC is raised from IC level 1 (seeing the world in black and white, “us versus them” as in extremist ideology) to IC level 3 (being able to perceive that other people’s values and worldview have some validity, without having to sacrifice one’s own important values). A greater range of values is evident: the extremist single value structure is overcome. People are able to balance values that are in tension rather than succumbing to the single-value structure of extremism. Conflict resolution style shifts significantly to win/win strategies (collaboration and compromise) away from compete, accommodate, or avoid conflict styles (which can store up problems for the future and feed ongoing conflicts), evident in written moral dilemmas. Religious values increase, but they do so in a way that is “universalizing,” that is, respecting the value of all human beings.

Given the arguments put forth so far, we think our IC model of prevention can be applied to a range of extremisms, as many will share the structural features described in this chapter. An IC for Churches course has been created and successfully assessed to address theological worldview clash, and other courses are underway: an adaptation of Being Muslim Being British for use in Pakistan, a new course to address sectarianism in Scotland, and an all-extremisms course (including right-wing and gangs) for schools in the U.K. is in the planning stage. IC courses such as these are designed for primary prevention—in other words, they are designed to reach the broadest population to protect from radicalization or worldview clash, before extreme “symptoms” are evident or advanced.
In our approach (Savage and Liht 2010), we assuage threat to values through using both “head” (rational, linear, word-based) and “heart” processing (a more holistic, implicit processing linked with emotions and bodily states). I stumbled upon the secret of using both head and heart ways of processing information several years ago when first piloting the raising of IC, working with bishops and senior clergy of differing theological orientations (Boyd-MacMillan, Savage, and Liht 2008). The bishops and clergy participating in our IC workshop showed complex thinking in regard to their own worldview, yet they remained “stuck” in their black and white thinking in regard to the “theological other.” Every “head-centered” teaching strategy I tried in the workshop failed to get beyond this “stuckness.” At that time I was ignorant of the insights coming from neuroscience that might have been relevant to this task, but I acted upon an intuition, and invited the participants to get out of their seats and move slowly around the room “like monks in the cloister,” hoping that changing participants’ bodily states might spark a change in their cognition. A glimmer of improvement ensued, and this led to our eventual inclusion of activities that engage the right hemisphere, using Theater of the Oppressed–inspired pedagogy (using mime, movement, visual symbols, narrative, role-play, and drama, Boal 1998), as I explain next.

The first step in our method involves enabling people to perceive multiple perspectives on social, moral, and religious issues (the beginning of differentiation). We resource this step by showing filmed interviews of well-known speakers who present an array of competing viewpoints on “hot” topics often used by radicalizers to increase cleavage between, for example, Muslim and Western worldviews. In our IC in Scotland program (Boyd-MacMillan and Savage 2013), we enable differentiation on topics relevant to Protestant-Catholic conflict in a similar way. Each viewpoint is labeled in a neutral way and presented as a valid response to an important underlying question. To motivate the extra cognitive work, IC requires we create the conditions that encourage value pluralism. We abstract the viewpoints and plot these
along a pertinent spectrum of values—such as economic justice versus economic freedom—each value pole having importance for human life (Tetlock et al. 1984).

This “laddering” down to explore the deep values underlying the viewpoints leads to the second step: the ability to embrace a wider array of values in one’s moral reasoning (the second part of differentiation). While extremist ideologies concentrate, for example, on the magnetic pull of one value, such as “economic justice,” to the exclusion of “economic freedom,” we aim to enable young people in our courses to explore the “magnetic pull” of both ends of a value spectrum (e.g., justice and freedom), to discover where they feel most at home. Exploring a value spectrum involves understanding the dynamic, real-world tensions that are incurred in the outworking of both ends of the values spectrum. We have found that to enable greater specificity in thinking (to avoid black and white categorization) we encourage participants to “think with their bodies and emotions” (Williams et al. 2000). We do this by inviting them to physically explore all points along a value spectrum, laid out across the floor, and by standing in different positions, to imagine the pushes and pulls of the opposing values, in order to discover where they as individuals want to stand, and make their own value trade-offs. In this way, young people avoid threat to their own important values on the issues exploited by radicalizers, and thus avoid the cognitive constriction that results.

