The nature of addiction

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THE WORDS 'NATURE' AND 'ADDICTION' have Latin roots that are profound and disturbing: *natus*, born, and *addicere*, to sentence or adjudge. To speak of the nature of addiction is to address its birth. And as we shall see, the birth of addiction may well be part of our birth as human beings – part of human nature. It is entirely likely that we have been sentenced from our very beginnings.

The ancient problem of addiction has recently surfaced as one of the most widely publicized and researched issues of the modern world. During the last two decades, addiction has even become a 'designer disease', a disorder used to explain all manner of personal and social ills.

Yet with all this attention, there is no general agreement about the causes of addiction, nor even about its definition. Instead, differing beliefs have created much confusion and conflict in legal, medical, political and religious arenas.

Models of addiction

There are three major schools of thought about the nature of addiction. The first, which I will call the *moralistic model*, holds that addictions are sinful behaviours resulting from deficiencies of character and/or evil influences. Addicts are generally felt to be morally responsible for the addiction itself as well as its consequences (e.g. crime or family breakdown). According to this view, if addicts suffer from anything, it is a fundamental defectiveness of will. Recovery requires grace. It begins with true repentance and takes on the nature of salvation and, in some cases, deliverance. Considered by many to be outdated, this view is still widely held in conservative religious and political circles – and by many addicts themselves.

A second school of thought, the *disease model*, arose in the last half-century as medical and psychological treatments became widespread. It sees addiction as a pathology like physical or mental illness: a disorder with identifiable causes and prescribed treatments. The disease model places less emphasis on personal culpability than does the moralistic view. Most twelve-step programmes and addiction treatment centres see addiction as a disease, but they take care not to use it as an excuse.

People may not be at fault for the addiction itself, but they remain responsible for any crimes or other destructive behaviours associated with it. As part of the disease model, some people claim to have identified a poorly defined disorder called *addictive personality* that supposedly makes a person especially susceptible to addictions in general.

The third school of thought, which I would call the *scientific model*, draws its conclusions from controlled neurological, physiological and behavioural observations. Such observations indicate that what we call addictions are particularly powerful patterns of human cellular function. For example, laboratory experiments have shown that a single, isolated nerve cell can become addicted to a drug like cocaine through simple physical exposure. Addictive changes are established by this kind of direct chemical effect, by behavioural conditioning, and often by a combination of both. Recovery demands some fundamental revision of these conditioned patterns. Perhaps wisely, the scientific model does not generally address the issue of personal culpability; it leaves such questions to the fields of law and religion.

Towards an integrated view

On the surface, these divergent schools of thought may seem completely irreconcilable, and in some respects they probably are. Yet I believe each holds a wisdom that can contribute to our overall understanding. I further believe that a coherent integration is possible, which can incorporate contributions from all three views. It is to such a synthesis that I address the rest of this article.

The integration will not be perfect, and disagreement is likely to remain. Not everyone will concur, for example, with the strong credibility I give to scientific observations, the theological assumptions I make about grace, or my extensive reliance on twelve-step language. In spite of such continuing differences, however, I feel that an integrated view can contribute substantially to our general understanding of the nature of addiction.

The spirituality of addiction

As a foundation for this synthesis, it is important to consider the spiritual aspects of addiction. By 'spiritual' in this context, I am referring to people's most basic and powerful values, motivations and aspirations. Regardless of one's view of the causes of addiction, there can be little doubt that addiction attacks and undermines these funda-

mental qualities of human life. It can turn the most trustworthy persons into thieves and liars, the most altruistic people into functional narcissists. In terms of behaviour, addiction easily replaces one's love for God and neighbour with a single-minded drive for self-gratification.

As addiction undermines values and motivations, it also inflicts profound guilt, shame and self-deprecation. Although these are essentially psychological phenomena, they assume spiritual significance as they attack the way one values oneself and one's life. This insidious undermining of self-value occurs with relentless progression as one repeatedly tries and fails to overcome the addiction.

All three schools of thought acknowledge this depth of impact. Although the scientific model might not use the term 'spiritual', it has repeatedly demonstrated how conditioned patterns of nerve-cell function can affect fundamental human motive forces. The moralistic model and most disease models go considerably further in recognizing the spiritual dimensions of addiction, and both generally acknowledge the benefit – many would say necessity – of prayer, confession, repentance and the graceful intervention of a 'higher power'. In fact, many members of twelve-step recovery programmes proclaim gratitude for their addictions precisely because of the spiritual awakening they experienced in recovery.

To summarize the spiritual elements of addiction and recovery, we need only look to the Apostle Paul's poignant and painfully accurate description:

> I have been sold as a slave to sin. I cannot understand my own behaviour; I fail to carry out the things I want to do, and I find myself doing the very things that I hate . . . I know of nothing good living in me . . . though the will to do what is good is in me, the performance is not . . . instead of doing the good things I want to do, I carry out the sinful things I do not want . . . What a wretched man I am! Who will rescue me from this body doomed to death? Thanks be to God through Jesus Christ our Lord! (Rom 7:14–25)

Addiction, attachment and the desire for God

Addiction has decidedly spiritual elements both in its effects and in the process of recovery. Many would also say addiction has spiritual *origins*. As indicated above, the moralistic model attributes addictions to personal sinfulness or evil forces impinging upon a person. More popular today is the notion that addictions have their roots in the basic human desire for God.

In preaching to the Athenians about the 'Unknown God', St Paul explained that God created human beings for the purpose of seeking God (Acts 17:27). This implies an innate human yearning for God, an indwelling orientation towards loving God with one's whole being. 'Thou hast made us for thyself,' St Augustine said, 'and our hearts are restless till they rest in thee.'[1]

Augustine and many others observed that human beings seek to satisfy their restlessness through things other than God. In this light, they refined the concept of *attachment*. The word derives from the Old French *a-tache*, meaning 'staked' or 'nailed to'. Attachment 'nails' human desire for God to other things, other people, other endeavours. Often associated with original sin, attachment is seen as inherent in human existence, as much a part of our nature as is our desire for God. To a large extent, the long tradition of spiritual asceticism is an expression of human desire for freedom from attachment.

In sixteenth-century Spain, Teresa of Avila and John of the Cross fully developed a theology of desire and attachment. John of the Cross's great poems and commentaries are centred upon this theme. For John, the 'dark night of the soul' is the process through which a person finds freedom from attachment. In the first part of the night, the *active* night, the person does what is humanly possible to achieve freedom by meditation and practising the virtues and ascetical disciplines. But it is only during the *passive* night, when God's grace begins to lead the soul where it would never go on its own, that freedom actually becomes possible.

From a spiritual perspective, human beings have both an innate desire for God and an equally innate opposing tendency towards attachment. We can turn now to the scientific observations, which I believe explain the psychophysical nature of attachment and addiction.

Conditioning

Behavioural psychology has long observed the formation of habits by a process known as *conditioning*. In brief, conditioning modifies behaviour patterns through associating stimuli with responses. This can happen through simple repetition, or much more powerfully when reward or punishment accompanies the repetition. We consciously use such processes in education and training, but the same mechanisms go on unconsciously within us all the time.

It is through such conditioning that we become accustomed to certain routines and environments, to having certain people around us, to

responding to certain situations in habitual ways. Conditioning accounts for everything we are used to and every habit we have. Our brains and bodies, like those of our animal cousins, need to establish such habits in order to function effectively. If it were not for conditioned habits, we would have to think through every action, every response, every situation afresh. We would have to consider how to form our words when we talk, how to place our feet when we walk. Without conditioning, we would be paralysed.

Although we might not like to admit it, such conditioned habits often are attachments. We see evidence of this when we try to change them. A few habits we can change with simple intentionality. Others, however, are very intransigent. Changing them requires great struggle, stress and pain. These are what the spiritual traditions identify as attachments. Still others resist change no matter how hard we try. We fail at every attempt. It is when an attachment is this powerfully entrenched that we call it addiction.