From here, the next step of IC becomes possible: the finding of linkages and higher order syntheses of apparently opposing perspectives (the integration aspect of IC). Participants explore various integrations on an issue using role-play or mime. All this happens with the help of an IC-trained facilitator who protects participants from undue stress through leadership that protects boundaries and is free from criticism or judgment. As the learning experience moves back and forth between both “head” and “heart” processing, limbic overload leading to cognitive constriction and “stuckness” in the left brain are avoided. The right hemisphere is enabled to take in new information via the senses, felt
Facilitating Left-Right Hemisphere Communication in the Prevention of Radicalization

Our experience of running IC courses suggests that integratively complex thought involves a back and forth interweaving of “head” and “heart” knowing. Communication between left and right hemispheres is also suggested by the robust and reliable coding frame developed to measure IC (Baker-Brown et al. 1992). Using this coding frame, IC coders measure changes in the two aspects of IC (the ability to differentiate and the ability to integrate). Most people start out with low IC: the social world is viewed through simple, black and white, clear-cut categories, seen from only one evaluative viewpoint (verbal data showing these features is coded as IC code 1). Black and white thinking indicates a left hemisphere concern with keeping categories clear-cut. An initial gain in IC is apparent through implicit references to more than one viewpoint (the beginning of differentiation, IC code 2). These hinted, intuited perceptions suggest a right hemisphere approach, with its broader, implicational focus. When these implicit perceptions become explicit, with a clear articulation of differentiation applied in a rulelike manner, a gain in IC is evident (code 3), suggesting a left hemisphere, clear-cut focus. Further gains in IC are seen in verbally implied linkages between the differentiated array (IC code 4), suggesting a broad right hemisphere focus. When those glimpses of linkages or integrating frameworks are made verbally explicit in a rulelike way (IC code 5), knowing seems now to have passed once again to the left hemisphere for organization and clear articulation. All this suggests a weaving back and forth between implicit and explicit ways of knowing as IC progresses toward greater complexity (with a maximum IC score of 7, Baker-Brown et al. 1992). McGilchrist (2009) similarly argues that
with any cognitive processing there is a requisite passing back and forth of information from right to left hemispheres.

In all this, right hemisphere knowing is primary. In order to know anything at all, argues McGilchrist, the right brain has priority, as the right hemisphere first experiences and presents lived reality in all its particularities, ambiguity, emotions, relationships, and embodiment. The right hemisphere offers its way of paying attention to reality to the left hemisphere, which then re-presents, abstracts, and categorizes the right brain’s implicit, gestaltlike knowing into a clear-cut conceptual system, which can be articulated and held in focused awareness for instrumental purposes (such as using an abacus, or landing on the moon). Far from requiring the silencing of the right hemisphere’s implicit “heart” style of knowing in favor of the left hemisphere’s explicit rational “head” knowing, McGilchrist (2009) argues that thinking requires both right and left hemispheres. IC would be no exception. The right hemisphere “gifts” the left hemisphere with its rich, networked, embodied presentation of reality. Without the left hemisphere’s instrumental “grasp” of what the right hemisphere offers, we would not be able to make clear, reliable use of our knowing. The problem we face in modern culture is that the increased dominance and separation of the left hemisphere means that once the information is organized in the left hemisphere, we easily can get stuck in that hemisphere’s defended, fixed conceptual system, and the optimal continued back and forth, right-left-right-left communication is curtailed. In Western contemporary culture, the left hemisphere tends to silence the foundational role the right hemisphere plays: after all, it is the left hemisphere (the more language-oriented of the two) that is the mouthpiece!

In our prevention model based on IC and values complexity, once differentiation is achieved (for example, in the value spectrum activities described above), we use embodied group activities such as role-play and mime to further explore various integrations of the differentiated viewpoints. The role-plays are designed to enable participants to try out different integrations until the participants are satisfied their solution
to a social problem is true to their own values, as well as “true to life.” In doing this, all viewpoints are given consideration, even the extreme ones, but without having to sacrifice other competing values—which is required when people are expected to adopt every aspect of a radical position. For example, one activity involves participants evaluating two different modes of political decision making: one democratic (involving the value of self-direction) and the other religious, for example, under a Caliphate (involving the value of religious tradition and conformity to social roles). When first describing these two decisional methods verbally, no commonalities or ways of relating them was found by participants; they were seen as black and white oppositional contrasts. But when the participants created nonverbal mimes to exhibit both modes of decision making (and performed them for “a visiting Martian”), the mimes enabled participants to see with greater detail the areas of commonality between democratic and religious modes of decision making: more information became available through acting it out. From this kind of experiential learning, participants are able to reflect upon the tension between consensus and leadership present in both systems and to articulate what they have learned, freed from value monism and the social pressure arising from radical discourse that presents democracy and theocracy as completely alien to each other.

Another role-play explores the impact of the tension between communitarian versus individualist pressures, acted out in role-play in which different male suitors try to “sell” themselves to “Aisha,” a potential bride, while other group members play Aisha’s parents, family, and community/religious leaders who seek to influence her. The different roles allow the enacting of communitarian influences, pitted against Aisha and her friends who are arguing for individualism in regards to marriage choice. This activity is geared to enable participants to explore new ways to find integrations, middle-ground value trade-offs, in order to maximize, as the participants see fit, something of both communitarian and individualist values.

It seems that as participants engage in multiple level processing
using movement, symbol, emotion, and social interaction, they move intuitively toward a sense of “gestalt” underlying the viewpoints in tension. Through the group activities, we draw on the body’s implicit way of knowing. The mind needs the body for successful engagement with the world (Damasio 1999; Hohmann 1966), and body sensations help us to know what is important to us—our own and other’s values. Bringing awareness to bodily sensations through group tasks that naturally use some “everyday” movement is effective at switching off the conceptual mode of mind with its tendency to categorize, rather than perceive the particulars (Watkins and Teasdale 2004). This helps with precision in thinking as it enables people to get beyond blunt black and white categorizations (a left-hemisphere specialism) and to attend, in a more right-brain way, with greater specificity to the complexity of the present (Williams et al. 2000). Thus the embodied activities provide a bridge to enable people to translate these intuitive glimpses into words (McMullin 2000) as they speak out their viewpoints in the role-plays.

Integrations between opposing viewpoints are achieved, according to studies in neuroscience, not primarily by arduous deliberate effort in the left hemisphere, but by a discovery of the gestalt linking opposing ideas that already exists in the lower subcortical regions, even deeper than the limbic system, nearer to the brain stem. Neuronally linked to these deep regions, the right hemisphere does not experience opposing viewpoints as antithetical. The right hemisphere is able to tolerate multiple viewpoints, multiple causality, and multiple interpretations, and hence is an ally in the goal of developing IC.

The fact that this sensed “gestalt” is available to us only in an intuited way, via the right hemisphere, accords with research on creativity in both arts and sciences (Koestler 1989). This body of research suggests that the new insights needed to resolve incompatible paradigms are often discovered—ahah!—after a long incubating struggle, rather than being achieved analytically, in a left-brain way.

What I am suggesting occurs through our prevention model is a back-and-forth communication process between the hemispheres. I
am not implying that a one-way reactionary swing to right brain processing alone would be helpful, as if tree-hugging or group encounter sessions alone could resolve our contemporary dilemmas. What is needed to resolve current value tensions in our globalized context is the back-and-forth movement between hemispheres—so that more integrated insights can be offered up to the left brain for clear articulation and testing against the constraints of reality. At the same time, the neocortex needs to be applying inhibition to the less complex categorizations of the limbic system. Together, these processes complement the activity of the right frontal lobe in maintaining a sense of self in relation to others.

As I have been arguing, it seems that integrative complexity (IC) requires this kind of synthesis between both head and heart ways of knowing. True, the right hemisphere is more densely neuronally linked with the emotional limbic system than the left hemisphere, but much of its work is to inhibit limbic arousal. What is salient for radicalization is the kind of emotional processing that is done. The emotions that the right hemisphere specializes in are sadness, empathy, and pity (which encourage perceiving another’s perspective), whereas the left hemisphere specializes in anger and mood-inflation, along with competition to achieve instrumental goals. Thinking and feeling are not mutually exclusive in either hemisphere. Thinking cannot proceed rationally without emotions, for emotions provide the meaning in regard to what is thought. From this, it seems that to foster integrative complexity it is important to avoid left hemisphere emotions (anger, inflation) while allowing right brain emotions, for example through activities in which participants need to identify with others as well as connect to their own deep values.

Conclusion

The brain is shaped by what we think and do (within the constraints of brain architecture). It is highly plastic: “use it or lose it” is its rule of
thumb. I have been depicting the consequences of opponent processes slanting toward lack of complexity under stress, toward left-brain defensiveness and toward de-individuation and moral disinhibition. The good news is that this potentially pernicious confluence, which I argue underpins extremism, can also move in directions that favor complex thinking, openness to the “other” and moral responsibility. If a long view of evolution is taken, complexity seems to be the direction of life. But, given current cultural trends, this may not be fulfilled unless we put much more energy into embedding complexity into our neural networks via a cultural evolution that enables balanced dialogue between various kinds of “head” and “heart” knowing that arises, I suggest, from a combination of these three opponent processes.

The rather sparse findings coming out of the flurry of radicalization and terrorism studies begins to make sense in the light of the opponent processes described in this chapter. Socioeconomic status does not distinguish who will turn to extremist violence nor does individual pathology. Far from terrorists being imported external enemies, most have had significant immersion in Western culture. Engineers are overrepresented in terrorist ranks, and most have had minimal if any religious background. Internet sites carry the message and provide images to blunt the sensibilities and promote a cognitive crack. Totalist groups complete the task of de-individuation and dehumanization of the outgroup. The neuronal substratum for violent radicalization is catered for, it seems, through small shifts in these three normal opponent processes.

In this light, I now draw a thumbnail sketch of the radicalized brain:

**Top-Down**

The journey starts with radical discourse with one moral value drawing thinking tightly around it—a means of protecting against threat to important values provoked by the context of globalization. Low complexity thinking with black and white contrasts and the limbic system’s basic, primitive ingroup/outgroup categories provide ready
confirms the radical discourse. The limbic system's tendency to not distinguish past offenses from present realities intensifies threat, and a drop to lower IC inhibits the spread of attention in the manner of left hemisphere specialism.