What accounts for this variation in resistance to change? Why does one pattern of behaviour remain a simple habit, while another becomes so intransigent as to be called addiction? The answer is in the *power* of the conditioning. When behaviour patterns are established through simple repetition, they can usually be changed with relative ease. When, instead, they are entrenched with powerful rewards and/or punishments they become much more inflexible. The physiological processes underlying conditioning have recently been explained by neuroscience.

The physical nature of attachment

Technology developed in the last two decades has enabled neurological researchers to understand quite precisely how conditioning and attachment-formation happen at a cellular level. On the surface of nerve cells (and many other types of cells as well), electron microscopy can identify many sensitive sites that respond in particular ways to specific chemicals. These *receptor sites* are dynamic; they develop and disappear and diminish in response to changes in their chemical milieu.

But every change is an adjustment, and it does not always come easily. In every aspect of life there is an inherent tendency towards *homeostasis*, towards stability. Cells adapt and modify themselves to changes in their environment, but their changes are always pointed in the direction of establishing a new stability in which further change will

be minimized. Once such stability is achieved, it is not relinquished easily.

As I mentioned earlier, it has been demonstrated that a single nerve cell (in this case a giant neurone from a Pacific sea snail) can become addicted to a specific chemical (cocaine) by simple exposure. If a particular chemical has an exceedingly strong potential for effecting change in certain cells, as does cocaine, the cells adapt to it completely and, in some cases, almost instantaneously. When such a strong adaptation has occurred, cells resist relinquishing that adjustment.

It is also important here to understand that cells never act on their own. Instead, they function in *systems*, patterns of interactions among thousands or millions of other cells. For strong conditioning to occur, these entire systems of cells must adapt to a particular chemical's presence or a particular behaviour pattern. In other words, what happens to a single cell is multiplied exponentially by all the other cells involved in a strongly conditioned behaviour.

The reason why some chemicals or behaviours are more addictive than others is that they cause more extensive and profound changes in receptor sites and/or involve greater numbers of cells. In the case of cocaine and other highly addictive chemicals, this effect is direct, pervasive, and extremely rapid. In the case of other compulsive behaviours, such as gambling, the changes are more indirect and take longer to reinforce through repeated intermittent experiences of pleasure. When the patterns are fully entrenched, however, the addiction can be just as severe. The millions of cells involved in the compulsion to gamble have fully adapted to the behaviour. They 'expect' it and, if it does not happen, they will respond with withdrawal symptoms.[2]

We are all addicts

In summary, attachment is grounded in the way cells function normally. The human body, and especially the nervous system, relies upon conditioned habit patterns in order to function. When such conditioning becomes unusually powerful, it constitutes attachment. And when it becomes so strong that it cannot be changed by will-power, it is called addiction.

This conclusion challenges the concept of the addictive personality, and indeed there has never been any scientific demonstration of such a disorder. What has been observed is that some people are especially prone to certain *kinds* of addictions. For example, there is good evi-

dence that a combination of hereditary and environmental factors can predispose a person to become addicted to alcohol. Such individuals require less exposure to the chemical for addiction to happen. Still, anyone can become addicted to alcohol, given sufficient quantity and duration of exposure.

The scientific conclusion is that there is no such thing as an addictive personality. Instead, all human beings are natural subjects for conditioning. We all have attachments. And, at least in certain areas, we all have addictions. To put it concisely, *addiction exists when the collective power of cellular patterns existing to maintain a behaviour is greater than the collective power of cellular patterns that function to oppose it.* This is the neurological definition of addiction. It also provides a scientific basis for the subjective wisdom of twelve-step recovery programmes: *will-power does not work.*

Recovery and the 'higher power'

Scientific addiction research shows clearly why we are 'slaves to sin', why will-power cannot overcome addiction. By definition, if the power of the cellular patterns associated with 'will' is greater than that of the patterns maintaining a particular behaviour, the behaviour is not an addiction. It is simply a bad habit, an attachment that can be modified by scrupulous intention.

If, on the other hand, the behaviour persists despite all one's efforts to overcome it, a full-fledged addiction exists. Most of us take pride in being in control of our lives (yet another attachment!) and we are reluctant to recognize behaviours that we cannot change. Usually the realization only comes after repeated failures, in an atmosphere of despair.

The disease model of addiction recognizes this fact, and appreciates the depths of damage it can do to one's soul. In some cases, however, it also recognizes – as did John of the Cross 400 years ago – that the despair of addiction can be a doorway into spiritual transformation. Twelve-step programmes are especially cognizant of this. The early steps of such programmes are a kind of confession. They admit powerlessness over the addictions, and affirm that surrender to a higher power is essential for recovery. If we adhere to the scientific definition I have given for addiction, where the power of cellular systems maintaining the behaviour is greater than that of systems seeking to oppose it, then indeed one must seek elsewhere – outside one's own nervous system – for additional power.

This higher power can take a variety of forms for recovering addicts. Most often it is seen as divine, as the presence of God or some manifestation of God's grace. Sometimes it takes the form of a collection of other human beings, a loving and firm support system that mediates grace in an incarnate way. It may also take the form of a particular 'treatment', consisting of behavioural de-conditioning or some other prescribed intervention. In matters of recovery, how one views the higher power does not seem to be terribly important. If it is truly a higher power, then its grace can become manifest regardless of how (and even whether) one sees it.

To use the language of John of the Cross, recovery begins when one has passed through the active night of addiction, when one has failed at everything one can do to achieve one's own freedom. At this point, the passive night is the only path remaining, and surrender happens. Then, and only then, true recovery becomes possible. According to twelve-step thought, recovery is an ongoing process. With a real addiction, conditioning is so deep, its patterns so entrenched, that one is always thereafter 'recovering'. The disease model and the moralistic model are in general agreement about this. One may be saved, delivered or in recovery, but one is never free of the need for God's ongoing grace.

In religious terminology, recovery is indeed a form of salvation. Many biblical words implying salvation come from the Hebrew root letters *Y* (*Yodh*) and *S* (*Shin*). Jesus' name, *Yeshua*, 'God saves us', shares this root. The *YS* root implies being set free from confinement, a release from slavery. This is precisely what happens in addiction recovery. Through the grace of a higher power, one is freed from the compulsion to follow entrenched patterns of attachment.

Moral responsibility

One might make a case that the human propensity for addiction is a corollary of original sin. We are born with it. It is in our nature, in the very structure of the cells of our bodies. Similarly, and perhaps more popularly nowadays, one could pose the converse; that original sin is a metaphor for human addiction. Like St Paul, all of us too often find ourselves doing the things we hate and avoiding the things we know are good. And all of us are in need of the grace of a higher power if we are to have any hope of growth towards freedom.

In terms of moral responsibility then, perhaps the twelve-step approach to addiction applies. We human beings are no more personally responsible for our inherent tendencies towards addiction than we

are for the fall of Adam. How we are born, and the way our bodies work, are beyond our control. At the same time though, we retain a certain capacity to choose our specific behaviours. To say it simplistically, we may not be responsible for our alcoholism, but we are responsible for taking a drink. We may have nothing to say about the effects a narcotic has on our nerve cells, but we are responsible for injecting the drug. We should be held accountable for all our behaviour, including that associated with addiction. Acknowledging this responsibility, we also must recognize that a person's freedom of choice is to some extent compromised by the collective power of cellular patterns driving the addictive behaviour. Human freedom is never absolute, but its relativity is nowhere more obvious than in the face of addiction.

If freedom is relative, so is responsibility. It is ironic that many addicts, rather than using this diminishment of freedom as excuse, refuse to admit it altogether. Even when confronted with massive evidence to the contrary, addicted persons are likely to maintain that they 'can handle it'. As the twelve-step programmes know so well, a realization and frank admission that 'I *cannot* handle it' is a prerequisite for beginning recovery.