**Right-Left**

The radicalized brain prefers logical, linear, and abstract thinking within focused attention for instrumental purposes. It is adept at defending its self-contained system of thinking, perceiving only what it expects to perceive, and following its system's rules and its desires for certainty. It operates quite independently of the right brain's connection with emotions of sadness and pity and empathy with others. It eschews the wider context, sees things in isolation, apart from the embodied particularities of lived life. It is cut off from the right hemisphere's ability to discover a gestalt to weave together opposing views. It despises implicit, metaphorical, and multidimensional aspects of lived religion and seeks to replace those with precise meanings cast in words.

**Front-Back**

In the later stages of radicalization involving sequestration from wider society within a totalitarian extremist group or network, the radicalized brain is becoming fused with the group, de-individuated, losing a sense of self, and particularly a sense of self in relation to others (outside the ingroup). Detached from wider society, the ingroup is glorious and the hated outgroup is subhuman. In this small isolated world, a sense of threat increases; it is "them against us." The radicalized brain may find support for its socially and emotionally detached state through heavy Internet use, and to seek, not for patterns of meaning in life, but rather to achieve the next logical task in order to gain a dopamine blast of ultimate reward.

Can we test these ideas through brain imaging studies? It won't be easy. The more complex cognition is, the more likely it is that many regions of the brain will be involved. It is unlikely there will be an "IC"
Sara Savage

spot that conveniently lights up like a light bulb. Even so, it is possible that carefully constructed studies could make some inch-by-inch progress to support some of the connections I have suggested.

To conclude, I have argued that the IC and values complexity framework outworked within group experiential learning helps to assuage threat to important values resulting in value monism, thus avoiding limbic dominance. Thinking complexly is further enabled when communication between right and left hemispheres is resourced, and when experienced in a group context where real people matter.

The implications of this foray into neuroscience leads me to think that the radicalized brain is perhaps different in degree from everyday thinking, but not in kind. Given the current cultural conditions, our everyday thinking probably undergoes the shifts described here pertaining to top-down, right-left, front-back opponent processes on a fairly regular basis. Most of us are quite stressed in work and finances, if not in our relationships and worldview as well. We may calm our limbic responses with numbing or addictive behaviors, living habitually rather than deliberately and interpersonally. Isolated, we live and move in a left hemisphere designed world, and in order to succeed, we develop the left hemisphere’s style of defended, focused, instrumental thinking. All of us are pretty damn sure that our take on reality is correct. Competing viewpoints are screened out. What distinguishes our ordinary thinking from radicalized thinking is perhaps greater flexibility; we move in and out of these opponent shifts without getting stuck. Will that flexibility attenuate if it does not get regular exercise?

There is a need for new kinds of education to balance the left hemisphere style of knowing that Western education predominantly rewards, and to return people to the domain of embodied, rather than virtual, human experience. Far from opportunistically pitting one particular way of knowing against the other, through our IC values interventions (admittedly a drop in a cultural ocean), we recognize the good in both Western secular and traditional religious worldviews and
Head and heart in preventing religious radicalization

maintain that, in the absence of fear, an integration of head and heart ways of knowing holds the possibility of renewal and cross-fertilization for our globalized context.

Notes
1. http://www2.truman.edu/~edis/writings/articles/islamc

References
in Europe and the Middle East: Reassessing the Causes of Terrorism, edited by
Value Complexity: Empirical Assessment of ‘Being Muslim Being British.’"
Peace and Conflict: Journal of Peace Psychology.
University of Chicago Press.
McGilchrist, I. 2009. The Master and His Emissary: The Divided Brain and the
Making of Western Culture. London: Yale University Press.
York: Norton and Company.
Norris, P., and R. Inglehart. 2004. Sacred and Secular: Religion and Politics World-
Petersen, C., and M. E. P. Seligman. 2004. Character Strengths and Virtues: A
sity of Pennsylvania Press.
Savage, S. 2008. "Towards Integrative Solutions to Moral Disputes between Con-
servative and Liberal Christians." The Journal of Psychology and Christianity
Savage, S., and J. Liht. 2008. "Radical Religious Speech: How to Assemble the
Ingredients of a Binary World View." In Extreme Speech and Democracy, edited
Young Muslims. Cambridge: University of Cambridge.
Savage, S., J. Liht, and R. Williams. 2011. "Being Muslim Being British: Prevent-
ing Extremist Violence through Raising Integrative Complexity." In Global
Amsterdam: IOS Press.
Sara Savage


HEAD AND HEART IN PREVENTING RELIGIOUS RADICALIZATION