Enlightened approaches to addiction recognize that people are responsible and accountable for their behaviour. But they also acknowledge that when a behaviour is associated with addiction, punishment alone seldom does any good. What is needed instead is a pooling of surrounding resources, a gathering of *additional power* around the person. In effective interventions, friends, family, co-workers, caregivers and authorities combine to reinforce the patterns in a person's brain that seek to stop the addictive behaviour. This may happen willingly or under duress, but happen it must.

Here we can identify another aspect of addiction that mirrors religious truth: addiction might take place in solitude, but recovery occurs in community. For the recovering addict, society must play a part in the mediation of grace.

Addiction to social systems

But what if the society itself is addicted? Popular authors tell us that society is addicted not just to social ills such as drugs, warfare and prejudice of all kinds but also to more subtle forms of addiction – romance, fashion, the cult of youth. Although the term has clearly been overused, I think there is a strong element of truth in what they say.

Consider again the role that a single nerve cell plays in a human being's addiction. That individual cell is intimately related, through patterns of interactivity, with countless other cells, and it is the *collective* effect of those patterns that results in what we finally call addiction. To put it another way, individual cells – each a living entity in its own right – form systems of collective activity. It has been said that each human organ represents such a system of cells functioning together, and these systems combine to create a human being. Human beings, in turn, form systems with one another: families, communities, societies, and so on.

If addictive behaviour develops among systems of cells as I have described it, a similar process happens among systems of people. Objective social research and the subjective experience of people in recovery validate this conclusion in terms of family systems. Twelve-step support groups for families and friends of addicts (such as Al-Anon and Narc-Anon) have repeatedly demonstrated how the people closest to an addict unconsciously collude to 'enable' the continuation of the addiction. Such groups maintain that recovery for the identified addict requires a similar recovery process for those closest to that person.

If addiction can enslave close social groups as it enslaves individuals, it is logical to conclude that some similar processes occur in larger collections of people as well: in communities, churches, businesses, nations, societies, cultures, and perhaps even in humanity as a whole. If this is true, we must with grace come to recognize that we *corporately* do the things we hate and fail to do the things we want. Although we must try to change the things we can, destructive patterns of social functioning will remain that our social will cannot change. It then becomes time to admit our collective powerlessness. Such admissions are very difficult for individuals; they may be nearly impossible for societies. As with individuals, societies may need to come to a 'rock bottom' experience before recognizing that 'a Power greater than ourselves could restore us to sanity'.

I have used twelve-step language extensively here because it seems to work well in integrating the disparate views of addiction. I do not, however, believe that a twelve-step approach can solve the addictive ills society may suffer. In fact, if I am correct in posing that addiction is a part of human nature, the notion of 'solving' addiction is mistaken at the outset.

If we are indeed 'sentenced from our birth', we will remain addicts as long as we are in these bodies, and our societies will remain addicted as long as they inhabit this earth. In that case, our hope is not to *achieve*

freedom, but to grow towards it through God's grace, and to maximize the good and minimize the damage we do on the way. It is the hope expressed in the prayer with which St Paul ended his confession: 'Who will rescue me from this body doomed to death? Thanks be to God through Jesus Christ our Lord!' It is in such hope that I have offered these reflections.[3]

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NOTES

1 *Confessions* I:1 in F. J. Sheed (trans), *The confessions of St Augustine, Books I–X* (New York: Sheed & Ward, 1942), p 3.

2 It may be noted that I have neglected discussing both withdrawal symptoms and tolerance, phenomena classically associated with addiction. Withdrawal symptoms are a reflection of the stress experienced by cells when the expected chemical or behaviour is absent. Tolerance is the increasing need for the behaviour or chemical to maintain satisfaction. Both have cellular manifestations, but both are also so variable that an adequate discussion cannot take place here.

3 I have described more fully the foundations underlying this article's proposals in *Addiction and grace* (New York: HarperCollins, 1991).